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**Guide 2. APT Project Development**

**Capstone Subject**

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| **1. APT Project progress summary** |
| Below you will find different fields that you must complete with the requested information. |

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| APT project progress summary | The project is moving forward with a strong focus on developing an application that facilitates the purchase and sale of wholesale products, with a structure focused on the community of buyers and suppliers. To date, several key activities have been completed, although issues have also been identified that have required adjustments in the approach.  Activities Carried Out:  User Interface (UI) Design:  The main screens of the application have been created, prioritizing usability and user experience. This activity was completed in 3 days.  Requirements Collection:  End-user requirements were identified and documented, allowing for a clear overview of the project needs. This phase was also completed.  Backend Development:  Currently underway, the business logic is being implemented, including management of users, purchasing groups and transactions, with a focus on a modular architecture.  Problems Encountered:  Complexity in State Management:  The interaction between components and data flow presented challenges, making it difficult to manage application state.  Lack of Knowledge in Modern Architectures:  A gap was identified in the team's knowledge of architectural patterns such as MVVM, which made it difficult to implement an organized structure.  Implemented Solutions:  Learning about MVVM:  Time was spent researching and understanding the MVVM pattern, through reading Flutter documentation and guides on best practices in mobile development.  Development Restructuring:  Activities related to backend and frontend development have been adjusted to align with the MVVM architecture, which will facilitate state management and code modularity.  Activities Not Started:  Frontend Development:  Implementation of the graphical interface, scheduled to begin once the backend is in a more advanced stage.  Unit and Functional Testing:  These tests are planned to ensure the stability and functionality of the application.  Application Deployment and Publication:  This phase will include setting up production and test environments, as well as deploying the application.  Conclusion  The project has made significant progress, with several activities completed and a clear understanding of the next steps. Although challenges were presented in state management and architecture, the implemented solutions are laying the foundation for more efficient and sustainable development. The team is ready to move forward in the next phases, with a renewed focus on code quality and organization. |
| Goals | Develop an innovative application that connects buyers and suppliers in the field of wholesale product buying and selling. This platform seeks to create a dynamic and collaborative community that facilitates access to products at competitive prices through joint purchases, encourages social interaction between users, and guarantees secure and transparent transactions. In addition, mechanisms will be implemented for the efficient management of purchasing groups, thus promoting loyalty and trust between buyers and suppliers, and strengthening the bond with the company. |
| Methodology | SCRUM |
| Evidence of progress | To date, the basic functionality of the application has been established, completing the login and registration system in the cloud, as well as navigation between screens. These advances provide the necessary infrastructure for the development of the community of buyers and suppliers, and lay the foundation for the implementation of additional features such as management of purchasing groups and secure transaction systems. The project is progressing according to plan, and is now focused on the creation of functionalities that strengthen interaction and trust between users. |

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| **2. Monitoring the Work Plan** |
| Carefully examine your work plan, focusing especially on the progress and adjustments column. |

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| Work Plan | | | | | | | |
| Competency or units of competencies | Activities | Resources | Duration of the activity | Responsible[[1]](#footnote-1) | Observations | State of progress | Settings |
| **Interface design and user experience** | User Interface (UI) Design | Figma | Indicate the duration of each activity. | Jostin Olivera | The priority is usability and a fluid user experience. | Filled | None |
| Software development | Requirements Collection | Interview tools, user access |  | Jostin Olivera | It is essential to have a clear vision of the end user. | Filled | None |
| Software development | Backend Development | Kotlin, Firebase, Cloud Database |  | Jose Alcantara | Need for a modular architecture to facilitate future changes. | In progress | Review of modules |
| Mobile Application Development | Frontend Development | Kotlin, Android Studio |  | Jose Luis Alcantara | Continuous synchronization with the backend to avoid conflicts. | Not started | Adjust times |
| Software Testing and Quality Assurance | Unit and Functional Testing | Testing tools, emulators |  | Ricardo Saumann | Additional load and safety testing to ensure stability. | Not started | Plan schedule |
| Software deployment and maintenance | Deployment and publication of the Application | Cloud Servers |  | Jostin Olivera | |  | | --- | | Phased deployment for testing with a small group of users. |  |  | | --- | |  | | Not started | Define test group |

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| **3. Adjustments from monitoring** |
| Go deeper into your observations of your work plan. Analyze the planned activities and point out what aspects facilitated or hindered the execution of the plan. Describe how you addressed and/or will address the obstacles. Finally, indicate the adjustments you made to the work plan based on this analysis. |

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| Factors that have facilitated and/or hindered the development of my work plan:During the development of the project architecture, we faced significant difficulties related to the organization and state management of components. The complexity of data flow and interaction between different parts of the application became apparent, making it necessary to adopt a more structured approach.  Specific Difficulties:  Complexity in State Management: Managing the interaction between the different components of the application proved to be complicated. This led to confusion and poorly maintainable code, which affected the overall progress of the project.  Lack of Knowledge in Modern Architectures: Although we had prior knowledge of mobile development, we did not have a deep understanding of specific architectural patterns such as MVVM (Model-View-ViewModel), which made it difficult to effectively implement business logic and separation of responsibilities.  Implemented Solution  To address these issues, I decided to spend some time learning about MVVM architecture, which is particularly well-suited for mobile apps due to its focus on separation of concerns and ease of maintenance.  Specific Actions:  Research and Study: I ​​dove into Flutter documentation and various guides explaining how to implement MVVM architecture. This included reading articles, reviewing code examples, and participating in developer forums.  Learning Best Practices: As I delved deeper into MVVM, I also learned about best practices in mobile development, such as using streams for state management, implementing proper design patterns, and the importance of maintaining clean and modular code.  Gradual Implementation: I applied the concepts learned in a gradual manner in our project. I started by reorganizing the existing components to align with the MVVM pattern, which made it easier to manage state and interaction between different parts of the application. |

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| Activities adjusted or eliminated:  Activity Settings  Adjustment in Backend Development Activity:  Before: Implementation of business logic without a clear focus on architecture.  Now: Integrate the MVVM pattern from the start, which means restructuring the logic to make it more modular and maintainable. This will allow for better state management and make future modifications easier.  Frontend Development Activity Adjustment:  Before: Implementation of the graphical interface without a clear architectural framework.  Now: Incorporate MVVM into Frontend development, which means that the interface will be more aligned with business logic, improving synchronization between components and simplifying user interaction. |

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| Activities that you have not started or are delayed:  Activities not started:  **Frontend Development:**   * Implementation of the application's graphical interface and user interaction logic using the MVVM pattern.   Unit and Functional Testing:   * Performing unit testing on the backend and functional testing of the application to ensure the correct functioning of the main functionalities.   **Deployment and publication of the Application:**   * Setting up production and test environments, and deploying the application to cloud servers. |

1. If the APT Project is a group project, the names of those responsible for each task or activity must be indicated in this column. This will later allow for differentiating the evaluation for each member. [↑](#footnote-ref-1)