

CHAPTER V

CLOSING

This chapter presents conclusions formulated based on the results of design, implementation, testing, and evaluation of the EPT Management System with the DAD approach. These conclusions are used to answer the problem formulation and assess the achievement of research objectives. This chapter also contains suggestions that can become considerations in development, improvement, and system application in the next stage.

5.1.Conclusion

Based on the research results that have been done, the Disciplined Agile Delivery (DAD) methodology can be applied in architecture design and development of an integrated English Proficiency Test (EPT) Management System through three main phases, namely Inception, Construction, and Transition. In the Inception phase, the research conducted requirement analysis through interviews, observation, team formation, and requirement priority arrangement using the MoSCoW method. In the Construction phase, these needs were realized through gradual development in eight sprint cycles documented using Notion, so the development process could run more directed, adaptive, and still adjust to stakeholder feedback. In the Transition phase, the system was validated through testing, training, and documentation handover. From the architecture side, the system was successfully built in the production environment using VPS, Docker, Dokploy, Traefik, MySQL, and Gotenberg, so application services, database, and PDF document creation can run as separate but connected components. Therefore, the application of DAD in this research is proven to be a development approach that is quite disciplined, flexible, and suitable for building a centralized and integrated EPT Management System.

The functional quality and user acceptance level of the produced EPT Management System show fairly good results based on technical testing and User Acceptance Testing (UAT). Functionally, the system has provided main modules such as member registration, email verification, exam registration, payment confirmation, exam schedule and session management, QR code-based attendance, table lookup-based scoring, PDF certificate issuing, certificate verification, admin dashboard,

master data, and user role and permission settings. Technical testing results show that 19 Unit Tests and 245 Integration Tests were successfully run with passed status without failure, while UAT results show that 36 of 40 scenarios were declared passed with a success level of 90.00%. Findings that were not yet suitable in the scoring process, badge update, QR attendance, and reschedule limitation have been fixed and retested narratively. Based on these results, the system can be considered suitable to continue to the use stage with initial assistance, although it still has limitations because it does not yet include SIAMIK integration, payment gateway, full online exam, and full scoring automation or end-to-end automation.

5.2.Suggestions

Based on research and system implementation results, several suggestions that can be given for further development are as follows.

1. The system can be developed further with integration to SIAMIK or the university academic system. This integration can help the synchronization process of scores, passing status, and other academic administrative needs so EPT result data does not need to be moved manually by staff.
2. Digital payment features can be considered if there is already policy and authority from the university. Digital payment integration will make the payment process more transparent, reduce possible recording mismatch, and speed up participant payment status validation.
3. Long-term development can be directed to full online exam implementation or online CBT if infrastructure, policy, and monitoring mechanisms are ready. This feature is not the focus of the current research, but can become further development to expand EPT services.
4. UI/UX aspects need to continue to be improved based on real operational use. Improvements can be focused on simplifying technical terms, clarifying action buttons, status consistency, confirmation on important actions, and additional instructions on staged features such as scoring, certificate verification, and access rights management.
5. Post-implementation evaluation needs to be done regularly after the system is used with real operational data. This evaluation can include bug recording, user problem monitoring, measurement of service time before and after the system,

and analysis of system effectiveness in reducing queues and staff administrative workload.

6. From the security and operational sustainability side, system managers are suggested to apply regular database backup, admin access audit, stronger protection for verification documents, and application log monitoring. This is important to maintain data integrity, document security, and the availability of the EPT Management System service in long-term use.