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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 | **Enrique Vargas – Felipe Cáceres** |
| --- | --- |
| Rut | **21.180.968-K – 19.095.839-6** |
| Carrera | **Computer Engineering** |
| 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 | **PCTweezers** |
| --- | --- |
| Área (s) de desempeño(s) | Software and Mobile Application Development (Angular and Ionic) Customer Service and Technical Support IT Project Management |
| Competencias | Develop a software solution that streamlines the connection between users with computer issues and available technicians, ensuring efficient and high-quality service.  Design data models that support the application's requirements, ensuring scalability and robustness.  Conduct certification testing of the application, employing best practices to ensure software quality and user satisfaction. |

| **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 situation addressed involves developing a mobile and web application that allows users to schedule appointments with specialized technicians for the repair of computers and laptops that have suffered unexpected damage, such as malfunctions or liquid spills. This project is relevant to Computer Engineering because it enhances the accessibility and quality of technical services, contributing to greater efficiency in solving IT problems in a digital context. * The project is based in the commune of Maipú, located in the Metropolitan Region of Santiago, Chile. Maipú is one of the most densely populated communes in the region, with a large number of residences and businesses. The commune is characterized by its urban growth and diversity of services, which generates high demand for technical support for electronic devices. Additionally, Maipú has an extensive transportation network and accessibility, making it easier for technicians and users to move around within the commune. * The situation addressed by the project impacts various groups, including individual users who rely on computers and laptops for personal, academic, and professional activities, as well as professionals and students who depend on these devices for their productivity. It also affects small and medium-sized businesses that need to keep their devices operational for their daily activities. Furthermore, the project benefits repair technicians by providing them with a platform to expand their clientele and improve their market visibility. * The value contribution of the project lies in improving the efficiency of device repairs. The application facilitates quick access to qualified technicians, reducing the downtime of damaged equipment and increasing the productivity of users and businesses. Additionally, it offers technicians a platform to expand their clientele and improve their visibility, thereby optimizing the quality of technical support and contributing to more effective management of technological resources in the community. |
| --- | --- |
| Descripción del Proyecto APT | Build a system that improves the management and accessibility of computer and laptop repair services. The system is expected to meet the following high-level requirements:  **Internal Use (Technicians and Administrators):**   * Manage technician profiles, including personal information, skills, and experience. * Administer repair requests, allowing tasks to be accepted, rejected, or reassigned. * Schedule and track appointments and ongoing work. * Manage service history and customer records. * Receive and manage customer feedback and ratings to improve service quality. * Send notifications about new requests and service updates.   **Public Use (Clients):**   * Register and manage user profiles. * Request repair services by specifying the type of issue and device details. * Schedule appointments with available technicians based on location and availability. * Track the status of the request and repair progress in real time. * Provide ratings and feedback on the service received. * Access history of previous requests and services. * Receive notifications about request status and special promotions.   The system will be developed as a mobile application and a responsive web platform, both connected to a centralized database that ensures synchronization and real-time availability of information. |
| Pertinencia del proyecto con el perfil de egreso | The APT project directly aligns with the graduate profile of the Computer Engineering program, which emphasizes the ability to develop innovative and efficient technological solutions for specific problems. Building a mobile app that connects users with qualified technicians in IT emergencies requires advanced skills in software development, project management, and requirements analysis, which are fundamental competencies in the graduate profile.  The selected competencies, such as the ability to develop mobile applications and manage IT projects, are essential for addressing the problem at hand. The app must not only function correctly from a technical standpoint but also provide an intuitive and effective user experience, aligning with the program's objective of training professionals capable of delivering high-impact technological solutions. |
| Relación con los intereses profesionales | With this project, I will be able to apply my skills in software development (mobile applications) and move closer to my goal of being hired by a multinational company as a web developer. This project contributes to my professional development by providing practical experience in creating a real technological solution. Additionally, it will enrich my portfolio with a concrete example of my work.  This project will help me expand my knowledge in the area of development, as it is of great interest to me, and it will be useful for recalling learnings. |
| Factibilidad de desarrollo del Proyecto APT | The development of my APT project is feasible due to several key factors. The academic semester lasts 18 weeks, from August 12 to November 27, and there are 6 hours of assigned work every Wednesday, except for the holiday on September 18. This provides a total of 102 effective hours for project development.  Required materials include software development tools, cloud hosting services, and testing devices. External factors that facilitate development include access to modern technologies, educational resources from the university, and the team's previous experience in software development.   * Semester duration: The semester extends from August 12 to November 27, providing 18 weeks for project development. * Hours assigned to the subject: 6 work hours are available each Wednesday, totaling 108 effective hours for project development, considering that September 18 is a holiday. * Required materials: Software development tools, cloud hosting services, and testing devices. * External factors that facilitate development: Access to modern technologies, university educational resources, and the team's previous experience in software development. * External factors that hinder development and ways to address them: The holiday on September 18 may reduce available time. To address this, additional work sessions will be planned, and project management tools will be employed to maintain project progress. |

