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1. **PARTE I**

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

| Nombre estudiante | **Felipe González, José Pinchi, Javier Bastias** |
| --- | --- |
| Rut | **21.028.681-0, 22.977.329-1, 21.198.437-6** |
| Carrera | **Ingeniería Informática** |
| Sede | **Maipú** |

| **2. Descripción Proyecto APT** |
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| 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. |

| Nombre del proyecto | ***MotoWork: Comprehensive Document and Attendance Management for Workers*** |
| --- | --- |
| Área (s) de desempeño(s) | *IT Engineering* |
| Competencias | *Conduct certification tests on both products and processes using industry-defined best practices.*  *Offer IT solution proposals by analyzing processes holistically according to the organization's requirements.*  *Manage IT projects, providing decision-making alternatives based on the organization’s requirements.*  *Build data models to support the organization's requirements, according to a defined and scalable design over time.*  *Develop the transformation of large volumes of data to generate information and knowledge for the organization, in order to support decision-making and improve business processes, according to the organization's needs.*  *Develop a software solution using techniques that allow the development and maintenance processes to be systematized, ensuring the achievement of objectives.*  *Program queries or routines to manipulate information in a database according to the organization’s requirements.*  *Build programs and routines of varying complexity to address the organization’s needs, aligned with market technologies and following good coding practices.*  *Implement comprehensive systemic solutions to automate and optimize business processes according to the organization's needs.*  *Address systemic vulnerabilities to ensure that the software built complies with the security standards required by the industry.* |

| **3. Fundamentación Proyecto APT** |
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| 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. |

