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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 | **Catalina Saldías, Vicente Arriagada, Christian Riquelme** |
| Rut | **21.282.948-K / 21.209.464-1 / 20932124-6** |
| Carrera | **Ingeniería en Informática** |
| Sede | **Maipú** |

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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** | *Corporate Travel Management Platform* |
| **Área (s) de desempeño(s)** | *Software Development, IT Project Management, Databases and Information Systems* |
| **Competencias** | *- Apply agile methodologies in IT Project Management - Design and implement software solutions under MVC architecture - Manage and administer relational databases - Evaluate and validate information systems through testing and quality control - Document and communicate results in IT projects* |

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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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| **Relevancia del proyecto APT** | Companies that require their employees to travel face challenges such as lack of traceability in requests, high costs, dispersed processes, and difficulties in expense control. This project proposes a Corporate Travel Management Platform that centralizes requests, approvals, and expense reporting, providing efficiency, transparency, and cost reduction.  Its relevance to the field of Computer Engineering lies in the growing need for systems that digitize administrative and management processes, applying competencies in analysis, development, and software integration.  The project is set in the Chilean context, particularly in medium and large companies with high business activity. It impacts employees, managers, and administrative areas, improving their experience and optimizing resources.  The value contribution lies in optimizing the travel management process, contributing both to financial control and user satisfaction. |
| **Descripción del Proyecto APT** | The objective of the project is to design and develop a web platform that centralizes corporate travel management, allowing companies to optimize the process of request, approval, booking, and expense reporting.  The solution will consist of a system that integrates user, request and approval modules, budget control, expense tracking, and reporting, offering greater traceability, transparency, and efficiency in the management of resources allocated to business travel.  The problem will be addressed through requirements analysis, system architecture design, and the development of a web application that simulates its functionality in a real context, applying project management methodologies and software development best practices. |
| **Pertinencia del proyecto con el perfil de egreso** | The APT Project is directly linked to the Computer Engineering graduate profile, as it requires competencies in requirements analysis, design and development of information systems, project management, and use of web technologies. Creating a platform to manage corporate travel requires applying these abilities to transform a business need into an efficient technological solution.  The selected competencies—such as the ability to design IT solutions, integrate technologies, manage projects, and ensure software quality—are essential to address the identified problem. They ensure that the system is functional, scalable, and delivers real value to the travel management process. |
| **Relación con los intereses profesionales** | My professional interests focus on web and software development, areas in which I wish to specialize and grow professionally. The APT Project is directly related to these interests, as it involves designing and building a complete web platform, applying technologies, methodologies, and programming best practices.  By developing this solution, I will strengthen my technical skills in analysis, design, and application development, while gaining experience in module integration and requirements management. This contributes significantly to my professional development, allowing me to demonstrate my skills and project myself in the field of software development and business digital transformation. |
| **Factibilidad de desarrollo del Proyecto APT** | The APT Project is feasible to develop within the 5-month semester, considering a dedication of 2 hours daily and 5 hours on weekends. The required materials are accessible: a personal computer, internet connection, Visual Studio Code, and various programming languages. External factors that facilitate development include the availability of free tools, online documentation, and prior experience in web development acquired during the degree program. Possible difficulties include time limitations and the complexity of integrating real external services. To address this, the project scope will be limited to a functional prototype using simulated data, ensuring feasibility without losing academic and professional value. |

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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| **Objetivo general** | Develop a web platform for corporate travel management that centralizes requests, approvals, expense control, and reporting, optimizing administrative efficiency and resource usage. |
| **Objetivos específicos** | **Analyze** the functional and non-functional requirements of the system, considering the needs of different user profiles. **Design** the platform architecture, including web interface, database, and module structure. **Implement** a functional prototype that integrates the request, approval, and expense reporting flow using current web technologies. **Validate** the solution through functionality and usability testing to ensure effectiveness and ease of use. **Document** the development process, results obtained, and lessons learned for future system improvements. |

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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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| Descripción de la Metodología |
| The development of the APT Project will follow an agile methodology, specifically Kanban, which allows managing the workflow visually and flexibly, prioritizing tasks and adjusting progress according to project needs. This choice responds to the need for clear and adaptable organization within the semester’s timeframe.  The project stages include:  1. Requirements gathering: identifying functional and non-functional needs. 2. System design: defining architecture, database, user interface, and module structure. 3. Implementation: developing the functional prototype using web technologies and programming tools. 4. Testing and validation: reviewing functionality, usability, and fulfillment of objectives. 5. Documentation and final delivery: consolidating the process, results, and improvement proposals.  As the project will be developed by a single individual, all functions, tasks, and responsibilities will be handled by one person, including planning, technical development, testing, and documentation. |

