

BAB 6

KESIMPULAN DAN SARAN

6.1. Kesimpulan

Model yang dibuat berdasarkan sistem nyata dari rantai produksi PT. Iprima Nusapermata Dianmas. Model simulasi dibuat dengan menggunakan *software* ARENA 7.0 Academic Mode. Dari hasil uji verifikasi dan validasi, model yang dibuat sudah cukup mempresentasikan kondisi sistem nyatanya.

Hasil analisis model sistem semula menunjukkan adanya stasiun *bottleneck*, yaitu pada *thicknesser* dan *final sanding*. Rata-rata utilitas lintasan secara keseluruhan 0,5367 dan rata-rata jumlah produk yang dihasilkan 181,1 unit.

Analisis penentuan ukuran *buffer* optimal dilakukan secara *trial and error*, berdasarkan utilitas tertinggi yang dihasilkan. Dari hasil analisis tersebut didapatkan ukuran *buffer* optimal untuk *single rip saw* 0, *planer* 0, *thicknesser* 1, *radial arm saw* 1, *double end tenoning* 1, *router* 0, bor horisontal 1, *assembly* 0, *final sanding* 3, dan *packing* 1.

Dengan menggunakan ukuran *buffer* optimal tersebut rata-rata utilitas lintasan secara keseluruhan meningkat 18,5%, yaitu dari 0,5367 menjadi 0,636. Rata-rata jumlah *output* produk yang dihasilkan juga mengalami peningkatan sebesar 24,74% yaitu dari 181,1 unit menjadi 225,9 unit.

6.2. Saran

Penulis menyarankan kepada perusahaan agar ukuran *buffer* yang digunakan tidak melebihi ukuran *buffer* optimalnya, karena semakin besar ukuran *buffer* akan semakin besar pula biaya persediaan yang berarti penggunaan modal tidak efisien.

Penulis juga menyarankan kepada perusahaan agar dalam pelaksanaan perubahan sistem produksinya selain mengacu dari hasil penelitian ini, juga harus dengan menggunakan pengalaman dan intuisi dari orang yang mengerti dan terkait secara langsung dengan kondisi nyata di perusahaan.

DAFTAR PUSTAKA

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Lampiran 1: Verifikasi model dan penentuan warm-up period

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 1 of 10

Project: Verifikasi dan Penentuan Warmup Period
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6768	(Insuf)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3889	(Insuf)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.1885	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.37182	(Insuf)	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.678	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	1.9995	(Insuf)	.00000	4.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.77129	(Insuf)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5832	(Insuf)	.00000	2.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1204	(Insuf)	.00000	2.0000	2.0000
Thickneser_R Busy	2.5168	(Insuf)	.00000	3.0000	2.0000
Final Sanding_R Available	4.6963	(Insuf)	.00000	6.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	115	Infinite
Assembly_C	122	Infinite
Thickneser_C	129	Infinite
Radial Arm Saw_C	128	Infinite
Bor Horizontal_C	125	Infinite
Router_C	126	Infinite
Double End Tenoning_C	126	Infinite
Planer_C	131	Infinite
Kedatangan entitas_C	134	Infinite
Packing_C	115	Infinite
Final Sanding_C	117	Infinite
Single Rip Saw_C	133	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000
Assembly_R.NumberSeized	124.00
Assembly_R.ScheduledUtilization	.49988
Thickneser_R.NumberSeized	131.00
Thickneser_R.ScheduledUtilization	.83896
Radial Arm Saw_R.NumberSeized	129.00
Radial Arm Saw_R.ScheduledUtilization	.77129
Bor Horizontal_R.NumberSeized	126.00
Bor Horizontal_R.ScheduledUtilization	.59428
Router_R.NumberSeized	126.00
Router_R.ScheduledUtilization	.18591
Double End Tenoning_R.NumberSeized	128.00

Double End Tenoning_R.ScheduledUtilization .83840
 Planer_R.NumberSeized 133.00
 Planer_R.ScheduledUtilization .37349
 Packing_R.NumberSeized 117.00
 Packing_R.ScheduledUtilization .69447
 Final Sanding_R.NumberSeized 122.00
 Final Sanding_R.ScheduledUtilization .78273
 Single Rip Saw_R.NumberSeized 134.00
 Single Rip Saw_R.ScheduledUtilization .52774
 System.NumberOut 115.00

Beginning replication 2 of 10

ARENA Simulation Results
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Summary for Replication 2 of 10

Project: Verifikasi dan Penentuan Warmup Period
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6465	(Insuf)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3895	(Insuf)	.00000	2.0000	1.0000
Bor Horisontal_R Busy	1.1642	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36212	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.509	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	1.9981	(Insuf)	.00000	4.0000	2.0000
Bor Horisontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.76485	(Insuf)	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5822	(Insuf)	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1136	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.4942	(Insuf)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.6528	(Insuf)	.00000	6.0000	6.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	114	Infinite
Assembly_C	121	Infinite
Thickneser_C	127	Infinite
Radial Arm Saw_C	127	Infinite
Bor Horisontal_C	123	Infinite
Router_C	124	Infinite
Double End Tenoning_C	125	Infinite
Planer_C	130	Infinite
Kedatangan entitas_C	133	Infinite
Packing_C	114	Infinite
Final Sanding_C	115	Infinite
Single Rip Saw_C	131	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000

```

Assembly_R.NumberSeized          123.00
Assembly_R.ScheduledUtilization  .49954
Thickneser_R.NumberSeized       130.00
Thickneser_R.ScheduledUtilization .83141
Radial Arm Saw_R.NumberSeized    127.00
Radial Arm Saw_R.ScheduledUtilization .76485
Bor Horisontal_R.NumberSeized    124.00
Bor Horisontal_R.ScheduledUtilization .58210
Router_R.NumberSeized            125.00
Router_R.ScheduledUtilization    .18106
Double End Tenoning_R.NumberSeized 127.00
Double End Tenoning_R.ScheduledUtilization .82328
Planer_R.NumberSeized            131.00
Planer_R.ScheduledUtilization    .37122
Packing_R.NumberSeized           115.00
Packing_R.ScheduledUtilization    .69477
Final Sanding_R.NumberSeized     121.00
Final Sanding_R.ScheduledUtilization .77547
Single Rip Saw_R.NumberSeized    133.00
Single Rip Saw_R.ScheduledUtilization .52741
System.NumberOut                 114.00

```

Beginning replication 3 of 10

ARENA Simulation Results
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Summary for Replication 3 of 10

Project: Verifikasi dan Penentuan Warmup Period
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6799	(Insuf)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3858	(Insuf)	.00000	2.0000	2.0000
Bor Horisontal_R Busy	1.1899	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36674	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.697	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	1.9956	(Insuf)	.00000	4.0000	2.0000
Bor Horisontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.77396	(Insuf)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5944	(Insuf)	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1250	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.5096	(Insuf)	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7126	(Insuf)	.00000	6.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	115	Infinite
Assembly_C	122	Infinite
Thickneser_C	129	Infinite
Radial Arm Saw_C	128	Infinite
Bor Horisontal_C	124	Infinite
Router_C	125	Infinite
Double End Tenoning_C	126	Infinite
Planer_C	131	Infinite

Kedatangan entitas_C	134	Infinite
Packing_C	115	Infinite
Final Sanding_C	117	Infinite
Single Rip Saw_C	132	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000
Assembly_R.NumberSeized	124.00
Assembly_R.ScheduledUtilization	.49891
Thickneser_R.NumberSeized	131.00
Thickneser_R.ScheduledUtilization	.83654
Radial Arm Saw_R.NumberSeized	129.00
Radial Arm Saw_R.ScheduledUtilization	.77396
Bor Horizontal_R.NumberSeized	125.00
Bor Horizontal_R.ScheduledUtilization	.59497
Router_R.NumberSeized	126.00
Router_R.ScheduledUtilization	.18337
Double End Tenoning_R.NumberSeized	128.00
Double End Tenoning_R.ScheduledUtilization	.83999
Planer_R.NumberSeized	132.00
Planer_R.ScheduledUtilization	.37503
Packing_R.NumberSeized	117.00
Packing_R.ScheduledUtilization	.69293
Final Sanding_R.NumberSeized	122.00
Final Sanding_R.ScheduledUtilization	.78544
Single Rip Saw_R.NumberSeized	134.00
Single Rip Saw_R.ScheduledUtilization	.53148
System.NumberOut	115.00

Beginning replication 4 of 10

ARENA Simulation Results
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Summary for Replication 4 of 10

Project: Verifikasi dan Penentuan Warmup Period
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6697	(Insuf)	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3887	(Insuf)	.00000	2.0000	1.0000
Bor Horizontal_R Busy	1.1784	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36738	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.604	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	1.9933	(Insuf)	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.76808	(Insuf)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5841	(Insuf)	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1125	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.5185	(Insuf)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.6895	(Insuf)	.00000	6.0000	6.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	115	Infinite
Assembly_C	122	Infinite
Thickneser_C	128	Infinite
Radial Arm Saw_C	127	Infinite
Bor Horizontal_C	124	Infinite
Router_C	125	Infinite
Double End Tenoning_C	126	Infinite
Planer_C	131	Infinite
Kedatangan entitas_C	134	Infinite
Packing_C	115	Infinite
Final Sanding_C	116	Infinite
Single Rip Saw_C	132	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000
Assembly_R.NumberSeized	124.00
Assembly_R.ScheduledUtilization	.49834
Thickneser_R.NumberSeized	131.00
Thickneser_R.ScheduledUtilization	.83953
Radial Arm Saw_R.NumberSeized	128.00
Radial Arm Saw_R.ScheduledUtilization	.76808
Bor Horizontal_R.NumberSeized	125.00
Bor Horizontal_R.ScheduledUtilization	.58922
Router_R.NumberSeized	126.00
Router_R.ScheduledUtilization	.18369
Double End Tenoning_R.NumberSeized	127.00
Double End Tenoning_R.ScheduledUtilization	.83485
Planer_R.NumberSeized	132.00
Planer_R.ScheduledUtilization	.37086
Packing_R.NumberSeized	116.00
Packing_R.ScheduledUtilization	.69436
Final Sanding_R.NumberSeized	122.00
Final Sanding_R.ScheduledUtilization	.78159
Single Rip Saw_R.NumberSeized	134.00
Single Rip Saw_R.ScheduledUtilization	.52804
System.NumberOut	115.00