| Relevancia del proyecto APT | *The project aims to solve a common issue in many companies: the lack of a centralized and efficient platform for managing employee documents and shift control. In many organizations, records, documents, and shift management are handled in a fragmented manner, using multiple systems and tools. This not only creates inefficiencies and wastes time but also makes it difficult for both employees and the Labor Relations (HR) department to supervise and access critical information.*  *This issue is highly relevant because digitalization and automation of labor processes are growing trends. The ability to integrate and efficiently manage labor information through a single platform not only improves productivity and transparency but also ensures data integrity and accessibility. IT engineers play a key role in designing and developing systems that optimize these processes, adding value to both organizations and workers.*  *The project focuses on an organizational setting where the management of HR is crucial to operations. This organization typically employs a significant number of workers, each with different roles, shifts, and documentation needs, making manual or dispersed management inefficient and prone to errors. "Motowork" would be designed for initial implementation in a limited environment, with the possibility of adaptation for other areas if necessary.*  *The impact of this project is significant for both the employees and the HR department. For employees, it provides easier and more organized access to their personal and work documents, allowing them to manage their shifts and attendance more efficiently. For HR, the platform offers a comprehensive system to oversee and manage labor information, reducing the risk of errors, improving operational efficiency, and enabling better control and decision-making.*  *The value proposition is the creation of a digital solution that not only facilitates document and attendance management but also improves the employee experience within the company. By centralizing all information on an accessible platform, administrative burdens are reduced, transparency is increased, and a more organized and efficient work environment is promoted. In today’s labor context, where digitalization and operational efficiency are essential, this represents a significant advancement in comprehensive management.* |
| --- | --- |
| Descripción del Proyecto APT | ***1. Requirements Analysis:***   * *Gather requirements from both end users (workers) and the HR Department.* * *Identify all external platforms that need to be integrated with "Motowork" to provide direct links from the app.*   ***2. Solution Design:***   * *Design the user interface (UI) with a focus on usability and accessibility, ensuring that the platform is intuitive and easy to use.* * *Develop the application architecture, including the database that will store workers’ information and the specific modules for document management and shift control.*   ***3. Development and Implementation:***   * *Develop the application using appropriate technologies for mobile and web applications, ensuring data security and information integrity.* * *Integrate the application with the necessary external platforms so that workers can easily access all the tools they need from a single place.*   ***4. Testing and Validation:***   * *Conduct extensive testing of the application to ensure its proper functioning, identify potential errors, and make necessary corrections.* * *Validate the solution with a pilot group of users to ensure it meets the requirements and expectations before full implementation.*   ***5. Implementation and Training:***   * *Implement the solution within the company, ensuring a smooth transition from the current systems.* * *Provide training to end users and HR staff to ensure optimal use of the platform.*   ***6. Maintenance and Support:***   * *Establish a maintenance plan to ensure the application remains up-to-date and runs smoothly.* * *Offer continuous support to resolve any issues that may arise after implementation.*   *By implementing this project, the company is expected to significantly improve efficiency in document and shift management, reduce the time and effort spent on these tasks, and offer workers a more streamlined and organized experience with their workplace tools. This will contribute to a more orderly, transparent, and efficient work environment, benefiting both the workers and the organization as a whole.* |
| Pertinencia del proyecto con el perfil de egreso | *The graduate profile of the Computer Engineering program focuses on the ability to design, develop, implement, and manage technological solutions that address specific organizational needs. "Motowork" is a project that requires the practical application of these knowledge and skills, as it aims to solve a real problem in document and shift management within a company. This project not only demands technical skills but also a deep understanding of business processes and the ability to effectively integrate systems.* |
| Relación con los intereses profesionales | *The APT project closely aligns with my professional interests, which focus on IT project management and software development. Specifically:*  ***Software Development:*** *This project allows me to apply the knowledge I’ve acquired in system design and development, focusing on creating a technological solution to improve attendance management for both teaching and administrative staff. The opportunity to design and implement an integrated attendance management system directly addresses my interest in developing software that optimizes organizational processes.*  ***IT Project Management:*** *By leading the development of this system, I can apply project management methodologies, which is one of my professional areas of interest. This project provides the opportunity to plan, organize, and oversee all phases of the software development lifecycle, from requirements gathering to final implementation.*  ***Information Technology:*** *Integrating advanced technological tools such as biometric systems or QR codes into the proposed solution allows me to explore and implement innovative technologies in a real-world context, aligning with my interest in applying IT to improve organizational efficiency.*  *This project not only strengthens my technical and management skills but also provides relevant practical experience that will be valuable for my future career in the field of IT Engineering.* |
| Factibilidad de desarrollo del Proyecto APT | *To address the identified problem in managing attendance for teaching and administrative staff in a school context, the Scrum methodology will be used. This agile methodology is ideal for projects that require flexibility and adaptability, allowing us to continuously iterate and improve the solution as development progresses.*  ***Approach to the Problem with Scrum:***  ***Product Backlog Definition:*** *The process will begin with the creation of a Product Backlog, which will contain all the necessary features, functionalities, and improvements to develop the Integrated Attendance Management System. This backlog will be prioritized based on the importance of each item in achieving the project objectives.*  ***Sprint Planning:*** *The work will be divided into Sprints, which are work cycles of 2 to 3 weeks. At the start of each sprint, items from the Product Backlog that will be addressed during that period will be selected. Selection will be based on priority and the team's capacity to complete them within the sprint.*  ***Daily Standups (Daily Scrum):*** *Each day, a brief daily meeting, known as the Daily Scrum, will take place where team members will share what they did the previous day, what they plan to do that day, and any obstacles they are facing. This ensures that the team is aligned and any problems are addressed quickly.*  ***Incremental Development:*** *During each sprint, system increments will be developed that are fully functional and can be presented and evaluated by stakeholders. This incremental approach allows for constant feedback and necessary adjustments before continuing with the next sprint.*  ***Sprint Review and Retrospective:*** *At the end of each sprint, a Sprint Review will be held, where the completed work will be presented and feedback from stakeholders will be gathered. After the review, a Retrospective will take place to evaluate the sprint process, identify areas for improvement, and plan actions for the next sprint.*  ***Roles and Responsibilities:***   * ***Product Owner (Motorola Solutions Representative):*** *Responsible for defining the priorities of the Product Backlog and ensuring the project is always aligned with the client's needs and project objectives.* * ***Scrum Master:*** *Facilitates daily meetings, removes obstacles that the team may face, and ensures that the team follows agile Scrum practices.* * ***Development Team:*** *Consists of developers, testers, and designers responsible for the technical implementation of the project. Each team member is responsible for completing their assigned tasks during the sprint, collaborating closely to deliver a functional increment at the end of each cycle.*   ***Justification for Using Scrum:*** *Scrum is ideal for this project due to its focus on adaptability and the continuous delivery of value. Since requirements may evolve as the project progresses, Scrum's flexibility allows for adjusting priorities and solutions based on feedback received, ensuring that the final product meets the users' expectations and needs. Additionally, the sprint-based work structure ensures that the project stays within the established timelines, enabling the delivery of functional increments at each development phase.* |

