ICT30001 – Individual Journal
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Week 1: Kickoff Meeting and Initial Setup (10/05/2024)

During the first week, our team, consisting of Luan (Security Architect with DevSecOps experience), Dan (Project Manager), Khang (Solution Architect), and Huy (Developer), came together to introduce ourselves and establish contact information. We began by thoroughly reading and understanding the project's requirements document provided by the client. This helped us identify the key deliverables and deadlines, setting a solid foundation for our project.

Lesson Learned: The importance of thoroughly understanding the project requirements at the beginning cannot be overstated. It sets a clear direction and ensures that all team members are on the same page from the start. Effective communication and initial planning are crucial for laying a strong foundation for the project's success.

Week 2: Role Assignment and Initial Planning (17/05/2024)

In the second week, we assigned specific roles and responsibilities to ensure smooth project execution. Dan, our Project Manager, took charge of overseeing the project's progress and managing client communication. Luan, with his expertise in security architecture and DevSecOps, assumed the role of Security Architect, focusing on ensuring the security of our solutions. Khang, as the Solution Architect, was tasked with designing and architecting the overall solution. Huy, our Developer, was responsible for coding and implementation tasks. With roles clearly defined, we began planning our project, setting up internal communication lines, and finalizing our project draft proposal. This included creating a Google Drive for document storage, a GitHub repository for code storage, and a Slack channel for team communication and collaboration.

Lesson Learned: Clear role definition and assignment are essential for project efficiency. By leveraging each team member's strengths and expertise, we can ensure that tasks are handled effectively. Additionally, setting up robust communication channels early on facilitates seamless collaboration and information sharing.

Week 3: Project Re-evaluation and Redefinition (24/05/2024)

In the third week, we faced a significant challenge when our initial project proposal for a Q&A chatbot was rejected by the client due to data and involvement constraints. This led us to quickly pivot and redefine our project. We decided to focus on the design and deployment of a secured CI/CD pipeline for application development. Huy and Dan worked diligently to prepare a new

project brief, and Dan scheduled a meeting with the new client to discuss and sign the MOU. Meanwhile, Khang and Huy collaborated to draft a new project proposal, ensuring it was ready for review and final submission by the end of the week.

This experience underscored the importance of flexibility and adaptability in project management, as well as the necessity of maintaining open lines of communication with clients to navigate changes effectively.

Lesson Learned: Flexibility and adaptability are crucial in project management. Being able to pivot quickly and redefine project goals in response to client feedback is essential for maintaining project momentum and client satisfaction. Open communication with clients is key to navigating changes effectively.

Week 4: Task Allocation and Initial Proposal Development (31/05/2024)

During the fourth week, we concentrated on preparing and organizing tasks for our initial project proposal and plan. We divided the assignment into specific sections to streamline our efforts. Huy was responsible for the Executive Summary, Background, and Objectives; Luan handled the Scope, Out of Scope, Constraints, Dependencies, and Deliverables; Khang focused on Assumptions, Risks, and Issues; and Dan managed the Project Team Structure, Project Sign-off, and the Gantt Chart in Appendix A. We set a deadline of June 2, 2024, for the completion of these sections and planned a team review session on Sunday evening to check for grammar errors, plagiarism, and overall coherence. Additionally, Huy prepared the Team Contribution Statement Stage 1, seeking clarification or input from team members as needed.

By the end of the week, we ensured that our meeting minutes were drafted and reviewed, ready for submission after the next class. This structured approach helped us stay organized and ensured that each team member contributed effectively to the project's progress.

Lesson Learned: Breaking down the project into manageable tasks and assigning clear responsibilities to team members enhances productivity and ensures that all aspects of the project are covered. Regular review sessions help maintain quality and coherence in the project deliverables.