Beginning replication 5 of 10

ARENA Simulation Results
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Summary for Replication 5 of 10

Project: Verifikasi dan Penentuan Warmup Period
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6583	(Insuf)	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3835	(Insuf)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.1618	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36792	(Insuf)	.00000	1.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.438	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	1.9797	(Insuf)	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.77455	(Insuf)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5540	(Insuf)	.00000	2.0000	1.0000

Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.0999	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.4774	(Insuf)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.6340	(Insuf)	.00000	6.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	113	Infinite
Assembly_C	121	Infinite
Thickneser_C	127	Infinite
Radial Arm Saw_C	126	Infinite
Bor Horizontal_C	123	Infinite
Router_C	124	Infinite
Double End Tenoning_C	125	Infinite
Planer_C	130	Infinite
Kedatangan entitas_C	132	Infinite
Packing_C	114	Infinite
Final Sanding_C	116	Infinite
Single Rip Saw_C	131	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000
Assembly_R.NumberSeized	123.00
Assembly_R.ScheduledUtilization	.49493
Thickneser_R.NumberSeized	130.00
Thickneser_R.ScheduledUtilization	.82582
Radial Arm Saw_R.NumberSeized	127.00
Radial Arm Saw_R.ScheduledUtilization	.77455
Bor Horizontal_R.NumberSeized	124.00
Bor Horizontal_R.ScheduledUtilization	.58093
Router_R.NumberSeized	125.00
Router_R.ScheduledUtilization	.18396
Double End Tenoning_R.NumberSeized	126.00
Double End Tenoning_R.ScheduledUtilization	.82915
Planer_R.NumberSeized	131.00
Planer_R.ScheduledUtilization	.36664
Packing_R.NumberSeized	116.00
Packing_R.ScheduledUtilization	.69176
Final Sanding_R.NumberSeized	121.00
Final Sanding_R.ScheduledUtilization	.77233
Single Rip Saw_R.NumberSeized	132.00
Single Rip Saw_R.ScheduledUtilization	.51800
System.NumberOut	113.00

Beginning replication 6 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 6 of 10

Project: Verifikasi dan Penentuan Warmup Period
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6753	(Insuf)	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000

Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3684	(Insuf)	.00000	2.0000	1.0000
Bor Horizontal_R Busy	1.1519	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36469	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.551	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	2.0002	(Insuf)	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.77097	(Insuf)	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5682	(Insuf)	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1092	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.5063	(Insuf)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.6744	(Insuf)	.00000	6.0000	6.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	115	Infinite
Assembly_C	122	Infinite
Thickneser_C	128	Infinite
Radial Arm Saw_C	128	Infinite
Bor Horizontal_C	124	Infinite
Router_C	125	Infinite
Double End Tenoning_C	126	Infinite
Planer_C	131	Infinite
Kedatangan entitas_C	134	Infinite
Packing_C	115	Infinite
Final Sanding_C	116	Infinite
Single Rip Saw_C	132	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000
Assembly_R.NumberSeized	124.00
Assembly_R.ScheduledUtilization	.50007
Thickneser_R.NumberSeized	131.00
Thickneser_R.ScheduledUtilization	.83544
Radial Arm Saw_R.NumberSeized	128.00
Radial Arm Saw_R.ScheduledUtilization	.77097
Bor Horizontal_R.NumberSeized	125.00
Bor Horizontal_R.ScheduledUtilization	.57598
Router_R.NumberSeized	126.00
Router_R.ScheduledUtilization	.18234
Double End Tenoning_R.NumberSeized	127.00
Double End Tenoning_R.ScheduledUtilization	.83769
Planer_R.NumberSeized	132.00
Planer_R.ScheduledUtilization	.36975
Packing_R.NumberSeized	116.00
Packing_R.ScheduledUtilization	.68421
Final Sanding_R.NumberSeized	122.00
Final Sanding_R.ScheduledUtilization	.77907
Single Rip Saw_R.NumberSeized	134.00
Single Rip Saw_R.ScheduledUtilization	.52274
System.NumberOut	115.00

Beginning replication 7 of 10

ARENA Simulation Results
 Bayu Sulistiyadi - License: STUDENT
 Summary for Replication 7 of 10

Project: Verifikasi dan Penentuan Warmup Period
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6293	(Insuf)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3725	(Insuf)	.00000	2.0000	1.0000
Bor Horizontal_R Busy	1.1737	(Insuf)	.00000	2.0000	2.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36363	(Insuf)	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.385	(Insuf)	.00000	20.000	18.000
Assembly_R Busy	1.9745	(Insuf)	.00000	4.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78013	(Insuf)	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5685	(Insuf)	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1028	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.4576	(Insuf)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.6240	(Insuf)	.00000	6.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	114	Infinite
Assembly_C	120	Infinite
Thickneser_C	126	Infinite
Radial Arm Saw_C	126	Infinite
Bor Horizontal_C	122	Infinite
Router_C	124	Infinite
Double End Tenoning_C	124	Infinite
Planer_C	129	Infinite
Kedatangan entitas_C	132	Infinite
Packing_C	114	Infinite
Final Sanding_C	115	Infinite
Single Rip Saw_C	130	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	18.000
Assembly_R.NumberSeized	122.00
Assembly_R.ScheduledUtilization	.49363
Thickneser_R.NumberSeized	129.00
Thickneser_R.ScheduledUtilization	.81923
Radial Arm Saw_R.NumberSeized	126.00
Radial Arm Saw_R.ScheduledUtilization	.78013
Bor Horizontal_R.NumberSeized	124.00
Bor Horizontal_R.ScheduledUtilization	.58687
Router_R.NumberSeized	124.00
Router_R.ScheduledUtilization	.18181
Double End Tenoning_R.NumberSeized	126.00
Double End Tenoning_R.ScheduledUtilization	.81465
Planer_R.NumberSeized	130.00
Planer_R.ScheduledUtilization	.36760
Packing_R.NumberSeized	115.00
Packing_R.ScheduledUtilization	.68627
Final Sanding_R.NumberSeized	120.00
Final Sanding_R.ScheduledUtilization	.77068
Single Rip Saw_R.NumberSeized	132.00
Single Rip Saw_R.ScheduledUtilization	.52285
System.NumberOut	114.00

Beginning replication 8 of 10

ARENA Simulation Results
 Bayu Sulistiyadi - License: STUDENT

Summary for Replication 8 of 10

Project: Verifikasi dan Penentuan Warmup Period
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6859	(Insuf)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4034	(Insuf)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.1857	(Insuf)	.00000	2.0000	.00000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.37547	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average WIP	17.710	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	2.0071	(Insuf)	.00000	3.0000	3.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.77709	(Insuf)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5882	(Insuf)	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1224	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.5135	(Insuf)	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7045	(Insuf)	.00000	6.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	115	Infinite
Assembly_C	122	Infinite
Thickneser_C	129	Infinite
Radial Arm Saw_C	128	Infinite
Bor Horizontal_C	125	Infinite
Router_C	125	Infinite
Double End Tenoning_C	126	Infinite
Planer_C	131	Infinite
Kedatangan entitas_C	134	Infinite
Packing_C	115	Infinite
Final Sanding_C	117	Infinite
Single Rip Saw_C	132	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000
Assembly_R.NumberSeized	125.00
Assembly_R.ScheduledUtilization	.50179
Thickneser_R.NumberSeized	131.00
Thickneser_R.ScheduledUtilization	.83786
Radial Arm Saw_R.NumberSeized	129.00
Radial Arm Saw_R.ScheduledUtilization	.77709
Bor Horizontal_R.NumberSeized	125.00
Bor Horizontal_R.ScheduledUtilization	.59285
Router_R.NumberSeized	126.00
Router_R.ScheduledUtilization	.18773
Double End Tenoning_R.NumberSeized	128.00

Double End Tenoning_R.ScheduledUtilization .84295
 Planer_R.NumberSeized 132.00
 Planer_R.ScheduledUtilization .37414
 Packing_R.NumberSeized 117.00
 Packing_R.ScheduledUtilization .70174
 Final Sanding_R.NumberSeized 122.00
 Final Sanding_R.ScheduledUtilization .78409
 Single Rip Saw_R.NumberSeized 134.00
 Single Rip Saw_R.ScheduledUtilization .52942
 System.NumberOut 115.00

Beginning replication 9 of 10

ARENA Simulation Results
 Bayu Sulistiyadi - License: STUDENT

Summary for Replication 9 of 10

Project: Verifikasi dan Penentuan Warmup Period
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6621	(Insuf)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3783	(Insuf)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.1693	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36460	(Insuf)	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.593	(Insuf)	.00000	20.000	19.0000
Assembly_R Busy	2.0075	(Insuf)	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.77760	(Insuf)	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5934	(Insuf)	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1136	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.5000	(Insuf)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.6867	(Insuf)	.00000	6.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	115	Infinite
Assembly_C	122	Infinite
Thickneser_C	128	Infinite
Radial Arm Saw_C	128	Infinite
Bor Horizontal_C	124	Infinite
Router_C	125	Infinite
Double End Tenoning_C	125	Infinite
Planer_C	131	Infinite
Kedatangan entitas_C	134	Infinite
Packing_C	115	Infinite
Final Sanding_C	117	Infinite
Single Rip Saw_C	132	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000

