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**Guía1. Definición Proyecto APT**

**Asignatura Capstone**

1. **PARTE I**

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| **1. Antecedentes Personales** |
| A continuación, se presenta una tabla en la que debes completar la información solicitada. |

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| Nombre estudiante | **Simon eduardo Carrasco Gutiérrez**  **Benjamin Rodrigo Muñoz Pardo**  **Almendra Aileen Pizarro Velásquez** |
| Rut | **20880242-9**  **20880197-k**  **20603457-2** |
| Carrera | **Ing. en informática** |
| Sede | **Melipilla** |

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| **2. Descripción Proyecto APT** |
| En la descripción debes señalar brevemente el nombre de tu proyecto APT y las competencias del perfil de egreso que vas a poner en práctica. Si en tu carrera están definidas las áreas de desempeño, también menciona a qué áreas de desempeño está vinculado el proyecto. |

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| Nombre del proyecto | **"Mi Almacén" Project** |
| Área (s) de desempeño(s) | Software Development  Project Management |
| Competencias | * Manage the configuration of application and database environments in a business setting to enable operations or ensure the continuity of systems supporting business processes, in line with industry standards. * Provide IT solution proposals by thoroughly analyzing processes according to the organization's requirements. * Develop a software solution using techniques that allow systematizing the development and maintenance process, ensuring the achievement of objectives. * Implement comprehensive systems solutions to automate and optimize business processes according to the organization’s needs. * Manage computer projects by offering decision-making alternatives according to the organization's requirements. * Communicate orally and in writing, using functional linguistic tools for specific purposes in various social, work, and disciplinary contexts. * Communicate orally and in writing in English in work-related situations at an intermediate-high level in an intensive modality according to the TOEIC and CEFR competency tables. * Ability to generate ideas, solutions, or innovative processes that respond to opportunities, needs, and social or productive demands in collaboration with others while taking calculated risks. * Develop entrepreneurship projects from the identification of opportunities from their specialty, applying techniques related to the objective, with a focus on adding value to the environment. |

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| **3. Fundamentación Proyecto APT** |
| A continuación, se presentan distintos campos que debes completar con la información solicitada. Esta sección busca que describas en detalle tu proyecto y justifiques su relevancia y pertinencia. |

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| Relevance of the APT Project | **Problem the Project Seeks to Solve**  **Problem to Solve:**  The "Mi Almacén" project aims to address the lack of accessible and effective technological tools for managing inventory, sales, and payments in small stores and local businesses.  Currently, we are working with a specific store, and we aim for the application to eventually serve all medium or small businesses in the future.  These businesses often rely on manual methods or basic software to manage their operations, which can lead to errors in inventory management, difficulties in generating reports, product expiration due to poor management, and problems with managing credit payments.  The absence of an integrated and user-friendly solution limits the efficiency and capability of business owners to make informed decisions and manage their resources in an optimal and organized way.  **Relevance to the Field of Computer Engineering:**  This topic is relevant to the field of computer engineering because it involves developing a software solution that integrates multiple technologies and processes, such as database management, web development, user authentication security, and payment service integration.  It directly addresses the need for innovative and effective solutions to real-world problems faced by small businesses, allowing computer engineers to apply their skills in software development and project management.  **Context of the Problem**  **Location:** The project is situated in the context of small stores and local businesses in Maria Pinto and surrounding areas, where many small businesses are family-operated and rely on traditional methods to manage their operations.   * **Local Economy:** The local economy is dominated by retail, agriculture, and services. * **Limited Technological Infrastructure:** Although there is access to the Internet, many merchants do not have access to advanced technologies or specialized software to manage their businesses. * **Lack of Resources:** Small business owners often have limited resources to invest in expensive business management solutions.   **Impact on the Target Audience**  **Those Affected:** The project is designed for small merchants and local store owners who need to improve the efficiency and effectiveness of their operations. This includes:   * **Business Owners:** Who need tools to improve the management of inventory, sales, and payments. * **Store Employees:** Who will benefit from clearer and more efficient processes.  **Store Customers:** Who could receive better service thanks to improved business management. **Value of the Project**  **Real or Simulated Value:** The "Mi Almacén" project provides value in several ways:   1. **Process Automation:** Simplifies and automates manual processes, reducing errors and improving operational efficiency. 2. **Access to Modern Technologies:** Provides access to advanced technologies like web-based inventory management and electronic payment integration at an affordable cost for small businesses 3. **Facilitates Business Growth:** Improves management and efficiency, allowing small businesses to grow and compete better in the market. |
| Descripción del Proyecto APT | The platform will facilitate inventory management through features to add, edit, and delete products, automatic sales registration, management of credit payments, and the generation of sales and inventory reports.  To address the problem, PHP and cPanel will be used, following the Scrum methodology to develop an intuitive solution tailored to the needs of small local businesses. |
| Pertinencia del proyecto con el perfil de egreso | Our APT project addresses the creation of comprehensive technological solutions that automate and optimize business processes.  In the development of our website, several key competencies of the graduate profile will be applied, such as:  **Software Development:**  The competency to develop software solutions is essential to create the website that will manage inventory, sales and payments. This involves using programming and web development techniques, managing databases and ensuring that the system is efficient and easy to use.  **Computer Project Management:**  Managing the project using the Scrum methodology is crucial for organizing tasks, prioritizing features, and ensuring the project is completed on time. This also includes the ability to effectively communicate with stakeholders and manage available resources.  **Business Process Analysis and IT Solutions:**  The ability to analyze business processes and offer technological solutions that improve operational efficiency for small stores is a key competency. The project requires analyzing the specific needs of customers. |
| Relación con los intereses profesionales | We have an interest in project management and programming, which are aligned with the project’s objectives, as we want to work in project management and contribute to a well-structured process.  This project will allow us to apply our knowledge in a practical context, enhancing our skills in project management, software development, and database management. |
| Factibilidad de desarrollo del Proyecto APT | Our APT project is feasible because, although the time is relatively short, we have the capability to execute it. Our team possesses knowledge of the programming language we are using. Additionally, we have internal and external resources, which provide us with the necessary materials to carry out the project smoothly. Although it is not easy, with our development team, we can make steady progress. |