1. **PARTE II**

| **4. Objetivos** |
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| 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. |

| Objetivo general | ***Develop an integrated application*** *for managing labor documents and employee shift control. This objective aims to create a technological tool that centralizes and optimizes the management of documents, shifts, and absences, facilitating access to information for both workers and the Labor Relations department.*  ***Improve operational efficiency*** *in Labor Relations management by integrating various platforms used by employees. This goal seeks to connect with other tools and systems within the company, offering a unified solution that simplifies administrative processes and enhances the user experience within the organization.* |
| --- | --- |
| Objetivos específicos | ***Analyze user and Labor Relations department requirements*** *to identify specific needs in document management, attendance, and digital platforms used by employees.*  ***Design the application architecture****, including modules for document management, shift control, and absenteeism, ensuring an intuitive and accessible interface for all users.*  ***Develop and implement the mobile application****, using appropriate technologies that guarantee data security, functionality, and efficient use.*  ***Integrate with existing platforms and systems****, allowing workers to access all necessary digital tools for their daily tasks from one central location.* |

| **5. Metodología** |
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| 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. |

| Descripción de la Metodología |
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| *To address the issue identified in managing attendance for teaching and administrative staff in a school context, the Scrum methodology will be used. This agile methodology is ideal for projects that require flexibility and adaptability, allowing us to iterate and continuously improve the solution as we progress through development.*  ***Approach to the Problem with Scrum:***  ***Definition of the Product Backlog:*** *The process will begin with the creation of a Product Backlog, which will contain all the features, functionalities, and improvements needed to develop the Integrated Attendance Management System. This backlog will be prioritized based on the importance of each item for meeting the project's objectives.*  ***Sprint Planning:*** *The work will be divided into Sprints, which are work cycles of 2 to 3 weeks. At the start of each sprint, the items from the Product Backlog that will be addressed during that period will be selected. The selection will be based on priority and the team's capacity to complete them within the sprint.*  ***Daily Meetings (Daily Scrum):*** *Each day, a brief daily meeting, known as Daily Scrum, will be held where team members will share what they did the previous day, what they plan to do that day, and any obstacles they are facing. This ensures that the team is aligned and that any issues are addressed quickly.*  ***Incremental Development:*** *During each sprint, increments of the system will be developed that are fully functional and can be presented and evaluated by stakeholders. This incremental approach allows for constant feedback and necessary adjustments before moving on to the next sprint.*  ***Sprint Review and Retrospective:*** *At the end of each sprint, a Sprint Review will be held where the completed work will be presented and feedback will be gathered from stakeholders. After the review, a Retrospective will be conducted to assess the sprint process, identify areas for improvement, and plan actions for the next sprint.*  ***Roles and Responsibilities:***   * ***Product Owner (Motorola Solutions Representative):*** *Responsible for defining the priorities of the Product Backlog and ensuring that the project is always aligned with the client's needs and the project's objectives.* * ***Scrum Master:*** *Responsible for facilitating daily meetings, removing obstacles the team may face, and ensuring that the team follows Scrum's agile practices.* |