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 a mobile application that allows users to manage and resolve issues related to their computers, such as technical failures or physical damage, by scheduling appointments with specialized technicians. The application will provide a platform for selecting technicians with good ratings, facilitating appointment scheduling, and communication between users and technicians. This goal aims to improve accessibility to technology repair services and optimize the process of resolving IT issues for users. |
| --- | --- |
| Objetivos específicos | 1. **Achieve at least 4 stars on Google Play:** Ensure that the application meets high standards of quality and user satisfaction. 2. **Register 7 technicians by the end of the project:** Reach a minimum of 10 registered and active technicians on the platform by the end of the project. 3. **Publish the application on Google Play:** Complete the development and testing cycle so that the application is available on major app stores, including Google Play. 4. **Reach 20 downloads in the first week of launch:** Achieve at least 50 downloads during the first week of the application's availability on the App Store and Google Play. |

| **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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| ***My plan is to use the Agile methodology (Scrum) to develop the mobile application that connects users with computer repair technicians. This flexible approach will allow us to adapt to changes and continuously improve the product.***  ***Stages and Methods of Work:***  ***Initial Planning:***   * *Define requirements and functionalities.* * *Research the market to adjust the product to user needs.*   ***Design:***   * *Create the application's architecture.* * *Develop prototypes and wireframes to visualize the interface.*   ***Development:***   * *Implement functionalities in short sprints (2-4 weeks).* * *Divide the work between backend and frontend development.*   ***Testing:***   * *Perform unit and integration tests.* * *Test with real users to gather feedback.*   ***Deployment:***   * *Prepare the application for launch in app stores.* * *Implement a basic marketing strategy.*   ***Maintenance and Continuous Improvement:***   * *Monitor performance and resolve issues.* * *Implement improvements based on user feedback.*   ***Team Responsibilities:***   * ***Backend Developer:*** *Designs and develops the server, databases, and APIs.* * ***Frontend Developer:*** *Implements the user interface and customer experience.* * ***UX/UI Design:*** *Both collaborate on visual design and prototypes.* * ***Project Management:*** *Coordinates the project, manages the schedule, and ensures objectives are met.* |

| **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** | | APT Project Definition Document | | --- | | Development of a mobile application that connects users with computer repair technicians, similar to Uber, for requesting technical services quickly and reliably. | The growing demand for computer technical support requires an efficient solution. This application will facilitate the connection between users and technicians, improving access to quality services and creating job opportunities.. |
| Systems | Angular and Ionic | Angular and Ionic will be used to develop the mobile app, combining a robust web framework with a hybrid platform adaptable to iOS and Android. | Angular facilitates efficient and scalable development, while Ionic allows for rapid deployment across multiple platforms with a single codebase. |
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| **7. Plan de Trabajo** |
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| En la siguiente tabla define la planificación de tu Proyecto APT de acuerdo a lo requerido. |