1. **PARTE II**

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| **4. Objetivos** |
| En este apartado debes definir objetivos generales y específicos del Proyecto APT. Es importante aclarar que los objetivos se deben plantear en forma clara, concisa y sin dar mayores explicaciones, es decir, deben entenderse por sí solos. Se sugiere redactarlos utilizando un verbo en infinitivo, pues ello obliga a precisar acciones concretas. |

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| General Objective | Develop a website for small stores that allows them to efficiently manage their inventory, sales, credit payments, and report generation, thereby improving their operational capacity and helping them make better decisions. |
| Specific Objectives | **Specific Objectives:**   1. **Implement a user authentication system:** Create functionality that allows users to register, log in, and protect access to the application. 2. **Develop CRUD (Create, Read, Update, Delete) functionalities for product management:** Facilitate inventory management through a system that allows adding, modifying, and deleting products intuitively. 3. **Integrate the Transbank API for electronic payments:** Automate the sales registration process by integrating a secure and reliable electronic payment solution. 4. **Implement low-stock alerts:** Set up automatic notifications to inform users when a product is running low, helping maintain an adequate inventory. 5. **Create report generation modules:** Develop functionalities that allow generating detailed reports of sales and inventory, facilitating data analysis and informed decision-making. 6. **Set up automatic backups:** Establish a system for regular backups to protect data and ensure business continuity in case of data loss. |

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| **5. Metodología** |
| En el siguiente apartado deberás describir la metodología, propia de tu disciplina, que utilizarás para resolver el proyecto APT antes descrito, incluyendo las etapas y métodos de trabajo. |

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| Methodology Description |
| **The Approach:** Scrum methodology for project development.  **Phases:** Documentation, information gathering and planning, design, development, testing and implementation.  **Roles and Responsibilities:**  **Simón Carrasco** (Scrum Master) Responsible for facilitating meetings, ensuring the team follows Scrum principles, and managing project documentation and tracking.  **Benjamín** (Product Owner) Responsible for defining the vision and priorities of the project, as well as creating and managing the Product Backlog.  **Almendra Pizarro** (Team Developer) Responsible for technical development and documentation related to system design and development.  Our project will address the scrum methodology as it is considered the simplest and most practical methodology at the time of undertaking our project, we can see the roles assigned to team members as it is considered the most appropriate for each role then:  The project is being carried out with regular sprints to plan, develop, and review functionalities. The approach is iterative and incremental, allowing for improvements and adjustments to the product based on feedback and client needs. |

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| **6. Evidencias** |
| A continuación, describe qué evidencias serán evaluadas en el informe de avance y en el informe final de tu proyecto APT. Estas evidencias deben ser acordadas con tu docente. Se entenderá por evidencia los productos que se desarrollen durante el proyecto y cuyo propósito sea visibilizar o documentar cómo se ha implementado el trabajo. |