Assembly_R.NumberSeized	124.00
Assembly_R.ScheduledUtilization	.50189
Thickneser_R.NumberSeized	131.00
Thickneser_R.ScheduledUtilization	.83334
Radial Arm Saw_R.NumberSeized	128.00
Radial Arm Saw_R.ScheduledUtilization	.77760
Bor Horisontal_R.NumberSeized	125.00
Bor Horisontal_R.ScheduledUtilization	.58467
Router_R.NumberSeized	125.00
Router_R.ScheduledUtilization	.18230
Double End Tenoning_R.NumberSeized	127.00
Double End Tenoning_R.ScheduledUtilization	.83109
Planer_R.NumberSeized	132.00
Planer_R.ScheduledUtilization	.37121
Packing_R.NumberSeized	117.00
Packing_R.ScheduledUtilization	.68915
Final Sanding_R.NumberSeized	122.00
Final Sanding_R.ScheduledUtilization	.78112
Single Rip Saw_R.NumberSeized	134.00
Single Rip Saw_R.ScheduledUtilization	.53115
System.NumberOut	115.00

Beginning replication 10 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 10 of 10

Project: Verifikasi dan Penentuan Warmup Period
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 15000.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6785	(Insuf)	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.3982	(Insuf)	.00000	2.0000	2.0000
Bor Horisontal_R Busy	1.1904	(Insuf)	.00000	2.0000	1.0000
Final Sanding_R Available	6.0000	(Insuf)	6.0000	6.0000	6.0000
Router_R Busy	.36823	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	17.647	(Insuf)	.00000	20.000	19.000
Assembly_R Busy	2.0009	(Insuf)	.00000	3.0000	1.0000
Bor Horisontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.76984	(Insuf)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5663	(Insuf)	.00000	2.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1208	(Insuf)	.00000	2.0000	1.0000
Thickneser_R Busy	2.5008	(Insuf)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.6764	(Insuf)	.00000	6.0000	4.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	115	Infinite
Assembly_C	122	Infinite
Thickneser_C	128	Infinite
Radial Arm Saw_C	127	Infinite
Bor Horisontal_C	124	Infinite
Router_C	125	Infinite
Double End Tenoning_C	126	Infinite
Planer_C	131	Infinite
Kedatangan entitas_C	134	Infinite

Packing_C	115	Infinite
Final Sanding_C	117	Infinite
Single Rip Saw_C	132	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	19.000
Assembly_R.NumberSeized	123.00
Assembly_R.ScheduledUtilization	.50023
Thickneser_R.NumberSeized	131.00
Thickneser_R.ScheduledUtilization	.83363
Radial Arm Saw_R.NumberSeized	128.00
Radial Arm Saw_R.ScheduledUtilization	.76984
Bor Horizontal_R.NumberSeized	125.00
Bor Horizontal_R.ScheduledUtilization	.59524
Router_R.NumberSeized	126.00
Router_R.ScheduledUtilization	.18412
Double End Tenoning_R.NumberSeized	127.00
Double End Tenoning_R.ScheduledUtilization	.83930
Planer_R.NumberSeized	132.00
Planer_R.ScheduledUtilization	.37361
Packing_R.NumberSeized	117.00
Packing_R.ScheduledUtilization	.69914
Final Sanding_R.NumberSeized	121.00
Final Sanding_R.ScheduledUtilization	.77940
Single Rip Saw_R.NumberSeized	133.00
Single Rip Saw_R.ScheduledUtilization	.52213
System.NumberOut	115.00

ARENA Simulation Results
 Bayu Sulistiyadi - License: STUDENT

Output Summary for 10 Replications

Project: Verifikasi dan Penentuan Warmup Period
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

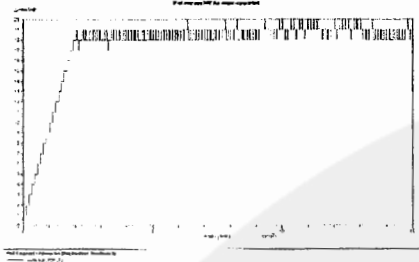
OUTPUTS

Identifier	Average	Half-width	Minimum	Maximum	# Replications
Entitas di dalam sistem	18.900	.22620	18.000	19.000	10
Assembly_R.NumberSeized	123.60	.60320	122.00	125.00	10
Assembly_R.ScheduledUtilization	.49892	.00193	.49363	.50189	10
Thickneser_R.NumberSeized	130.60	.50015	129.00	131.00	10
Thickneser_R.ScheduledUtilization	.83318	.00455	.81923	.83953	10
Radial Arm Saw_R.NumberSeized	127.90	.71132	126.00	129.00	10
Radial Arm Saw_R.ScheduledUtilization	.77284	.00337	.76485	.78013	10
Bor Horizontal_R.NumberSeized	124.80	.45240	124.00	126.00	10
Bor Horizontal_R.ScheduledUtilization	.58771	.00481	.57598	.59524	10
Router_R.NumberSeized	125.50	.50580	124.00	126.00	10
Router_R.ScheduledUtilization	.18363	.00143	.18106	.18773	10
Double End Tenoning_R.NumberSeized	127.10	.52780	126.00	128.00	10
Double End Tenoning_R.ScheduledUtilization	.83313	.00627	.81465	.84295	10
Planer_R.NumberSeized	131.70	.58889	130.00	133.00	10
Planer_R.ScheduledUtilization	.37136	.00200	.36664	.37503	10
Packing_R.NumberSeized	116.30	.58889	115.00	117.00	10
Packing_R.ScheduledUtilization	.69288	.00384	.68421	.70174	10
Final Sanding_R.NumberSeized	121.50	.50580	120.00	122.00	10
Final Sanding_R.ScheduledUtilization	.77919	.00352	.77068	.78544	10
Single Rip Saw_R.NumberSeized	133.40	.60320	132.00	134.00	10
Single Rip Saw_R.ScheduledUtilization	.52610	.00317	.51800	.53148	10
System.NumberOut	114.60	.50015	113.00	115.00	10

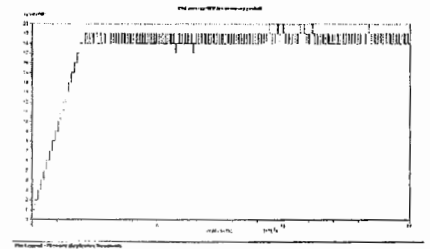
Simulation run time: 0.05 minutes.
 Simulation run complete.