Week 5: Initial Infrastructure Provisioning and Code Demonstration Preparation (07/06/2024)

In the fifth week, our team focused on preparing and provisioning the initial infrastructure. We held a meeting on Monday (03/06/2024) to discuss and allocate tasks. Luan and Khang were tasked with writing scripts to automatically deploy the AWS infrastructure, while Luan also took on configuring Git Secret to store credentials. Luan and Dan collaborated on setting up triggers between committing code on GitHub and running test cases. Additionally, Luan and Huy worked together to write test cases for testing the connection and functionality of the infrastructure. All these tasks had a deadline of 05/06/2024. To prepare for a code demonstration scheduled for

Friday, we planned an online meeting on Thursday to test and finalize the code demo. Luan was designated to conduct the demo, with the infrastructure set up on his machine, while the rest of the team contributed ideas and feedback.

By the end of the week, we also decided to create an infrastructure diagram to illustrate our progress to the lecturer. Luan and Huy were responsible for this task, with a deadline of 06/06/2024. Additionally, we agreed to start using Jira for project management, and Dan was assigned to set up the project portal on Jira by 06/06/2024.

Lesson Learned: Effective task allocation and clear deadlines are crucial for timely completion of project milestones. Collaborative preparation for presentations and demos ensures that all team members are aligned and ready to showcase their work. Additionally, using project management tools like Jira can significantly enhance organization and tracking of tasks.

Week 6: Code Optimization and Infrastructure Deployment Workflow (14/06/2024)

In the sixth week, we concentrated on optimizing and refactoring our code repositories. Luan and Khang thoroughly reviewed the current code base, aiming to identify areas for optimization, with a deadline of 10/06/2024. Khang focused on identifying areas for algorithm, database, and resource optimization, while Luan took charge of performing the code optimization. Khang then handled the task of code refactoring. Both optimization and refactoring were due by 12/06/2024. We also held a group meeting on 10/06/2024 to discuss methods and tools for infrastructure deployment. Khang was responsible for designing and completing the infrastructure deployment workflow, with a deadline of 11/06/2024. Luan and Huy began their research and discussions on Dockerhub and Kubernetes, with a deadline of 11/06/2024. They worked on setting up application containerization and storage on Dockerhub, and subsequently hosted the application infrastructure on Kubernetes, both tasks due by 12/06/2024.

For the upcoming weeks, we planned to deploy the current workflow on AWS. Dan was assigned the task of setting up synchronization and deployment between ArgoCD and Kubernetes clusters, with a deadline of 12/06/2024. Finally, Dan prepared the project progress slides for our lecturer, due by 13/06/2024, and Huy compiled the meeting minutes, due by 14/06/2024.

Lesson Learned: Continuous improvement of the codebase through optimization and refactoring is essential for maintaining code quality and performance. Effective planning and implementation of infrastructure deployment workflows streamline the deployment process. Research and collaboration on new tools and technologies, such as Dockerhub and Kubernetes, enhance the team's technical capabilities and project outcomes.

Week 7: Finalizing Documentation, CI/CD Pipeline Architecture, and Collaboration Efforts (21/06/2024)

In the seventh week, our team focused on several key areas to advance the project. Firstly, Dan took the lead in finalizing the documentation process by creating an Excel summary of all the

documents needed for July. He also assigned the appropriate team members to specific tasks related to documentation and preparation for the final presentation and user manual. Concurrently, Khang and Luan collaborated to finalize the architecture of the CI/CD pipeline. Luan then built a proof of concept (POC) for the architecture, which was discussed and refined with the team.

Additionally, Luan and Huy reached out to Swinburne's startup group or organizations to explore potential collaborations. They aimed to convince these startups to adopt our CI/CD pipeline, summarizing the startups' considerations and concerns for the team to address. Finally, Luan and Khang worked on finishing the CI/CD workflow, creating a simple demo to illustrate its functionality to test users and startup organizations.

Lesson Learned: Effective documentation and thorough preparation for presentations are crucial for clear communication and project success. Building and testing a POC before full implementation helps identify potential issues early and ensures the architecture meets project requirements. Engaging with external organizations for collaboration can provide valuable feedback and opportunities for real-world application, highlighting the importance of networking and stakeholder engagement.