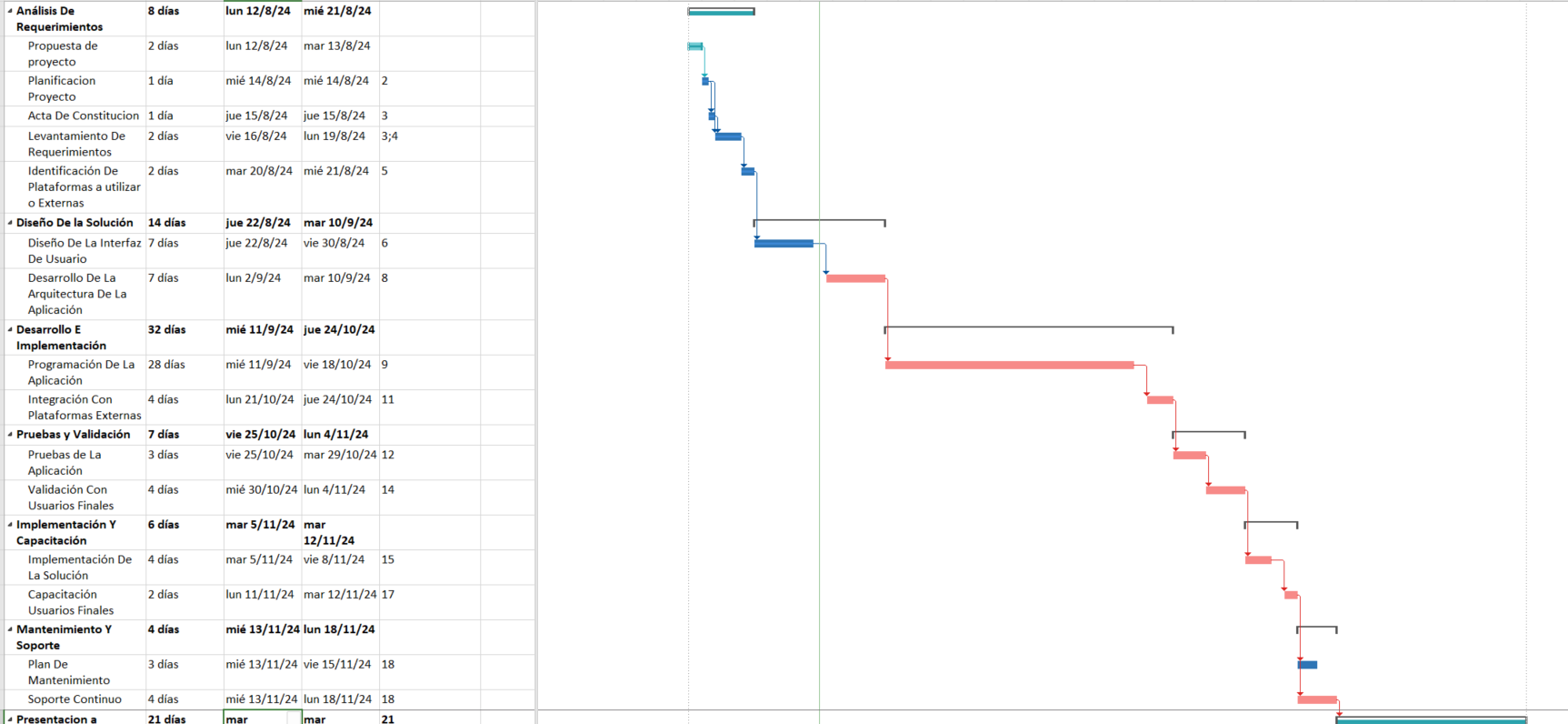
| **6. Evidencias** |
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| A continuación, describe qué evidencias serán evaluadas en el informe de avance y en el informe final de tu proyecto APT. Estas evidencias deben ser acordadas con tu docente. Se entenderá por evidencia los productos que se desarrollen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

| **Tipo de evidencia**  **(Avance o Final)** | **Nombre de la evidencia** | **Descripción** | **Justificación** |
| --- | --- | --- | --- |
| **Progress** | **Technical**  **Report** | This report will explain the entire procedure carried out to develop the project, from gathering requirements to the final product of the application to be developed. | The technical report is mandatory for having the final documentation. |
| **Progress** | **GitHub Backup** | This GitHub backup will include the respective files used for developing the mobile application, including structure files, functionalities, aesthetics, databases, and more. | The GitHub backup is necessary for version control and conducting necessary functionality tests. |
| **Final** | **Motowork App** | The functional app will be the main evidence that the entire project procedure was completed successfully. | The application is the project to be developed and serves as the primary evidence of all the progress made. |