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| **Evidence Type (progress o final)** | **Evidence Name** | **Description** | **Justification** |
| Progress | Interactive Prototype | Development of an interactive prototype showing the website (mockups) including basic navigation and screen design. | The mockup will help visualize the app structure and flow, facilitating early feedback and ensuring a better user experience. |
| Progress | Database Model | Creation of the database model, including tables, relationships, and structures to manage inventory, sales, and users. | Documenting the database structure is essential to ensure efficient and consistent data management on the website. |
| Progress | Product CRUD Functionality | Implementation of CRUD functionalities for product management, allowing the addition, modification, deletion, and viewing of products in the system. | This evidence demonstrates the system’s ability to manage inventory effectively, a key function of the website. |
| Final | Transbank API Integration | Implementation and testing of the integration with the Transbank API for processing electronic payments within the website. | Integrating electronic payments is fundamental for enabling secure transactions and enhancing the app’s functionality. |
| Final | Low Stock Alert System | Development and implementation of an alert system that automatically notifies users when a product’s stock is low. | This system improves business operational efficiency by ensuring products are always available for sale. |
| Final | Sales Report Generation | Implementation of a functionality to generate detailed reports of sales and inventory for analysis. | Reports help users make informed decisions based on real data, improving business management. |
| Final | Automatic Backup System | Configuration of an automatic backup system to protect application data. | Ensures business continuity by protecting data against accidental loss or system failure. |

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| **7. Plan de Trabajo** |
| En la siguiente tabla define la planificación de tu Proyecto APT de acuerdo a lo requerido. |

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| **Plan de Trabajo Proyecto APT** | | | | | | |
| Competency or Unit of Competency | Activity/Task Name | Activity/Task Description | Resources | Duration of the Activity | Responsible | Observations |
| Project Management | Definition of Roles | Define the roles of each team member in the project. | Project documents, meetings | 1 week | Simón Carrasco | Roles were discussed in previous meetings. |
| Requirements Analysis | Requirement Gathering | Collect and analyze client needs to define system functionalities. | Client meetings, interviews | 3 weeks | Simón Carrasco and Benjamín Muñoz | Requirements gathering depends on client availability. |
| Software Design | Mockup Creation | Design system mockups based on the gathered requirements. | Design tools (e.g., Canva) | 1 week | Benjamín Muñoz and Almendra Pizarro | Mockups must align with client specifications. |
| Software Development | Inventory Management Programming | Develop the inventory management module to add, edit, and delete products. | Code editor (VSCode), PHP, MySQL, cPanel | 1 month | Almendra Pizarro | Implemented following best practices in PHP development. |
| Software Testing | Unit Testing | Perform unit testing to verify the correct operation of individual modules. | Testing tools (PHPUnit) | 1 month | Benjamín Muñoz | Tests should be done in an isolated development environment. |
| Documentation | Final Documentation Writing | Document the entire development process and system functionalities. | Word processor, project documents | 2 weeks | Simón Carrasco | Includes both technical and functional documentation for the client. |
| Implementation | Payment API Integration (Transbank) | Integrate the Transbank API to process payments in the system. | Transbank API, integration documentation | 1 week | Simón Carrasco and Almendra Pizarro | Integration depends on Transbank API response times. |
| Usability Testing | User Feedback | Gather feedback from end users regarding system usability. | Feedback forms, user, meetings | 1 week | Benjamín Muñoz | Feedback will be collected from key system users. |
| Deployment and Closing | Final Project Delivery | Deliver the final project to the client and conduct a general review. | User manual, system in production | 1 week | Simón Carrasco and Almendra Pizarro | Feedback will be collected from key system users. |

* Difficulties: Requirement gathering, and user feedback may be affected by client availability.
* Facilitators: The use of agile design and development tools will allow for quick delivery of mockups and functionalities to get early feedback.

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| **8. Carta Gantt** |
| Busca un formato de Carta Gantt que te acomode y organiza en este las actividades planificadas en el punto anterior considerando el periodo asignado para el desarrollo de tu Proyecto APT. Debes mantener la temporalidad del periodo académico en el desarrollo de las tres fases que contempla la Asignatura de Portafolio de Título. |

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| **Actividad** | **Fase 1** | | | | **Fase 2** | | | | | | | | | | | | **Fase 3** | | | |
| **S 1** | **S 2** | **S 3** | **S 4** | **S 5** | **S 6** | **S 7** | **S 8** | **S 9** | **S 10** | **S 11** | **S 12** | **S 13** | **S 14** | **S 15** | **S 16** | | **S 17** | **S 18** |
| *Describe actividades del punto anterior* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
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