| **Competencia o Unidades de Competencias** | **Nombre de Actividades/Tarea** | **Descripción Actividades/Tareas** | **Recursos** | **Duración de la Actividad** | **Responsable** | **Observaciones** |
| --- | --- | --- | --- | --- | --- | --- |
| **Analyze and propose IT solutions** | **Requirements Analysis** | **Identify and document the needs and requirements of the application.** | **Analysis tools, documentation** | **1 week** | **Enrique Vargas** | **Make sure to gather all client requirements.** |
| **Manage IT projects** | **Project Planning** | **Define the project structure, establish milestones, and assign tasks.** | **Planning tools, project management software** | **1 week** | **Enrique Vargas, Felipe Cáceres** | **Include periodic reviews of the plan.** |
| **Design and build data models and systemic solutions** | **User Interface (UI) Design** | **Create sketches and prototypes of the application's user interface.** | **Graphic design software and prototyping tools** | **2 weeks** | **Felipe Cáceres** | **Consider usability and accessibility in the design.** |
| **Design and build data models and systemic solutions** | **System Architecture** | **Design the application's architecture, including the structure of components and the database.** | **Software design tools, UML diagrams** | **2 weeks** | **Enrique Vargas** | **Validate the architecture against the required functionalities.** |
| **Develop software and database solutions** | **Development Environment Setup** | **Configure the development environment for Ionic and Angular, and prepare the necessary tools.** | **IDE, Ionic, Angular, Firebase** | **1 week** | **Enrique Vargas** | **Ensure that the entire team has the same development environment.** |
| **Develop software and database solutions** | **Implementation of the Scheduling Functionality** | **Implement the main functionalities, such as the scheduling system and technician management.** | **IDE, programming tools, Firebase** | **3 weeks** | **Enrique Vargas** | **Coordinate with Felipe for the integration of functionalities** |
| **Develop software and database solutions** | **Implementation of Authentication and Database** | **Configure authentication for users and technicians, and develop the database in Firebase.** | **Firebase Auth, Firebase Firestore, AngularFire** | **3 weeks** | **Enrique Vargas** | **Conduct security testing and ensure data integrity** |
| **Develop software and database solutions** | **Integration of Maps with OpenStreetMap** | **Integrate OpenStreetMap to display the location of technicians** | **OpenStreetMap API, Angular** | **2 weeks** | **Felipe Cáceres** | **Ensure the accuracy and optimization of the map** |
| **Develop software and database solutions** | **Development of the Rating System.** | **Implement a rating system for users to rate technicians** | **IDE, Firebase, Angular** | **2 weeks** | **Enrique Vargas** | **Ensure that ratings are stored correctly** |
| **Perform software testing** | **Unit and Integration Testing** | **Conduct unit and integration testing of all implemented functionalities** | **Testing tools, Selenium** | **2 weeks** | **Enrique Vargas, Felipe Cáceres** | **Document the results of the tests** |
| **Perform software testing** | **Usability Testing** | **Conduct testing with real users to evaluate usability and make adjustments** | **Testing tools, test users** | **1 week** | **Felipe Cáceres** | **Implement improvements based on feedback** |
| **Implement comprehensive systemic solutions** | **Preparation for Deployment** | **Configure Firebase Hosting and prepare the application for deployment** | **Firebase Hosting, Ionic, Angular** | **1 week** | **Enrique Vargas** | **Ensure that the application is optimized for both web and mobile** |
| **Implement comprehensive systemic solutions** | **Deployment and Launch** | **Deploy the application and launch it on the appropriate platform.** | **Firebase Hosting** | **1 week** | **Enrique Vargas, Felipe Cáceres** | **Monitor the launch and address any potential issues** |
| **Manage IT projects** | **Post-Launch Support** | **Provide support to resolve issues and make improvements post-launch** | **Support tools, issue tracking software** | **2 weeks** | **Enrique Vargas, Felipe Cáceres** | **Document all issues and solutions** |

| **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. |

| **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** |
| ***Requirements Analysis*** | **x** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Project Planning** |  | **x** |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **User Interface (UI) Design** |  |  | **x** | **x** |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **System Architecture** |  |  |  |  | **x** | **x** |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Development Environment Configuration** |  |  |  |  |  |  | **x** |  |  |  |  |  |  |  |  |  | |  |  |
| **Implementation of Scheduling Functionality** |  |  |  |  |  |  |  | **x** | **x** | **x** |  |  |  |  |  |  | |  |  |
| **Implementation of Authentication and Database** |  |  |  |  |  |  |  |  |  |  | **x** | **x** | **x** |  |  |  | |  |  |
| **Integration of Maps with OpenStreetMap** |  |  |  |  |  |  |  |  |  |  |  |  |  | **x** | **x** |  | |  |  |
| **Development of the Rating System** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **x** | |  |  |
| **Unit and Integration Testing** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | **x** |  |
| **Usability Testing** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | **x** |
| **Deployment Preparation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | **x** |
| **Deployment and Post-Launch Support** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | **x** |