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

| **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-0)** | **Observaciones** |
| IT Project Management | Requirements Analysis | Conduct the gathering of requirements from both end-users and the HR department. | Interview tools, documentation software | 8 days | Felipe González, José Pinchi | There may be difficulties in obtaining precise information from users; it is suggested to conduct multiple interview sessions. |
| IT Project Management | Project Proposal | Propose project ideas by identifying corporate or everyday problems. | Observation of the environment and problem identification. | 2 days | Felipe González, José Pinchi, Javier Bastias | The proposal must address a problem that will have an impact through its development. |
| IT Project Management | Project Planning | Plan how the activities will be carried out to meet the project objectives within the available time. | Shared platforms among team members, such as Drive or GitHub. | 1 day | Felipe González, José Pinchi, Javier Bastias | Documents requiring external project information will be requested from the organization. |
| IT Project Management | Project Charter | Meetings with the client or stakeholders to determine project requirements. | Platforms for conducting meetings, such as Meet or Teams. | 1 day | Felipe González, José Pinchi, Javier Bastias | The document will be completed in collaboration with the organization to ensure all information regarding the project and its requirements is clear. |
| IT Project Management | Requirements Gathering | Obtain a detailed description of the requirements requested by the client. | Development platforms according to the desired platform. | 2 days | Felipe González, José Pinchi, Javier Bastias | The platform used will depend on the platform required for the solution. |
| IT Project Management | Identification of Platforms to Use | Identify development platforms and organizational platforms or integrations that need to be implemented in the solution. | Development and organizational platforms. | 2 days | Felipe González, José Pinchi, Javier Bastias | If there are internal systems within the company, that information must be incorporated into the solution. |
| *Software Development* | User Interface Design | Design an intuitive and accessible user interface for all system users. | UI design tools (Figma, Sketch). | 7 days | Javier Bastías | User preferences may vary, which could require multiple iterations in the design. |
| *System Architecture* | Application Architecture Development | Develop the base structure of the application, including the database and specific modules. | Development IDE, database management systems. | 7 days | Felipe González | Ensuring the scalability of the architecture could be challenging; special attention should be paid to the integration of future systems. |
| *Integración de Sistemas* | Programación de la Aplicación | Codificar la aplicación siguiendo las especificaciones de diseño y asegurar la funcionalidad integral. | Entorno de desarrollo, frameworks de seguridad | 28 days | José Pinchi | Development must consider data security from the start; potential technical challenges may arise when integrating with external platforms. |
| *Software Testing* | Application Testing | Conduct thorough tests to ensure the proper functioning of the application and fix any errors. | Testing tools, testing team. | 3 days | Javier Bastías | Unexpected errors may occur during integration testing; it is recommended to conduct early-phase testing to identify critical issues. |
| *User Validation* | Validation with End Users | Validate the solution with a group of pilot users to ensure it meets the requirements. | Pilot users, feedback tools. | 4 days | Felipe González | User feedback may require rapid adjustments; flexibility in planning is crucial for making immediate improvements. |
| *System Implementation* | Solution Implementation | IImplement the solution within the company, ensuring a smooth transition from the current systems. | IT teams, servers, documentation. | 4 days | José Pinchi | Data migration could be complex; a complete backup should be performed before implementation. |
| *Training and Support* | End-User Training | Provide training to end-users to ensure optimal use of the platform. | User manuals, training sessions. | 2 days | Javier Bastías | Resistance to change might be an obstacle; follow-up sessions are suggested to address any subsequent questions. |
| *Technical Support and Maintenance* | Maintenance and Support | Establish a maintenance plan and offer ongoing support post-implementation. | Support team, ticketing system. | 7 days | Felipe González, José Pinchi | Technical issues may arise after implementation; an active support team is needed to resolve incidents quickly. |
| *IT Project Management* | Presentation to Commission | Present the completed project to the organization and the portfolio committee. | Final system and audiovisual presentation of the solution or its respective demo on the agreed platform. | 21 days | Felipe González, José Pinchi, Javier Bastias | In the final weeks before the presentation to the committee, the system must be corrected based on feedback from the organization. |

| **8. Carta Gantt** |
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| 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. |



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-0)