Lampiran 2 : Grafik average WIP

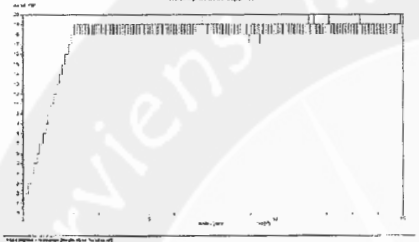
Replikasi ke-1



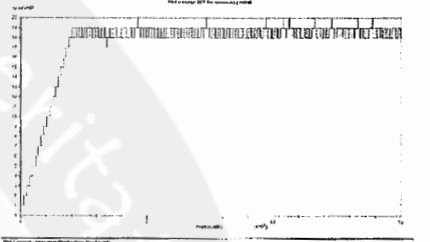
Replikasi ke-2



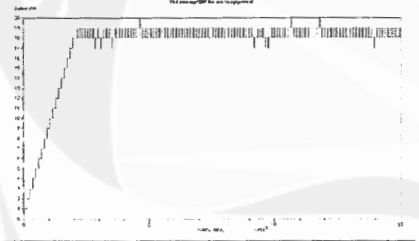
Replikasi ke-3



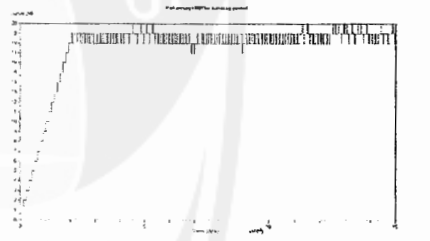
Replikasi ke-4



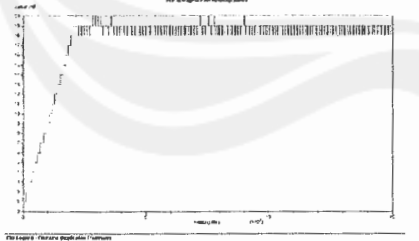
Replikasi ke-5



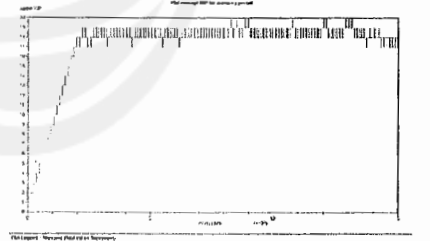
Replikasi ke-6



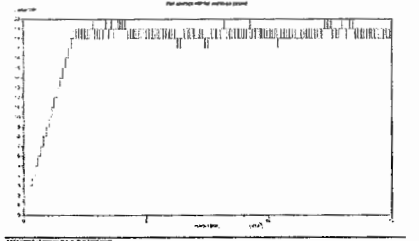
Replikasi ke-7



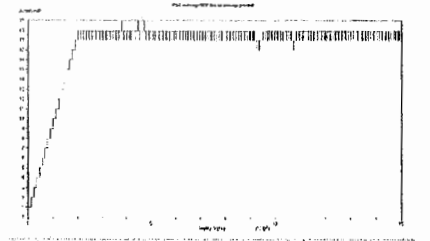
Replikasi ke-8



Replikasi ke-9



Replikasi ke-10



Lampiran 3 : Penentuan Jumlah Replikasi dan Model Sistem Semula

ARENA Simulation Results
 Bayu Sulistiyadi - License: STUDENT

Summary for Replication 1 of 10

Project: Model Sistem Semula
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
 Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
 Statistics accumulated for time: 28800.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.2945	.05068	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.0930	.05078	.00000	2.0000	1.0000
Bor Horizontal_R Busy	.93676	(Corr)	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.28410	.01159	.00000	1.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average WIP	36.764	(Corr)	-1.0000	78.000	77.000
Assembly_R Busy	1.6061	(Corr)	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.60672	.02638	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5675	.01953	1.0000	2.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1299	.01248	.00000	2.0000	2.0000
Thickneser_R Busy	2.5066	.04711	1.0000	3.0000	2.0000
Final Sanding_R Busy	3.7222	.12539	2.0000	5.0000	4.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	177	Infinite
Assembly_C	189	Infinite
Thickneser_C	249	Infinite
Radial Arm Saw_C	192	Infinite
Bor Horizontal_C	189	Infinite
Router_C	188	Infinite
Double End Tenoning_C	188	Infinite
Planer_C	254	Infinite
Kedatangan entitas_C	254	Infinite
Packing_C	177	Infinite
Final Sanding_C	182	Infinite
Single Rip Saw_C	255	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	77.000
Assembly_R.NumberSeized	189.00
Assembly_R.ScheduledUtilization	.40153
Thickneser_R.NumberSeized	248.00
Thickneser_R.ScheduledUtilization	.83555
Radial Arm Saw_R.NumberSeized	193.00
Radial Arm Saw_R.ScheduledUtilization	.60672
Bor Horizontal_R.NumberSeized	188.00
Bor Horizontal_R.ScheduledUtilization	.46838

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Router_R.NumberSeized          188.00
Router_R.ScheduledUtilization  .14205
Double End Tenoning_R.NumberSeized 188.00
Double End Tenoning_R.ScheduledUtilization .64728
Planer_R.NumberSeized          255.00
Planer_R.ScheduledUtilization  .37666
Packing_R.NumberSeized         177.00
Packing_R.ScheduledUtilization  .54651
Final Sanding_R.NumberSeized    182.00
Final Sanding_R.ScheduledUtilization .74445
Single Rip Saw_R.NumberSeized   254.00
Single Rip Saw_R.ScheduledUtilization .52253
System.NumberOut                255.00

```

Beginning replication 2 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 2 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.2720	.05837	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1115	.04442	.00000	2.0000	1.0000
Bor Horizontal_R Busy	.91910	.04894	.00000	2.0000	.00000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.28057	.01125	.00000	1.0000	.00000
Thickneser R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	38.196	(Corr)	-1.0000	76.000	76.000
Assembly_R Busy	1.5790	.06217	.00000	3.0000	1.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.61035	.02926	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5716	.01433	1.0000	3.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1247	.01118	.00000	2.0000	1.0000
Thickneser R Busy	2.4993	.04486	1.0000	3.0000	3.0000
Final Sanding_R Busy	3.7322	.15075	2.0000	5.0000	3.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	178	Infinite
Assembly_C	186	Infinite
Thickneser_C	249	Infinite
Radial Arm Saw_C	192	Infinite
Bor Horizontal_C	186	Infinite
Router_C	185	Infinite
Double End Tenoning_C	184	Infinite
Planer_C	255	Infinite
Kedatangan entitas_C	254	Infinite
Packing_C	178	Infinite
Final Sanding_C	182	Infinite
Single Rip Saw_C	255	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	76.000
Assembly_R.NumberSeized	185.00
Assembly_R.ScheduledUtilization	.39475
Thickneser_R.NumberSeized	249.00
Thickneser_R.ScheduledUtilization	.83311
Radial Arm Saw_R.NumberSeized	193.00
Radial Arm Saw_R.ScheduledUtilization	.61035
Bor Horizontal_R.NumberSeized	185.00
Bor Horizontal_R.ScheduledUtilization	.45955
Router_R.NumberSeized	184.00
Router_R.ScheduledUtilization	.14029
Double End Tenoning_R.NumberSeized	185.00
Double End Tenoning_R.ScheduledUtilization	.63605
Planer_R.NumberSeized	255.00
Planer_R.ScheduledUtilization	.37493
Packing_R.NumberSeized	178.00
Packing_R.ScheduledUtilization	.55576
Final Sanding_R.NumberSeized	181.00
Final Sanding_R.ScheduledUtilization	.74645
Single Rip Saw_R.NumberSeized	254.00
Single Rip Saw_R.ScheduledUtilization	.52387
System.NumberOut	255.00

Beginning replication 3 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 3 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.3295	.05226	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1244	.04760	.00000	2.0000	2.0000
Bor Horizontal_R Busy	.96651	.04980	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.29658	.01695	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	37.713	(Corr)	-2.0000	76.000	76.000
Assembly_R Busy	1.6566	.07974	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.63346	.03204	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.6004	.02077	1.0000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1376	.01171	.00000	2.0000	.00000
Thickneser_R Busy	2.5117	.04247	1.0000	3.0000	3.0000
Final Sanding_R Busy	3.8338	.14142	1.0000	5.0000	3.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	180	Infinite
Assembly_C	195	Infinite

Thickneser_C	250	Infinite
Radial Arm Saw_C	202	Infinite
Bor Horizontal_C	195	Infinite
Router_C	194	Infinite
Double End Tenoning_C	194	Infinite
Planer_C	257	Infinite
Kedatangan entitas_C	256	Infinite
Packing_C	180	Infinite
Final Sanding_C	186	Infinite
Single Rip Saw_C	256	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	76.000
Assembly_R.NumberSeized	195.00
Assembly_R.ScheduledUtilization	.41417
Thickneser_R.NumberSeized	251.00
Thickneser_R.ScheduledUtilization	.83726
Radial Arm Saw_R.NumberSeized	202.00
Radial Arm Saw_R.ScheduledUtilization	.63346
Bor Horizontal_R.NumberSeized	194.00
Bor Horizontal_R.ScheduledUtilization	.48325
Router_R.NumberSeized	194.00
Router_R.ScheduledUtilization	.14829
Double End Tenoning_R.NumberSeized	194.00
Double End Tenoning_R.ScheduledUtilization	.66477
Planer_R.NumberSeized	256.00
Planer_R.ScheduledUtilization	.37923
Packing_R.NumberSeized	180.00
Packing_R.ScheduledUtilization	.56223
Final Sanding_R.NumberSeized	188.00
Final Sanding_R.ScheduledUtilization	.76677
Single Rip Saw_R.NumberSeized	256.00
Single Rip Saw_R.ScheduledUtilization	.53348
System.NumberOut	255.00

Beginning replication 4 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 4 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.2908	.06313	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1312	.04212	.00000	2.0000	.00000
Bor Horizontal_R Busy	.92508	.04054	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.28278	.01370	.00000	1.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average WIP	36.243	(Corr)	.00000	75.000	74.000
Assembly_R Busy	1.5790	.05818	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.60998	.02669	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5701	.01580	1.0000	3.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1299	.01351	.00000	2.0000	2.0000
Thickneser_R Busy	2.5147	.04061	1.0000	3.0000	1.0000

Final Sanding_R Busy	3.7582	.13141	2.0000	5.0000	4.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	181	Infinite
Assembly_C	186	Infinite
Thickneser_C	251	Infinite
Radial Arm Saw_C	196	Infinite
Bor Horizontal_C	186	Infinite
Router_C	186	Infinite
Double End Tenoning_C	187	Infinite
Planer_C	255	Infinite
Kedatangan entitas_C	255	Infinite
Packing_C	181	Infinite
Final Sanding_C	183	Infinite
Single Rip Saw_C	256	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	74.000
Assembly_R.NumberSeized	186.00
Assembly_R.ScheduledUtilization	.39477
Thickneser_R.NumberSeized	249.00
Thickneser_R.ScheduledUtilization	.83824
Radial Arm Saw_R.NumberSeized	196.00
Radial Arm Saw_R.ScheduledUtilization	.60998
Bor Horizontal_R.NumberSeized	186.00
Bor Horizontal_R.ScheduledUtilization	.46254
Router_R.NumberSeized	187.00
Router_R.ScheduledUtilization	.14139
Double End Tenoning_R.NumberSeized	187.00
Double End Tenoning_R.ScheduledUtilization	.64545
Planer_R.NumberSeized	256.00
Planer_R.ScheduledUtilization	.37666
Packing_R.NumberSeized	180.00
Packing_R.ScheduledUtilization	.56564
Final Sanding_R.NumberSeized	183.00
Final Sanding_R.ScheduledUtilization	.75165
Single Rip Saw_R.NumberSeized	256.00
Single Rip Saw_R.ScheduledUtilization	.52337
System.NumberOut	257.00

Beginning replication 5 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 5 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.2804	.04507	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000

Packing_R Busy	1.1381	.04748	.00000	2.0000	1.0000
Bor Horizontal_R Busy	.92652	.03691	.00000	2.0000	.00000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.28326	.01226	.00000	1.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average WIP	34.350	(Corr)	-1.0000	70.000	70.000
Assembly_R Busy	1.5783	.06199	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.61040	.02668	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5680	.01874	1.0000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1224	.01306	.00000	2.0000	1.0000
Thickneser_R Busy	2.4630	.05072	1.0000	3.0000	2.0000
Final Sanding_R Busy	3.7633	.09984	2.0000	5.0000	3.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	183	Infinite
Assembly_C	187	Infinite
Thickneser_C	245	Infinite
Radial Arm Saw_C	194	Infinite
Bor Horizontal_C	186	Infinite
Router_C	186	Infinite
Double End Tenoning_C	186	Infinite
Planer_C	253	Infinite
Kedatangan entitas_C	253	Infinite
Packing_C	183	Infinite
Final Sanding_C	184	Infinite
Single Rip Saw_C	253	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	70.000
Assembly_R.NumberSeized	186.00
Assembly_R.ScheduledUtilization	.39459
Thickneser_R.NumberSeized	244.00
Thickneser_R.ScheduledUtilization	.82102
Radial Arm Saw_R.NumberSeized	194.00
Radial Arm Saw_R.ScheduledUtilization	.61040
Bor Horizontal_R.NumberSeized	186.00
Bor Horizontal_R.ScheduledUtilization	.46326
Router_R.NumberSeized	186.00
Router_R.ScheduledUtilization	.14163
Double End Tenoning_R.NumberSeized	187.00
Double End Tenoning_R.ScheduledUtilization	.64024
Planer_R.NumberSeized	253.00
Planer_R.ScheduledUtilization	.37414
Packing_R.NumberSeized	183.00
Packing_R.ScheduledUtilization	.56905
Final Sanding_R.NumberSeized	183.00
Final Sanding_R.ScheduledUtilization	.75268
Single Rip Saw_R.NumberSeized	253.00
Single Rip Saw_R.ScheduledUtilization	.52269
System.NumberOut	255.00

Beginning replication 6 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 6 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi
Replication ended at time : 31300.0 Seconds

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
 Statistics accumulated for time: 28800.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.3389	.05449	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1456	.04859	.00000	2.0000	1.0000
Bor Horizontal_R Busy	.95946	.05040	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.29489	.01408	.00000	1.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	36.101	(Corr)	.00000	72.000	72.000
Assembly_R Busy	1.6538	.07542	.00000	3.0000	1.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.64315	.02567	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5858	.01558	1.0000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1350	.00902	.00000	2.0000	1.0000
Thickneser_R Busy	2.5154	.05108	1.0000	3.0000	3.0000
Final Sanding_R Available	3.8408	.11426	2.0000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	185	Infinite
Assembly_C	195	Infinite
Thickneser_C	249	Infinite
Radial Arm Saw_C	205	Infinite
Bor Horizontal_C	195	Infinite
Router_C	195	Infinite
Double End Tenoning_C	196	Infinite
Planer_C	256	Infinite
Kedatangan entitas_C	257	Infinite
Packing_C	185	Infinite
Final Sanding_C	187	Infinite
Single Rip Saw_C	256	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	72.000
Assembly_R.NumberSeized	195.00
Assembly_R.ScheduledUtilization	.41345
Thickneser_R.NumberSeized	249.00
Thickneser_R.ScheduledUtilization	.83849
Radial Arm Saw_R.NumberSeized	205.00
Radial Arm Saw_R.ScheduledUtilization	.64315
Bor Horizontal_R.NumberSeized	195.00
Bor Horizontal_R.ScheduledUtilization	.47973
Router_R.NumberSeized	196.00
Router_R.ScheduledUtilization	.14745
Double End Tenoning_R.NumberSeized	195.00
Double End Tenoning_R.ScheduledUtilization	.66947
Planer_R.NumberSeized	257.00
Planer_R.ScheduledUtilization	.37834
Packing_R.NumberSeized	185.00
Packing_R.ScheduledUtilization	.57284
Final Sanding_R.NumberSeized	188.00
Final Sanding_R.ScheduledUtilization	.76817
Single Rip Saw_R.NumberSeized	257.00
Single Rip Saw_R.ScheduledUtilization	.52861

System.NumberOut

255.00

Beginning replication 7 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 7 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 20000.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.3276	.06468	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1651	.04511	.00000	2.0000	1.0000
Bor Horizontal_R Busy	.96779	.04721	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.29500	.01655	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	34.956	(Corr)	.00000	70.000	70.000
Assembly_R Busy	1.6215	.06419	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.63671	.02810	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5804	.02333	1.0000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1288	.01165	.00000	2.0000	1.0000
Thickneser_R Busy	2.5339	.03469	1.0000	3.0000	3.0000
Final Sanding_R Busy	3.8280	.13412	2.0000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	186	Infinite
Assembly_C	191	Infinite
Thickneser_C	252	Infinite
Radial Arm Saw_C	204	Infinite
Bor Horizontal_C	192	Infinite
Router_C	192	Infinite
Double End Tenoning_C	193	Infinite
Planer_C	255	Infinite
Kedatangan entitas_C	256	Infinite
Packing_C	186	Infinite
Final Sanding_C	186	Infinite
Single Rip Saw_C	255	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	70.000
Assembly_R.NumberSeized	192.00
Assembly_R.ScheduledUtilization	.40537
Thickneser_R.NumberSeized	252.00
Thickneser_R.ScheduledUtilization	.84463
Radial Arm Saw_R.NumberSeized	204.00
Radial Arm Saw_R.ScheduledUtilization	.63671
Bor Horizontal_R.NumberSeized	192.00


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Bor Horizontal_R.ScheduledUtilization    .48390
Router_R.NumberSeized                    193.00
Router_R.ScheduledUtilization            .14750
Double End Tenoning_R.NumberSeized       193.00
Double End Tenoning_R.ScheduledUtilization .66381
Planer_R.NumberSeized                    255.00
Planer_R.ScheduledUtilization            .37628
Packing_R.NumberSeized                    186.00
Packing_R.ScheduledUtilization           .58257
Final Sanding_R.NumberSeized             187.00
Final Sanding_R.ScheduledUtilization     .76560
Single Rip Saw_R.NumberSeized            256.00
Single Rip Saw_R.ScheduledUtilization    .52681
System.NumberOut                          252.00