Week 8: Documentation Progress, Collaboration with Mexer, and CI/CD Workflow Completion (29/06/2024)

During the eighth week, our team focused on several critical updates and tasks. Firstly, Dan ensured that the current progress regarding documentation was updated and summarized in the online Excel sheet. This provided a clear overview of task assignments and completion status for the team. In parallel, Luan and Huy continued to build on their collaboration efforts with startup organizations, successfully securing Mexer as a test user and client. Mexer expressed interest in having a meeting in July to discuss further details.

Khang and Luan made significant progress on the CI/CD pipeline architecture and proof of concept (POC). The architecture was completed, and the POC was progressing well, meeting the set deadlines. Additionally, Luan and Khang finalized the CI/CD workflow, preparing a simple demo that could be shown to participants and test users, including Mexer, in July.

Due to the class being canceled this week, we proposed scheduling another day for a progress meeting with the lecturer. If this was not feasible, we planned to summarize the tasks completed during the week and send the update to the lecturer.

Lesson Learned: Consistent documentation and progress tracking are essential for maintaining clarity and accountability within the team. Securing and maintaining open communication with test users and clients, such as Mexer, is crucial for gathering feedback and ensuring the project's practical relevance. Completing a demo version of the CI/CD workflow before client meetings enhances our ability to showcase progress and gather constructive input, reinforcing the importance of preparation and stakeholder engagement.

Week 9: Infrastructure Migration, Application Development, and Security Integration (01/07/2024)

During the ninth week, our team focused on several critical tasks to ensure the project's progression and successful completion. Firstly, Luan took charge of migrating all infrastructure to AWS EKS. This task was ongoing and on track to meet the deadline of 05/07/2024. Luan was also responsible for preparing a sample web application tailored for Mexer, which was progressing well. Meanwhile, Khang was developing a sample web application for Trung Nguyen Coffee, ensuring it met the client's requirements.

In addition to these tasks, Khang was tasked with redrawing and updating the existing infrastructure diagrams to reflect the latest changes and enhancements. This was also progressing as planned. Dan was responsible for organizing and allocating tasks for the end-of-semester documentation, ensuring that all team members were clear on their responsibilities and deadlines.

Another significant task for this week was the integration of security measures within the CI/CD pipeline, a joint effort by Luan and Khang. This integration was critical to ensure the security and integrity of our deployment processes and was on track for completion by the set deadline.

Lesson Learned: The importance of detailed planning and task allocation cannot be overstated, as it ensures that each team member is aware of their responsibilities and deadlines. Regular updates and status checks are crucial for maintaining progress and identifying any potential issues early. Additionally, integrating security measures within the CI/CD pipeline from the outset is essential for maintaining the overall security and integrity of the project, highlighting the need for proactive security planning.

Week 10: Application Migration, Monitoring Setup, and User Documentation (08/07/2024)

In the tenth week, our team concentrated on finalizing several key components of the project. Luan was responsible for migrating all applications to AWS EKS, which was progressing well and on track for completion by 13/07/2024. In parallel, Luan also worked on setting up monitoring features for the migrated applications to ensure their performance and stability post-migration.

Dan organized and scheduled a meeting to discuss the content required for the User Guide, including the creation of instructional videos and the writing of the user manual. This meeting was crucial for defining the scope and structure of the guide. Dan also took charge of producing the user guide videos and writing the corresponding report, with both tasks progressing as planned and set for completion by the deadline.

Khang focused on developing a usability testing plan involving four subjects, ensuring that the testing was well-structured and covered all necessary aspects. Huy was responsible for finding participants and performing the usability testing, as well as documenting the results. Both tasks were scheduled and progressing according to plan.

Lesson Learned: Effective coordination and clear communication are vital when managing multiple components of a project. Ensuring that all team members understand their responsibilities and deadlines helps maintain progress and alignment. Additionally, integrating monitoring features as part of the migration process is essential for ongoing application management, while thorough documentation and usability testing are crucial for user satisfaction and system effectiveness.

Week 11: Final Testing and Report Preparation (14/07/2024)

In the eleventh week, our team focused on finalizing the project with key testing and documentation tasks. Luan conducted the last testing phases with both Mexer and Trung Nguyen Coffee, ensuring that all aspects of the applications were thoroughly vetted and met the clients' requirements by the deadline of 20/07/2024. This final round of testing was crucial for validating the solutions before the project's conclusion.

