CHAPTER 7. CONCLUSION AND PROSPECT

7.1. Summary

The implementation and testing phases of the project have provided several key insights. The project involved the design and implementation of a money management application specifically tailored for Indonesian Micro, Small, and Medium Enterprises (MSMEs). The application boasts a user-friendly interface and functionalities that are uniquely suited to the financial management needs of these enterprises. The development process of the money management application adhered to the Waterfall model, ensuring a systematic progression from system analysis to testing. Android Studio was chosen as the development platform due to the widespread use of Android in Indonesia's micro-enterprises. A key feature of the application is its scalability and high availability, with extended offline functionality. This design allows MSMEs to manage their finances effectively, even in areas with inconsistent internet connectivity.

7.2. Recommendation

From the implementation and testing results, the author realized that the application that was developed in this thesis still has some limitations. So in the future, this application still needs further development. the following recommendations could enhance the effectiveness and user experience of the proposed money management application:

1. Feature Expansion: To better serve the unique needs of MSMEs in Indonesia, the application could be enhanced with more sophisticated financial management tools and integration with local services.
2. Employee Version of the Application: Currently, the application is designed for micro-enterprise owners. However, developing an additional version for employees could extend its utility to small and medium enterprises. This supplementary application could mirror the functionality of a cashier and storage management application.
3. Cross-Platform Availability: While the application's current availability is commendable, it could be expanded to other operating systems. As MSMEs are increasingly utilizing iOS and desktop platforms for their business operations, developing versions of the application for these platforms could significantly increase its reach and usability.

4. User Interface Improvement: Although the application is designed with a user-friendly interface, conducting user testing could identify potential areas for enhancement. This could lead to an improved user experience.
5. Performance Optimization: Given the critical need for high availability and seamless functionality, performance optimization should be a top priority. This could involve improving load times, ensuring smooth animations, and reducing battery consumption.
6. Comprehensive Support System: To ensure users can effectively utilize all features of the application, a comprehensive support system could be implemented. This could include in-app tutorials and a detailed Frequently Asked Questions (FAQ) section.

REFERENCES

[1] A. Tirta and P. Sarli. "Indonesia's SMEs hold the key to growth. How can they scale up?" (accessed.

[2] I. R. Maksum, A. Y. S. Rahayu, and D. Kusumawardhani, "A Social Enterprise Approach to Empowering Micro, Small and Medium Enterprises (SMEs) in Indonesia," *Journal of Open Innovation: Technology, Market, and Complexity,* vol. 6, no. 3, 2020, doi: 10.3390/joitmc6030050.

[3] A. Munthe, M. Yarham, and R. Siregar, "Peranan Usaha Mikro Kecil Menengah Terhadap Perekonomian Indonesia," *Jurnal Ekonomi Bisnis, Manajemen Dan Akuntansi,* vol. 2, no. 3, pp. 593-614, 2023.

[4] N. Garg and S. Singh, "Financial literacy among youth," *International journaL of sociaL economics,* vol. 45, no. 1, pp. 173-186, 2018.

[5] T. Tambunan, "Recent evidence of the development of micro, small and medium enterprises in Indonesia," *Journal of Global Entrepreneurship Research,* vol. 9, no. 1, p. 18, 2019.

[6] M. Mahrizal, L. Judijanto, R. Indrapraja, and D. Pujianto, "The Influence of QRIS Digitalization, Technology and Digitalization Lifestyle, Digital Financial Literacy, and Financial Inclusion On Bank Customers Decision," *Jurnal Informasi dan Teknologi,* pp. 124-129, 2023.

[7] A. A. Adenowo and B. A. Adenowo, "Software engineering methodologies: a review of the waterfall model and object-oriented approach," *International Journal of Scientific & Engineering Research,* vol. 4, no. 7, pp. 427-434, 2013.

[8] J. J. X. Jeffrey P. Dew, "The Financial Management Behavior Scale: Development and Validation," 2011.

[9] E. F. Brigham and J. F. Houston, *Fundamentals of financial management*. South-Western Cengage Learning, 2013.

[10] T. T. Tambunan, "Development of micro, small and medium enterprises and their constraints: A story from Indonesia," *Gadjah Mada International Journal of Business,* vol. 13, no. 1, pp. 21-43, 2011.

[11] J. S. Lopus, D. S. Amidjono, and P. W. Grimes, "Improving financial literacy of the poor and vulnerable in Indonesia: An empirical analysis," *International Review of Economics Education,* vol. 32, p. 100168, 2019.