```

Beginning replication 8 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 8 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.3463	.05859	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1289	.04208	.00000	2.0000	1.0000
Bor Horizontal_R Busy	.97593	.04516	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.30010	.01685	.00000	1.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	37.767	(Corr)	.00000	74.000	74.000
Assembly_R Busy	1.6564	.08048	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.63481	.02318	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5624	.01590	1.0000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1209	.01253	.00000	2.0000	1.0000
Thickneser_R Busy	2.5269	.03743	1.0000	3.0000	3.0000
Final Sanding_R Busy	3.8276	.11480	2.0000	5.0000	3.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	181	Infinite
Assembly_C	194	Infinite
Thickneser_C	251	Infinite
Radial Arm Saw_C	204	Infinite
Bor Horizontal_C	195	Infinite
Router_C	195	Infinite
Double End Tenoning_C	195	Infinite
Planer_C	254	Infinite
Kedatangan entitas_C	255	Infinite
Packing_C	181	Infinite
Final Sanding_C	187	Infinite
Single Rip Saw_C	254	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	74.000
Assembly_R.NumberSeized	195.00
Assembly_R.ScheduledUtilization	.41410
Thickneser_R.NumberSeized	251.00
Thickneser_R.ScheduledUtilization	.84231
Radial Arm Saw_R.NumberSeized	203.00
Radial Arm Saw_R.ScheduledUtilization	.63481
Bor Horizontal_R.NumberSeized	195.00
Bor Horizontal_R.ScheduledUtilization	.48797
Router_R.NumberSeized	195.00
Router_R.ScheduledUtilization	.15005
Double End Tenoning_R.NumberSeized	195.00
Double End Tenoning_R.ScheduledUtilization	.67315
Planer_R.NumberSeized	254.00
Planer_R.ScheduledUtilization	.37364
Packing_R.NumberSeized	181.00
Packing_R.ScheduledUtilization	.56448
Final Sanding_R.NumberSeized	186.00
Final Sanding_R.ScheduledUtilization	.76553
Single Rip Saw_R.NumberSeized	255.00
Single Rip Saw_R.ScheduledUtilization	.52081
System.NumberOut	254.00

Beginning replication 9 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 9 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.3534	.05981	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1160	.03953	.00000	2.0000	2.0000
Bor Horizontal_R Busy	.98074	.04095	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.30467	.01372	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	37.604	(Corr)	.00000	76.000	76.000
Assembly_R Busy	1.6652	.07380	.00000	3.0000	3.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.64908	.02881	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5935	.01571	1.0000	3.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1347	.01284	.00000	2.0000	1.0000
Thickneser_R Busy	2.4980	.05013	1.0000	3.0000	2.0000
Final Sanding_R Busy	3.8333	.12685	1.0000	5.0000	3.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	180	Infinite
Assembly_C	195	Infinite

Thickneser_C	249	Infinite
Radial Arm Saw_C	207	Infinite
Bor Horizontal_C	197	Infinite
Router_C	197	Infinite
Double End Tenoning_C	197	Infinite
Planer_C	257	Infinite
Kedatangan entitas_C	256	Infinite
Packing_C	180	Infinite
Final Sanding_C	187	Infinite
Single Rip Saw_C	257	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	76.000
Assembly_R.NumberSeized	197.00
Assembly_R.ScheduledUtilization	.41630
Thickneser_R.NumberSeized	248.00
Thickneser_R.ScheduledUtilization	.83270
Radial Arm Saw_R.NumberSeized	206.00
Radial Arm Saw_R.ScheduledUtilization	.64908
Bor Horizontal_R.NumberSeized	196.00
Bor Horizontal_R.ScheduledUtilization	.49037
Router_R.NumberSeized	197.00
Router_R.ScheduledUtilization	.15234
Double End Tenoning_R.NumberSeized	198.00
Double End Tenoning_R.ScheduledUtilization	.67670
Planer_R.NumberSeized	257.00
Planer_R.ScheduledUtilization	.37825
Packing_R.NumberSeized	181.00
Packing_R.ScheduledUtilization	.55800
Final Sanding_R.NumberSeized	186.00
Final Sanding_R.ScheduledUtilization	.76667
Single Rip Saw_R.NumberSeized	256.00
Single Rip Saw_R.ScheduledUtilization	.53117
System.NumberOut	257.00