Dan was responsible for outlining the tasks required for the Final Report and the Final Solution. By 20/07/2024, Dan had developed a comprehensive plan for the report, assigning specific sections to team members based on their expertise. The Final Report and Implementation Strategy, which was due on Sunday 29/07/2024, was set to include contributions from various team members. Huy was assigned the Executive Summary, Introduction, and Project Overview. Khang focused on Functional, Non-functional, and User Interface Requirements. Luan was tasked with detailing the Methodology, Acceptance Criteria, and Future Considerations. Dan would handle the Conclusion, Design Template, and final edits, including references, glossary, index, and appendices.

Lesson Learned*:* Effective final testing and documentation are pivotal in ensuring the success of a project. Comprehensive testing with all stakeholders helps in catching any last-minute issues, while clear task allocation for report writing streamlines the documentation process. It's essential to maintain clear communication and coordination among team members to meet deadlines and deliver a polished final product.

Week 12: Final Solution Report Preparation (21/07/2024)

In the twelfth week, our team focused on outlining and preparing the Final Solution Report. Dan was responsible for defining and outlining the tasks required for the report by the deadline of 23/07/2024. This task involved coordinating with all team members to ensure that each section of the report was clearly defined and assigned.

The Final Solution Report, which was due on Sunday 29/07/2024, required significant contributions from various team members. Huy was tasked with developing the Marketing Plan/Strategy, Marketing Campaign, and Business Plan. Luan focused on the Software Package Solution and the Website Design/Change/New Implementation. Dan was responsible for the

Human Resource Framework, while Khang handled the Logistics and Supply Plan Strategy, as well as any additional elements needed for the report.

By the end of the week, the overall progress on the report was at 20%. The structured approach to task allocation ensured that each aspect of the report was being worked on simultaneously, facilitating a smoother workflow towards the final deadline.

Lesson Learned: A well-defined task outline is crucial for effective report preparation. Assigning specific sections to team members based on their expertise and ensuring timely progress updates helps in maintaining organization and meeting deadlines. Clear communication and regular check-ins are essential for coordinating contributions and achieving a cohesive final document.

Week 13: Presentation Preparation (29/07/2024)

In the thirteenth week – our final week, our team focused on outlining and preparing the final presentation. Dan was tasked with defining and outlining the presentation tasks, with a deadline set for 30/07/2024. This involved organizing the presentation structure and assigning responsibilities to ensure a comprehensive and engaging presentation.

The presentation, which was to be finalized by the due date, required contributions from various team members:

- **Problems**: Dan and Huy were responsible for addressing and presenting the problems identified during the project.

- **Proposal**: Dan and Huy also took on the task of detailing the project proposal.

- **Implementation**: Khang was tasked with explaining the implementation details of the project.

- **Demo**: Luan was responsible for demonstrating the project's functionality.

- **Conclusion**: Dan and Huy were to provide the concluding remarks and summary of the presentation.

By the end of the week, the task outlining was on track, ensuring that each member knew their responsibilities and deadlines for the presentation preparation.

Lesson Learned: Clearly outlining presentation tasks and assigning specific roles to team members helps in creating a well-structured and effective presentation. Regular updates and coordination among team members are crucial for integrating various sections seamlessly and ensuring that all aspects of the project are covered comprehensively.

Summary:

Each week was meticulously planned and executed from initial setup to final presentation, reflecting our commitment to excellence and adaptability. The early weeks focused on role assignments and planning, followed by intensive phases of infrastructure provisioning, code optimization, and testing. The process of migrating applications to AWS EKS, preparing comprehensive documentation, and developing user guides was challenging but rewarding. Our success was greatly supported by the dedication of each team member—Luan's expertise in security and CI/CD, Dan's project management skills, Khang's architectural insights, and Huy's development efforts were instrumental. The guidance and feedback from our lecturer also played a crucial role in steering us towards success.