

CHAPTER II RELATED FUNDAMENTAL THEORY

II.1 E-Banking

II.1.1 Definition

E-banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. E-banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet. Customers access e-banking services using an intelligent electronic device, such as a personal computer (PC), laptops, and personal digital assistant (PDA).

(www.ffiec.gov/ffiecinfobase/booklets/e_banking)

a. Core Banking System

II.1.2 Definition

Core Banking is the heart of the System which covers the typical functionality of any Financial Institution needed to support its primary operations. This functionality can be adopted according to the strategic needs and operational requirements of the financial institution.

(bMASTER.com, "Enterprise Banking System 2004")

A system and method that provided for integrating core banking business processes, which includes a business platform in which two or more selected banking processes common to the core banking business

are integrated. The business platform includes at least one database for sharing data between the core banking business processes and to provide the system with customer and business information. The business platform invokes a basic business rule library formed of two or more basic business operations to be implemented and a common function library, which includes at least one common function program which is called by the basic business operations. One or more application business subsystems each formed of a combination of the basic business operations are called by the business platform to perform selected operations as required by a particular banking transaction such as:

1. Daily banking activities: Deposit, Transfer Fund, Credit, etc
2. Real time financial processing from Front Office to Back Office.
3. On Line Transaction Processing (OLTP): insert, update, delete.

II.2 Delivery Channel

II.2.1 Definition

Delivery channel is a solution to customers' needs for a secure and reliable direct channel file transfer to the bank. This solution automates the entire file transfer process, which guarantees delivery in a secure environment that is based on industry-standard security algorithms and protocol.

Benefits:

1. Security
2. More Cost-Effective
3. More Flexibility with regards to Cut-off Times
4. Able to Accommodate Large File Sizes

This delivery channel services including:

1. Wholesale Banking: International and domestic fund transfers, account transfers, Trade finance, Cash management, Forex requests.
2. Retail Banking: Electronic bill present[™] ment and payments (EBPP), Credit card payments, Loans, Account services.
3. Trading: Online trading, Portfolio Management.
4. Information Services: Customer Statements, Alerts, News, Reports.

II.3 Database Management System (DBMS)**II.3.1 Definition**

Database Management System is a program that enables one or more computer users create and access data in a database. It is designed to manipulate the information in a database. It can add, delete, modify, sort, display and search for specific information, and perform many other tasks on a database.

II.3.2 DBMS Software

This final project uses Oracle 9i as the database server. Oracle 9i offers a comprehensive high-performance infrastructure for e-business. Oracle 9i has capabilities to develop, deploy, and manage the

internet application. The Oracle 9i provides an open, comprehensive, and integrated approach to information management.

(Oracle University, *Introduction to Oracle 9i Student Guide Volume 1*, 2001)

II.4 J2EE SDK (Java 2 Enterprise Edition)

II.4.1 Architecture

J2EE defines standard for developing and deploying enterprise and multi-tier applications in a distributed environment. The J2EE platform simplifies enterprise application by basing them on standardized, modular component by providing a complete set of services to those components and by handling many details of application behavior automatically. The J2EE architecture consists of:

1. J2EE server
2. EJB container
3. Web container

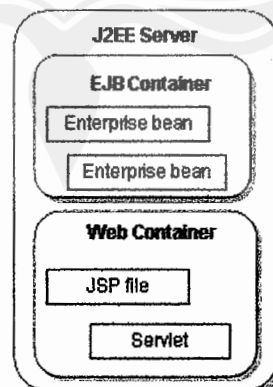


Figure 2.1 J2EE Architecture

II.5 JSP (Java Server Pages) and Servlets

II.5.1 Servlets

Servlets are java programs that can be deployed on a Java enabled web server to enhance and extend the functionality of the web server.

II.5.1.1 Servlets Characteristics

Servlets can be used to develop variety of a web based development. As servlets are written using Java, they can make the use of the extensive power of the Java API. The characteristics of servlets that have gained them a wide spread acceptances are as follows:

1. Servlets are efficient. The initialization code for servlet is executed only when servlet is executed for the first time.
2. Servlets are robust. As servlets are based on Java, they provide all the powerful feature of Java.
3. Servlets are portable. Servlets are also portable because they are developed in Java.
4. Servlets are persistent. Servlets help to increase the performance of the system by preventing frequent disk access.

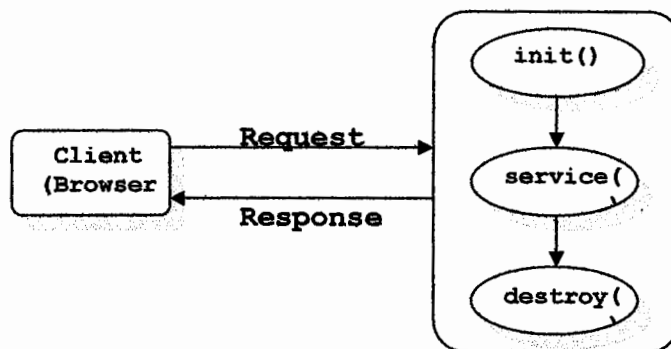


Figure 2.2 Servlets Life Cycle

Method Name	Functionality
<code>Servlet.init(ServletConfig)</code> throws <code>ServletException</code>	Contains all initialization code for the servlet and is invoked when servlet is first loaded.
<code>Servlet.service(ServletRequest, ServletResponse)</code> throws <code>ServletException</code>	Receives all requests from the client, identifies the type of the request, and dispatches them to the <code>doGet()</code> or <code>doPost()</code> method for processing.
<code>Servlet.destroy()</code>	Executes only once when the servlet is removed from the server. The clean up code for the servlet must be provided in this method.

Table 2.1 Servlet Methods

II.5.2 JSP (Java Server Pages)

II.5.2.1 Introduction

Java Server Pages (JSP) is an extension of servlet technology. JSP simplify the delivery of dynamic web content by reusing predefined component and by interacting with component using server-side scripting.

II.5.2.2 Overview

There are four key components to JSP:

1. Directives

Messages to the JSP container that enable programmer to specify page setting, to include content from other resources and to specify custom tag libraries for use in a JSP.

2. Actions

Encapsulates functionality in predefined tags that programmers can embed in JSP.

3. Scriptlets

Also named scripting elements which enable programmers to insert Java code.

4. Tag Libraries

Part of the tag extension mechanism that enable programmers to create custom tags.

II.6 Introducing NetBeans IDE

II.6.1 Definition

NetBeans IDE is a free-of-charge integrated development environment (IDE) primarily focused on making it easier to develop Java application. It provides support for all types of Java applications.

The IDE basic job is to make the edit-compile-debug cycle much smoother by integrating the tools for these activities. For example:

1. Identifies coding errors almost immediately and marks them in the source editor.
2. Helps making code faster with code completion, word matching, abbreviation, expansion, and fix import features.
3. Provides visual navigation aids such as the navigator window and code folding.
4. Manages package names and references to other classes.
5. Has many debugging feature that provide a comprehensive view of the way your code is working as it runs. Breakpoints can be set which keep code free from clutter.