Beginning replication 10 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 10 of 10

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.3021	.05750	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.1172	.05295	.00000	2.0000	1.0000
Bor Horizontal_R Busy	.91801	.04073	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.28877	.01305	.00000	1.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	41.608	(Corr)	.00000	77.000	76.000
Assembly_R Busy	1.5816	.06976	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.63842	.03563	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5759	.02417	1.0000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1343	.01097	.00000	2.0000	1.0000
Thickneser_R Busy	2.4868	.04764	1.0000	3.0000	3.0000

Final Sanding_R Busy	3.7447	.11593	2.0000	5.0000	4.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	180	Infinite
Assembly_C	186	Infinite
Thickneser_C	248	Infinite
Radial Arm Saw_C	203	Infinite
Bor Horizontal_C	187	Infinite
Router_C	187	Infinite
Double End Tenoning_C	187	Infinite
Planer_C	256	Infinite
Kedatangan entitas_C	256	Infinite
Packing_C	180	Infinite
Final Sanding_C	182	Infinite
Single Rip Saw_C	256	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	76.000
Assembly_R.NumberSeized	187.00
Assembly_R.ScheduledUtilization	.39542
Thickneser_R.NumberSeized	248.00
Thickneser_R.ScheduledUtilization	.82894
Radial Arm Saw_R.NumberSeized	204.00
Radial Arm Saw_R.ScheduledUtilization	.63842
Bor Horizontal_R.NumberSeized	187.00
Bor Horizontal_R.ScheduledUtilization	.45900
Router_R.NumberSeized	187.00
Router_R.ScheduledUtilization	.14438
Double End Tenoning_R.NumberSeized	187.00
Double End Tenoning_R.ScheduledUtilization	.65108
Planer_R.NumberSeized	256.00
Planer_R.ScheduledUtilization	.37811
Packing_R.NumberSeized	180.00
Packing_R.ScheduledUtilization	.55863
Final Sanding_R.NumberSeized	183.00
Final Sanding_R.ScheduledUtilization	.74894
Single Rip Saw_R.NumberSeized	256.00
Single Rip Saw_R.ScheduledUtilization	.52531
System.NumberOut	253.00

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Output Summary for 10 Replications

Project: Model Sistem Semula
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

OUTPUTS

Identifier	Average	Half-width	Minimum	Maximum	# Replications
Entitas di dalam sistem	74.100	1.8607	70.000	77.000	10
Assembly_R.NumberSeized	190.70	3.2874	185.00	197.00	10
Assembly_R.ScheduledUtilization	.40445	.00668	.39459	.41630	10
Thickneser_R.NumberSeized	248.90	1.5977	244.00	252.00	10
Thickneser_R.ScheduledUtilization	.83522	.00486	.82102	.84463	10
Radial Arm Saw_R.NumberSeized	200.00	3.8149	193.00	206.00	10
Radial Arm Saw_R.ScheduledUtilization	.62731	.01151	.60672	.64908	10
Bor Horizontal_R.NumberSeized	190.40	3.1488	185.00	196.00	10

Bor Horizontal_R.ScheduledUtilization	.47379	.00889	.45900	.49037	10
Router_R.NumberSeized	190.70	3.4063	184.00	197.00	10
Router_R.ScheduledUtilization	.14554	.00297	.14029	.15234	10
Double End Tenoning_R.NumberSeized	190.90	3.2596	185.00	198.00	10
Double End Tenoning_R.ScheduledUtilization	.65680	.01038	.63605	.67670	10
Planer_R.NumberSeized	255.40	.90480	253.00	257.00	10
Planer_R.ScheduledUtilization	.37662	.00136	.37364	.37923	10
Packing_R.NumberSeized	181.10	2.0358	177.00	186.00	10
Packing_R.ScheduledUtilization	.56357	.00712	.54651	.58257	10
Final Sanding_R.NumberSeized	184.70	1.8484	181.00	188.00	10
Final Sanding_R.ScheduledUtilization	.75769	.00690	.74445	.76817	10
Single Rip Saw_R.NumberSeized	255.30	.89533	253.00	257.00	10
Single Rip Saw_R.ScheduledUtilization	.52586	.00294	.52081	.53348	10
System.NumberOut	254.80	1.1081	252.00	257.00	10

Simulation run time: 0.07 minutes.
Simulation run complete.



Lampiran 4 : Model dengan ukuran buffer optimal

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 1 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.7085	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4224	(Corr)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.2093	(Corr)	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.37671	.02399	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	21.553	(Corr)	.00000	28.000	27.000
Assembly_R Busy	2.0605	(Corr)	.00000	4.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78071	(Corr)	.00000	1.0000	.00000
Single Rip Saw_R Busy	1.5655	.01871	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1121	(Corr)	.00000	2.0000	1.0000
Thickneser_R Busy	2.5106	(Corr)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.7307	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	227	Infinite
Assembly_C	242	Infinite
Thickneser_C	248	Infinite
Radial Arm Saw_C	248	Infinite
Bor Horizontal_C	244	Infinite
Router_C	245	Infinite
Double End Tenoning_C	246	Infinite
Planer_C	251	Infinite
Kedatangan entitas_C	254	Infinite
Packing_C	227	Infinite
Final Sanding_C	229	Infinite
Single Rip Saw_C	252	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	27.000
Assembly_R.NumberSeized	244.00
Assembly_R.ScheduledUtilization	.51513
Thickneser_R.NumberSeized	251.00
Thickneser_R.ScheduledUtilization	.83687
Radial Arm Saw_R.NumberSeized	248.00
Radial Arm Saw_R.ScheduledUtilization	.78071
Bor Horizontal_R.NumberSeized	245.00
Bor Horizontal_R.ScheduledUtilization	.60466
Router_R.NumberSeized	246.00

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Router_R.ScheduledUtilization      .18835
Double_End Tenoning_R.NumberSeized 248.00
Double_End Tenoning_R.ScheduledUtilization .85426
Planer_R.NumberSeized              252.00
Planer_R.ScheduledUtilization      .37070
Packing_R.NumberSeized             229.00
Packing_R.ScheduledUtilization     .71123
Final Sanding_R.NumberSeized       234.00
Final Sanding_R.ScheduledUtilization .94614
Single Rip Saw_R.NumberSeized      254.00
Single Rip Saw_R.ScheduledUtilization .52186
System.NumberOut                   233.00

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Beginning replication 2 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 2 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double_End Tenoning_R Busy	1.7024	(Corr)	.00000	2.0000	2.0000
Double_End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4194	(Corr)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.2316	(Corr)	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.37964	(Corr)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	22.592	(Corr)	.00000	29.0000	29.0000
Assembly_R Busy	2.0720	(Corr)	.00000	3.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78059	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5625	.02164	.00000	2.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1168	.01847	.00000	2.0000	2.0000
Thickneser_R Busy	2.5243	(Corr)	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7312	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	226	Infinite
Assembly_C	243	Infinite
Thickneser_C	250	Infinite
Radial Arm Saw_C	249	Infinite
Bor Horizontal_C	245	Infinite
Router_C	246	Infinite
Double_End Tenoning_C	247	Infinite
Planer_C	252	Infinite
Kedatangan entitas_C	255	Infinite
Packing_C	226	Infinite
Final Sanding_C	228	Infinite
Single Rip Saw_C	254	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	29.000
Assembly_R.NumberSeized	245.00
Assembly_R.ScheduledUtilization	.51800
Thickneser_R.NumberSeized	252.00
Thickneser_R.ScheduledUtilization	.84146
Radial Arm Saw_R.NumberSeized	250.00
Radial Arm Saw_R.ScheduledUtilization	.78059
Bor Horizontal_R.NumberSeized	246.00
Bor Horizontal_R.ScheduledUtilization	.61580
Router_R.NumberSeized	247.00
Router_R.ScheduledUtilization	.18982
Double End Tenoning_R.NumberSeized	249.00
Double End Tenoning_R.ScheduledUtilization	.85125
Planer_R.NumberSeized	254.00
Planer_R.ScheduledUtilization	.37229
Packing_R.NumberSeized	228.00
Packing_R.ScheduledUtilization	.70970
Final Sanding_R.NumberSeized	233.00
Final Sanding_R.ScheduledUtilization	.94624
Single Rip Saw_R.NumberSeized	255.00
Single Rip Saw_R.ScheduledUtilization	.52084
System.NumberOut	234.00

Beginning replication 3 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 3 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.7104	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4207	(Corr)	.00000	2.0000	1.0000
Bor Horizontal_R Busy	1.2190	(Corr)	.00000	2.0000	2.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.37953	.02591	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	22.597	(Corr)	.00000	29.000	28.000
Assembly_R Busy	2.0716	(Corr)	.00000	4.0000	1.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.79165	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5721	.01707	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1169	.02056	.00000	2.0000	1.0000
Thickneser_R Busy	2.5241	.07864	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7331	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	227	Infinite
Assembly_C	244	Infinite