[12] I. Fjodorovs and S. Kodors, "JETPACK COMPOSE AND XML LAYOUT RENDERING PERFORMANCE COMPARISON," in *HUMAN. ENVIRONMENT. TECHNOLOGIES. Proceedings of the Students International Scientific and Practical Conference*, 2021, no. 25, pp. 49-54.

[13] B. G. Mateus and M. Martinez, "An empirical study on quality of Android applications written in Kotlin language," *Empirical Software Engineering,* vol. 24, no. 6, pp. 3356-3393, 2019.

[14] C. Khawas and P. Shah, "Application of firebase in android app development-a study," *International Journal of Computer Applications,* vol. 179, no. 46, pp. 49-53, 2018.

[15] C. Curino *et al.*, "Relational cloud: A database-as-a-service for the cloud," 2011.

[16] M. Jaderberg, K. Simonyan, A. Vedaldi, and A. Zisserman, "Reading text in the wild with convolutional neural networks," *International journal of computer vision,* vol. 116, pp. 1-20, 2016.

[17] K. O'Shea and R. Nash, "An introduction to convolutional neural networks," *arXiv preprint arXiv:1511.08458,* 2015.

[18] Y. Du *et al.*, "Pp-ocr: A practical ultra lightweight ocr system," *arXiv preprint arXiv:2009.09941,* 2020.

[19] K. Simonyan and A. Zisserman, "Very deep convolutional networks for large-scale image recognition," *arXiv preprint arXiv:1409.1556,* 2014.

[20] A. Neumann, N. Laranjeiro, and J. Bernardino, "An analysis of public REST web service APIs," *IEEE Transactions on Services Computing,* vol. 14, no. 4, pp. 957-970, 2018.

[21] H. Koç, A. M. Erdoğan, Y. Barjakly, and S. Peker, "UML diagrams in software engineering research: a systematic literature review," in *Proceedings*, 2021, vol. 74, no. 1: MDPI, p. 13.
[22] E. R. Aquino, P. d. Saqui-Sannes, and R. A. Vingerhoeds, "A methodological assistant for use case diagrams," 2020.
[23] M. Brady and J. Loonam, "Exploring the use of entity-relationship diagramming as a technique to support grounded theory inquiry," *Qualitative Research in Organizations and Management: An International Journal*, vol. 5, no. 3, pp. 224-237, 2010.
[24] R. M. Bastos and D. D. A. Ruiz, "Extending UML activity diagram for workflow modeling in production systems," in *Proceedings of the 35th Annual Hawaii International Conference on System Sciences*, 2002: IEEE, pp. 3786-3795.
[25] V. Gafrikova, W. Szczesny, and Z. Odrzygóźdź, "Online personal finance management applications," *Information Systems in Management*, vol. 4, no. 1, pp. 39-52, 2015.
[26] R. C. Martin, "Clean architecture," ed: Prentice Hall, 2017.
[27] S. Sucipto, N. Resti, T. Andriyanto, J. Karaman, and R. Qamaria, "Transactional database design information system web-based tracer study integrated telegram bot," in *Journal of Physics: Conference Series*, 2019, vol. 1381, no. 1: IOP Publishing, p. 012008.
[28] M. Seidl, M. Scholz, C. Huemer, and G. Kappel, *UML@ classroom: An introduction to object-oriented modeling*. Springer, 2014.
[29] L. Li *et al.*, "Static analysis of android apps: A systematic literature review," *Information and Software Technology*, vol. 88, pp. 67-95, 2017.
[30] A. S. H. Puspita, S. Sutrima, R. Setiyowati, and S. Wibowo, "STABILITY ANALYSIS OF CELLULAR OPERATING SYSTEM MARKET SHARE IN INDONESIA WITH THE COMPETITIVE LOTKA-VOLTERRA MODEL," *BAREKENG: Jurnal Ilmu Matematika dan Terapan*, vol. 18, no. 1, pp. 0333-0340, 2024.
[31] N. E. Putri, S. Marwan, and T. Hariyono, "Aplikasi Berbasis Multimedia Untuk Pembelajaran Hardware Komputer," *Jurnal Edik Informatika Penelitian Bidang Komputer Sains dan Pendidikan Informatika*, vol. 1, no. 2, pp. 70-81, 2017.
[32] A. R. Allouche, "Gabedit—A graphical user interface for computational chemistry softwares," *Journal of computational chemistry*, vol. 32, no. 1, pp. 174-182, 2011.
[33] M. E. Khan and F. Khan, "A Comparative Study of White Box, Black Box and Grey Box Testing Techniques," 2012.
[34] S. Nidhra and J. Dondeti, "Black box and white box testing techniques-a literature review," *International Journal of Embedded Systems and Applications (IJESA)*, vol. 2, no. 2, pp. 29-50, 2012.