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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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| **Tipo de evidencia**  **(avance o final)** | **Nombre de la evidencia** | **Descripción** | **Justificación** |
| **Avance** | Backlog / User Stories | Documentation compiling user stories and functional requirements that will guide development. | It demonstrates an understanding of the problem and a clear definition of what the system should implement. |
| **Avance** | Kanban Board | Digital dashboard for task management and project workflow tracking. | It reflects the organization and application of agile methodology in all phases. |
| **Avance** | System Architecture and Database Design | System architecture diagrams and entity-relationship model. | It allows the technical structure to be visualized and the design to be validated before implementation. |
| **Final** | Functional Prototype | Prototype web platform that implements the flow of requests, approvals, and travel reporting. | It demonstrates technical feasibility and compliance with project objectives. |
| **Final** | Testing and Validation | Record of test cases and results obtained in prototype validation. | It ensures that the system meets requirements and is usable by the defined profiles. |
| **Final** | Project Documentation | Report summarizing analysis, design, implementation, testing, and conclusions. | It accounts for the entire process and supports the learning gained. |

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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** | | | | | | |
| **Competencia o unidades de competencias** | **Nombre de Actividades/Tareas** | **Descripción Actividades/Tareas** | **Recursos** | **Duración de la actividad** | **Responsable[[1]](#footnote-1)** | **Observaciones** |
| **Apply agile methodologies in IT project management** | Kanban board configuration and use | Create and manage a Kanban board to organize tasks, with backlog, WIP limits, and periodic reviews. | Trello / Jira / Miro | 1 week | **Project and Requirements Manager / Catalina Saldías** | The board must be kept up to date throughout the project. |
| **Identify and prioritize software requirements** | Backlog creation with user stories | Define user stories, prioritize tasks, and validate project objectives. | Google Docs, Trello | 1 week | **Project and Requirements Manager / Catalina Saldías** | The backlog must reflect the entire scope of the prototype. |
| **Design and implement software solutions using MVC architecture** | Travel request module development | Implement a web form for requests with multi-level approval flow, following MVC architecture. | VS Code, Node.js/React | 3 weeks | **Software Developer / Vicente Arriagada** | It requires testing in different approval scenarios. |
| **Manage and administer relational databases** | Database design and construction | Model the relational database for requests, expenses, policies, and reports. | MySQL / PostgreSQL | 2 weeks | **Software Developer / Vicente Arriagada** | Validate the model to avoid redundancies and ensure scalability. |
| **Design user-centered interfaces** | UX/UI prototyping | Create flowcharts, wireframes, and user interface prototypes for the system. | Figma, Draw.io | 2 weeks | **UX/UI Designer / Christian Riquelme** | It must be aligned with the requirements and validated by the team. |
| **Evaluate and validate information systems through testing and quality control** | Software testing | Perform unit, integration, and validation tests to ensure functionality and usability. | Checklis, Jest / Cypress | 2 weeks | **Software Developer + UX/UI Designer / Catalina Saldías and Christian Riquelme** | It may require adjustments if critical errors are detected. |
| **Document and communicate the results of an IT project** | Final documentation preparation | Write user manual, technical documentation, and project report. | Word / Google Docs | 1 week | **Project and Requirements Manager / Catalina Saldías** | It must be aligned with the evidence requested in the course. |

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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 Planificación y Definición** | | | | **Fase 2 Diseño e Implementación** | | | | | | | | | | | | **Fase 3 Cierre y entrega** | | | |
| **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** |
| ***Definición del Proyecto*** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| ***Definición de roles y tablero Kanban*** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| ***Definición y priorización de requisitos*** |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| ***Diseñar mockup y prototipo UI principal*** |  |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| ***Entrega documentación Fase 1*** |  |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| ***Desarrollo del Frontend*** |  |  |  |  |  | **X** | **X** | **X** |  |  |  |  |  |  |  |  | |  |  |
| ***Implementación de funcionalidades principales*** |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  | |  |  |
| ***Implementación de la BDD*** |  |  |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  |  | |  |  |
| ***Entrega de documentación Fase 2*** |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  | |  |  |
| ***Ejecución de pruebas de rendimiento y usabilidad*** |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** |  | |  |  |
| ***Ajustes finales y mejoras*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** | |  |  |
| ***Documentación Final del proyecto*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | **X** |  |
| ***Presentación final del proyecto*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | **X** |

1. En caso de que el Proyecto APT sea grupal, en esta columna deben indicar el nombre de los responsables de cada tarea o actividad. Esto posteriormente permitirá diferenciar la evaluación por cada integrante. [↑](#footnote-ref-1)