Thickneser_C	250	Infinite
Radial Arm Saw_C	249	Infinite
Bor Horizontal_C	245	Infinite
Router_C	247	Infinite
Double End Tenoning_C	247	Infinite
Planer_C	252	Infinite
Kedatangan entitas_C	255	Infinite
Packing_C	227	Infinite
Final Sanding_C	228	Infinite
Single Rip Saw_C	253	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	28.000
Assembly_R.NumberSeized	245.00
Assembly_R.ScheduledUtilization	.51790
Thickneser_R.NumberSeized	252.00
Thickneser_R.ScheduledUtilization	.84139
Radial Arm Saw_R.NumberSeized	250.00
Radial Arm Saw_R.ScheduledUtilization	.79165
Bor Horizontal_R.NumberSeized	247.00
Bor Horizontal_R.ScheduledUtilization	.60952
Router_R.NumberSeized	247.00
Router_R.ScheduledUtilization	.18976
Double End Tenoning_R.NumberSeized	249.00
Double End Tenoning_R.ScheduledUtilization	.85523
Planer_R.NumberSeized	253.00
Planer_R.ScheduledUtilization	.37231
Packing_R.NumberSeized	228.00
Packing_R.ScheduledUtilization	.71038
Final Sanding_R.NumberSeized	233.00
Final Sanding_R.ScheduledUtilization	.94664
Single Rip Saw_R.NumberSeized	255.00
Single Rip Saw_R.ScheduledUtilization	.52404
System.NumberOut	235.00

Beginning replication 4 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 4 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.7177	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4268	(Corr)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.2162	(Corr)	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.38222	.02755	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	23.122	(Corr)	.00000	31.000	30.000
Assembly_R Busy	2.0819	(Corr)	.00000	4.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78580	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5807	.01530	.00000	3.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1227	.02383	.00000	2.0000	1.0000
Thickneser_R Busy	2.5476	(Corr)	.00000	3.0000	2.0000

Final Sanding_R Busy	4.7275	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	227	Infinite
Assembly_C	245	Infinite
Thickneser_C	252	Infinite
Radial Arm Saw_C	251	Infinite
Bor Horizontal_C	247	Infinite
Router_C	248	Infinite
Double End Tenoning_C	249	Infinite
Planer_C	254	Infinite
Kedatangan entitas_C	257	Infinite
Packing_C	227	Infinite
Final Sanding_C	229	Infinite
Single Rip Saw_C	255	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	30.000
Assembly_R.NumberSeized	247.00
Assembly_R.ScheduledUtilization	.52048
Thickneser_R.NumberSeized	254.00
Thickneser_R.ScheduledUtilization	.84923
Radial Arm Saw_R.NumberSeized	252.00
Radial Arm Saw_R.ScheduledUtilization	.78580
Bor Horizontal_R.NumberSeized	248.00
Bor Horizontal_R.ScheduledUtilization	.60812
Router_R.NumberSeized	249.00
Router_R.ScheduledUtilization	.19111
Double End Tenoning_R.NumberSeized	251.00
Double End Tenoning_R.ScheduledUtilization	.85886
Planer_R.NumberSeized	255.00
Planer_R.ScheduledUtilization	.37423
Packing_R.NumberSeized	229.00
Packing_R.ScheduledUtilization	.71343
Final Sanding_R.NumberSeized	234.00
Final Sanding_R.ScheduledUtilization	.94550
Single Rip Saw_R.NumberSeized	257.00
Single Rip Saw_R.ScheduledUtilization	.52692
System.NumberOut	237.00

Beginning replication 5 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 5 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6991	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000

Packing_R Busy	1.4220	(Corr)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.2442	.09426	.00000	2.0000	2.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.38121	(Corr)	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	23.281	(Corr)	.00000	31.000	30.000
Assembly_R Busy	2.0845	(Corr)	.00000	4.0000	1.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78831	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5741	.02610	.00000	2.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1264	.01844	.00000	2.0000	2.0000
Thickneser_R Busy	2.5467	(Corr)	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7287	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	226	Infinite
Assembly_C	245	Infinite
Thickneser_C	251	Infinite
Radial Arm Saw_C	250	Infinite
Bor Horizontal_C	246	Infinite
Router_C	248	Infinite
Double End Tenoning_C	248	Infinite
Planer_C	253	Infinite
Kedatangan entitas_C	256	Infinite
Packing_C	226	Infinite
Final Sanding_C	228	Infinite
Single Rip Saw_C	255	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	30.000
Assembly_R.NumberSeized	246.00
Assembly_R.ScheduledUtilization	.52115
Thickneser_R.NumberSeized	253.00
Thickneser_R.ScheduledUtilization	.84893
Radial Arm Saw_R.NumberSeized	251.00
Radial Arm Saw_R.ScheduledUtilization	.78831
Bor Horizontal_R.NumberSeized	248.00
Bor Horizontal_R.ScheduledUtilization	.62210
Router_R.NumberSeized	248.00
Router_R.ScheduledUtilization	.19061
Double End Tenoning_R.NumberSeized	250.00
Double End Tenoning_R.ScheduledUtilization	.84955
Planer_R.NumberSeized	255.00
Planer_R.ScheduledUtilization	.37548
Packing_R.NumberSeized	228.00
Packing_R.ScheduledUtilization	.71102
Final Sanding_R.NumberSeized	233.00
Final Sanding_R.ScheduledUtilization	.94575
Single Rip Saw_R.NumberSeized	256.00
Single Rip Saw_R.ScheduledUtilization	.52472
System.NumberOut	236.00

Beginning replication 6 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 6 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
 Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
 Statistics accumulated for time: 28800.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.7151	(Corr)	.00000	2.0000	1.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4150	(Corr)	.00000	2.0000	1.0000
Bor Horizontal_R Busy	1.2204	(Corr)	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.38374	(Corr)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	23.166	(Corr)	.00000	32.000	31.000
Assembly_R Busy	2.0904	(Corr)	.00000	4.0000	3.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78889	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5913	.02129	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1278	.01932	.00000	2.0000	1.0000
Thickneser_R Busy	2.5524	(Corr)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.7244	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	227	Infinite
Assembly_C	245	Infinite
Thickneser_C	252	Infinite
Radial Arm Saw_C	251	Infinite
Bor Horizontal_C	248	Infinite
Router_C	249	Infinite
Double End Tenoning_C	250	Infinite
Planer_C	255	Infinite
Kedatangan entitas_C	258	Infinite
Packing_C	227	Infinite
Final Sanding_C	228	Infinite
Single Rip Saw_C	256	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	31.000
Assembly_R.NumberSeized	248.00
Assembly_R.ScheduledUtilization	.52261
Thickneser_R.NumberSeized	255.00
Thickneser_R.ScheduledUtilization	.85081
Radial Arm Saw_R.NumberSeized	252.00
Radial Arm Saw_R.ScheduledUtilization	.78889
Bor Horizontal_R.NumberSeized	249.00
Bor Horizontal_R.ScheduledUtilization	.61021
Router_R.NumberSeized	250.00
Router_R.ScheduledUtilization	.19187
Double End Tenoning_R.NumberSeized	251.00
Double End Tenoning_R.ScheduledUtilization	.85756
Planer_R.NumberSeized	256.00
Planer_R.ScheduledUtilization	.37593
Packing_R.NumberSeized	228.00
Packing_R.ScheduledUtilization	.70753
Final Sanding_R.NumberSeized	233.00
Final Sanding_R.ScheduledUtilization	.94490
Single Rip Saw_R.NumberSeized	258.00

Single Rip Saw R.ScheduledUtilization .53044
 System.NumberOut 237.00

Beginning replication 7 of 10

ARENA Simulation Results
 Bayu Sulistiyadi - License: STUDENT

Summary for Replication 7 of 10

Project: Buffer Optimal
 Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
 Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
 Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
 Statistics accumulated for time: 28800.0 Seconds
 Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.7220	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4193	(Corr)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.2236	(Corr)	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.38176	(Corr)	.00000	2.0000	1.0000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	23.120	(Corr)	.00000	31.000	30.000
Assembly_R Busy	2.0806	(Corr)	.00000	4.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.79001	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5928	.01926	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1191	.02262	.00000	2.0000	1.0000
Thickneser_R Busy	2.5406	(Corr)	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7243	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	226	Infinite
Assembly_C	244	Infinite
Thickneser_C	251	Infinite
Radial Arm Saw_C	250	Infinite
Bor Horizontal_C	246	Infinite
Router_C	247	Infinite
Double End Tenoning_C	248	Infinite
Planer_C	253	Infinite
Kedatangan entitas_C	256	Infinite
Packing_C	226	Infinite
Final Sanding_C	229	Infinite
Single Rip Saw_C	254	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	30.000
Assembly_R.NumberSeized	246.00
Assembly_R.ScheduledUtilization	.52017
Thickneser_R.NumberSeized	253.00
Thickneser_R.ScheduledUtilization	.84689
Radial Arm Saw_R.NumberSeized	251.00
Radial Arm Saw_R.ScheduledUtilization	.79001

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Bor Horizontal_R.NumberSeized          247.00
Bor Horizontal_R.ScheduledUtilization  .61184
Router_R.NumberSeized                   248.00
Router_R.ScheduledUtilization           .19088
Double End Tenoning_R.NumberSeized     250.00
Double End Tenoning_R.ScheduledUtilization .86102
Planer_R.NumberSeized                   254.00
Planer_R.ScheduledUtilization           .37304
Packing_R.NumberSeized                  228.00
Packing_R.ScheduledUtilization          .70965
Final Sanding_R.NumberSeized            234.00
Final Sanding_R.ScheduledUtilization    .94487
Single Rip Saw_R.NumberSeized           256.00
Single Rip Saw_R.ScheduledUtilization    .53094
System.NumberOut                         235.00

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Beginning replication 8 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 8 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.6904	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4146	(Corr)	.00000	2.0000	1.0000
Bor Horizontal_R Busy	1.2348	(Corr)	.00000	2.0000	2.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.37912	(Corr)	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	22.160	(Corr)	.00000	30.000	28.000
Assembly_R Busy	2.0686	(Corr)	.00000	4.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78723	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5815	.01982	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1215	.02155	.00000	2.0000	1.0000
Thickneser_R Busy	2.5172	(Corr)	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7279	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	227	Infinite
Assembly_C	243	Infinite
Thickneser_C	250	Infinite
Radial Arm Saw_C	249	Infinite
Bor Horizontal_C	245	Infinite
Router_C	247	Infinite
Double End Tenoning_C	247	Infinite
Planer_C	252	Infinite
Kedatangan entitas_C	255	Infinite
Packing_C	227	Infinite
Final Sanding_C	228	Infinite
Single Rip Saw_C	253	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	28.000
Assembly_R.NumberSeized	245.00
Assembly_R.ScheduledUtilization	.51716
Thickneser_R.NumberSeized	252.00
Thickneser_R.ScheduledUtilization	.83908
Radial Arm Saw_R.NumberSeized	250.00
Radial Arm Saw_R.ScheduledUtilization	.78723
Bor Horisontal_R.NumberSeized	247.00
Bor Horisontal_R.ScheduledUtilization	.61741
Router_R.NumberSeized	247.00
Router_R.ScheduledUtilization	.18956
Double End Tenoning_R.NumberSeized	249.00
Double End Tenoning_R.ScheduledUtilization	.84523
Planer_R.NumberSeized	253.00
Planer_R.ScheduledUtilization	.37386
Packing_R.NumberSeized	228.00
Packing_R.ScheduledUtilization	.70733
Final Sanding_R.NumberSeized	233.00
Final Sanding_R.ScheduledUtilization	.94560
Single Rip Saw_R.NumberSeized	255.00
Single Rip Saw_R.ScheduledUtilization	.52720
System.NumberOut	235.00

Beginning replication 9 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 9 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.7099	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4073	(Corr)	.00000	2.0000	2.0000
Bor Horisontal_R Busy	1.2188	(Corr)	.00000	2.0000	2.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.38374	(Corr)	.00000	1.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	23.282	(Corr)	.00000	30.000	30.000
Assembly_R Busy	2.0778	(Corr)	.00000	4.0000	1.0000
Bor Horisontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.79480	(Corr)	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5869	.01741	.00000	2.0000	1.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1216	.02084	.00000	2.0000	1.0000
Thickneser_R Busy	2.5424	(Corr)	.00000	3.0000	3.0000
Final Sanding_R Busy	4.7297	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
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Produk jadi_C	226	Infinite
Assembly_C	245	Infinite
Thickneser_C	251	Infinite
Radial Arm Saw_C	250	Infinite
Bor Horizontal_C	246	Infinite
Router_C	248	Infinite
Double End Tenoning_C	248	Infinite
Planer_C	254	Infinite
Kedatangan entitas_C	256	Infinite
Packing_C	226	Infinite
Final Sanding_C	228	Infinite
Single Rip Saw_C	255	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	30.000
Assembly_R.NumberSeized	246.00
Assembly_R.ScheduledUtilization	.51946
Thickneser_R.NumberSeized	254.00
Thickneser_R.ScheduledUtilization	.84747
Radial Arm Saw_R.NumberSeized	251.00
Radial Arm Saw_R.ScheduledUtilization	.79480
Bor Horizontal_R.NumberSeized	248.00
Bor Horizontal_R.ScheduledUtilization	.60942
Router_R.NumberSeized	248.00
Router_R.ScheduledUtilization	.19187
Double End Tenoning_R.NumberSeized	250.00
Double End Tenoning_R.ScheduledUtilization	.85497
Planer_R.NumberSeized	255.00
Planer_R.ScheduledUtilization	.37388
Packing_R.NumberSeized	228.00
Packing_R.ScheduledUtilization	.70367
Final Sanding_R.NumberSeized	233.00
Final Sanding_R.ScheduledUtilization	.94594
Single Rip Saw_R.NumberSeized	256.00
Single Rip Saw_R.ScheduledUtilization	.52899
System.NumberOut	235.00

Beginning replication 10 of 10

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Summary for Replication 10 of 10

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

Replication ended at time : 31300.0 Seconds
Statistics were cleared at time: 2500.0 Seconds (Tuesday, January 23, 2007, 02:05:00)
Statistics accumulated for time: 28800.0 Seconds
Base Time Units: Seconds

DISCRETE-CHANGE VARIABLES

Identifier	Average	Half Width	Minimum	Maximum	Final Value
Double End Tenoning_R Busy	1.7012	(Corr)	.00000	2.0000	2.0000
Double End Tenoning_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Packing_R Busy	1.4189	(Corr)	.00000	2.0000	2.0000
Bor Horizontal_R Busy	1.2087	(Corr)	.00000	2.0000	1.0000
Final Sanding_R Available	5.0000	(Insuf)	5.0000	5.0000	5.0000
Router_R Busy	.37348	.02446	.00000	2.0000	.00000
Thickneser_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Average_WIP	21.974	(Corr)	.00000	30.000	28.000
Assembly_R Busy	2.0781	(Corr)	.00000	4.0000	2.0000
Bor Horizontal_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Busy	.78359	.03543	.00000	1.0000	1.0000
Single Rip Saw_R Busy	1.5719	.01952	.00000	2.0000	2.0000
Assembly_R Available	4.0000	(Insuf)	4.0000	4.0000	4.0000
Planer_R Busy	1.1165	.01575	.00000	2.0000	1.0000

Thickneser_R Busy	2.5202	.07677	.00000	3.0000	2.0000
Final Sanding_R Busy	4.7294	(Insuf)	.00000	5.0000	5.0000
Router_R Available	2.0000	(Insuf)	2.0000	2.0000	2.0000
Radial Arm Saw_R Available	1.0000	(Insuf)	1.0000	1.0000	1.0000
Single Rip Saw_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000
Planer_R Available	3.0000	(Insuf)	3.0000	3.0000	3.0000

COUNTERS

Identifier	Count	Limit
Produk jadi_C	226	Infinite
Assembly_C	243	Infinite
Thickneser_C	249	Infinite
Radial Arm Saw_C	248	Infinite
Bor Horizontal_C	245	Infinite
Router_C	246	Infinite
Double End Tenoning_C	246	Infinite
Planer_C	251	Infinite
Kedatangan entitas_C	254	Infinite
Packing_C	226	Infinite
Final Sanding_C	228	Infinite
Single Rip Saw_C	252	Infinite

OUTPUTS

Identifier	Value
Entitas di dalam sistem	28.000
Assembly_R.NumberSeized	245.00
Assembly_R.ScheduledUtilization	.51954
Thickneser_R.NumberSeized	251.00
Thickneser_R.ScheduledUtilization	.84007
Radial Arm Saw_R.NumberSeized	249.00
Radial Arm Saw_R.ScheduledUtilization	.78359
Bor Horizontal_R.NumberSeized	246.00
Bor Horizontal_R.ScheduledUtilization	.60436
Router_R.NumberSeized	246.00
Router_R.ScheduledUtilization	.18674
Double End Tenoning_R.NumberSeized	248.00
Double End Tenoning_R.ScheduledUtilization	.85063
Planer_R.NumberSeized	252.00
Planer_R.ScheduledUtilization	.37217
Packing_R.NumberSeized	228.00
Packing_R.ScheduledUtilization	.70946
Final Sanding_R.NumberSeized	233.00
Final Sanding_R.ScheduledUtilization	.94589
Single Rip Saw_R.NumberSeized	254.00
Single Rip Saw_R.ScheduledUtilization	.52397
System.NumberOut	233.00

ARENA Simulation Results
Bayu Sulistiyadi - License: STUDENT

Output Summary for 10 Replications

Project: Buffer Optimal
Analyst: Bayu Sulistiyadi

Run execution date : 1/24/2007
Model revision date:15/ 1/2007

OUTPUTS

Identifier	Average	Half-width	Minimum	Maximum	# Replications
Entitas di dalam sistem	29.100	.92037	27.000	31.000	10
Assembly_R.NumberSeized	245.70	.82940	244.00	248.00	10
Assembly_R.ScheduledUtilization	.51916	.00155	.51513	.52261	10
Thickneser_R.NumberSeized	252.70	.95672	251.00	255.00	10
Thickneser_R.ScheduledUtilization	.84422	.00355	.83687	.85081	10
Radial Arm Saw_R.NumberSeized	250.40	.90480	248.00	252.00	10
Radial Arm Saw_R.ScheduledUtilization	.78716	.00329	.78059	.79480	10

Bor Horizontal_R.NumberSeized	247.10	.85638	245.00	249.00	10
Bor Horizontal_R.ScheduledUtilization	.61135	.00402	.60436	.62210	10
Router_R.NumberSeized	247.60	.90480	246.00	250.00	10
Router_R.ScheduledUtilization	.19006	.00114	.18674	.19187	10
Double End Tenoning_R.NumberSeized	249.50	.77262	248.00	251.00	10
Double End Tenoning_R.ScheduledUtilization	.85386	.00340	.84523	.86102	10
Planer_R.NumberSeized	253.90	.98020	252.00	256.00	10
Planer_R.ScheduledUtilization	.37339	.00115	.37070	.37593	10
Packing_R.NumberSeized	228.20	.30160	228.00	229.00	10
Packing_R.ScheduledUtilization	.70934	.00191	.70367	.71343	10
Final Sanding_R.NumberSeized	233.30	.34553	233.00	234.00	10
Final Sanding_R.ScheduledUtilization	.94575	4.0130E-04	.94487	.94664	10
Single Rip Saw_R.NumberSeized	255.60	.90480	254.00	258.00	10
Single Rip Saw_R.ScheduledUtilization	.52599	.00249	.52084	.53094	10
System.NumberOut	235.00	1.0116	233.00	237.00	10

Simulation run time: 0.07 minutes.
Simulation run complete.

