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1. **PART I**

| **1. Personal Backgrounds** |
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| Below is a table in which you must complete the requested information. |

| Students Names | Jairo Álvarez ; Francisco López ; Constanza Painevilo ; Bastián Rodríguez |
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| Rut | 21.055.328-2 ; 20.883.087-2 ; 19.561.395-8 ; 20.526.431-0 |
| Career | Informatics Engineering |
| Campus | San Joaquín |

| **2. Project APT Description** |
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| In the description you should briefly indicate the name of your APT project and the competencies of the graduate profile that you will put into practice. If the areas of performance are defined in your degree, also mention which areas of performance are linked to the project. |

| Project Name | Professional Services Management and Scheduling Platform |
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| Expertise Areas | IT project management, analysis and planning of IT requirements, software architecture, web/mobile programming and development, data modeling and management, software quality. |
| Competences | Effective communication, professional ethics, technical English. |

| **3. APT Project Justification** |
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| Below are various fields that you must complete with the requested information. This section seeks to describe your project in detail and justify its relevance and pertinence. |

| APT Project Relevance | **APT Project Definition:**  The project "Professional Services Management and Scheduling Platform" arises in response to **the lack of a centralized platform for service offerings** and the **fragmentation of the channels** through which services are currently promoted to clients. Currently, there is no effective platform that manages to centralize and unify service offerings in one place. Companies use a variety of means, such as social media, individual websites, general marketplaces, and traditional advertising channels, creating an **inconsistent experience for clients**. This makes it difficult to **search, quote, and compare services** according to users' needs quickly and transparently.  In the field of computer engineering, this project is particularly relevant as it focuses on the development of a robust and scalable **mobile application** that responds to a real and current market need. The development process involves applying key competencies such as **software development for mobile platforms, systems architecture, information security, user experience (UX), and project management**. These are essential skills within the career, reinforcing the relevance of the project in the professional field. Additionally, the growing trend toward the digitalization of services through mobile applications makes this project a highly relevant solution for the current market context.  The problem addressed by the project has a global scope, but it will initially focus on Latin America, especially **Chile**, where many **professionals working independently or aspiring to do so face significant challenges in standing out in a fragmented digital environment**. The wide variety of platforms available for offering and promoting services makes it difficult for clients to reliably and efficiently identify, filter, and compare options. This negatively impacts both the visibility and operation of independent workers, who depend on more efficient channels to manage their market presence and attract new clients.  **Project Impact:**   * **Affected Users:** This project will benefit both **clients of all ages and profiles** who seek services more efficiently, as well as **independent professionals** and those looking to start their own business. These workers face the challenge of increasing their visibility in a competitive and fragmented market, and this platform will allow them to **optimize the management of their operations** and attract new clients more effectively. * **Value Proposition:** This project will provide **significant value** to both **clients** and **independent professionals** offering their services. For clients, it centralizes and simplifies the search, quoting, and comparison of services, allowing them to access a single platform where they can **filter and select** options according to their needs and preferences. The transparency of information and the ease of finding the right service will enhance their overall experience.   On the other hand, **independent professionals** offering services will greatly benefit from the platform, as it will allow them to **increase their visibility** and manage their operations more efficiently. Additionally, as an added value, an **appointment management system** will be implemented, allowing professionals to optimally coordinate their schedules, improving interaction with clients and streamlining the booking and service process. This system will enable them to manage their time effectively, avoid scheduling conflicts, and improve client satisfaction.  Together, this project optimizes both client time and service provider operations, providing a **comprehensive platform** that contributes to **competitiveness, operational efficiency, and satisfaction** in the independent services sector.  **The technological innovation represented by "\*\*\*"** is a key contribution to the **service sector** economy, offering a unique opportunity to significantly improve **competitiveness**, **operational efficiency**, and **customer satisfaction** in an increasingly dynamic and demanding market. |
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| APT Project Description | **Project Objective:**  The main objective of the project "Professional Services Management and Scheduling Platform" is to **centralize and simplify** the offering and promotion of services through a **robust and scalable mobile application**. It aims to make it easier for both clients and independent professionals to **search, quote, and manage services** efficiently, reliably, and transparently. The platform is expected to unify promotional channels and provide advanced tools for **appointment management** and **service visibility**, enhancing **competitiveness** and **customer satisfaction** in the independent services sector.  **Project Description:**  The project involves developing a **mobile application** designed to **centralize the service offerings** of independent professionals and entrepreneurs in one place. This platform will allow users to search, compare, and book services based on their specific needs through an advanced **filtering system** and **transparent information**. On the other hand, professionals offering services will be able to efficiently **manage their schedules** thanks to an **appointment management system** that optimizes their time and facilitates interaction with clients.  **Approach to the Problem:**  To address the **fragmentation of promotional channels** and the lack of **centralized services**, the project will use a **comprehensive approach that combines mobile software development, system architecture, and user experience (UX)**, with a special focus on **optimizing processes** and **efficiently managing** the professionals who use the platform. Functionalities will be developed that allow users to perform **quick and filtered searches**, while offering service providers tools to improve their **visibility and operational organization**.  Additionally, the platform will incorporate **information security elements** to protect user and provider data, ensuring that interactions within the application are safe and trustworthy. In this way, the project aims to positively impact the **digital economy** of the services sector by optimizing both the customer experience and the operation of independent professionals. |
| Relevance of the Project to the Graduation Profile | The project **"Professional Services Management and Scheduling Platform"** *is directly related to t****he graduation profile of the Informatics Engineering*** *program, which focuses on the* ***development, implementation, and deployment of innovative technological solutions*** *that address the needs of the environment by solving complex problems in the professional specialization area. This project applies various key competencies from the graduation profile, all essential for achieving the project's objectives and addressing the presented issue. The most relevant competencies for the project are:*   1. **Software and Application Development:** This competency is fundamental for developing the **mobile application** that will serve as the primary solution to the problem. Knowledge of **programming, system architecture, and software design** will be applied to ensure that the platform is **scalable, efficient**, and capable of handling multiple users and services simultaneously. 2. **User Interface Design (UX/UI):** **The design of the user interface** is essential to ensure a user-friendly and intuitive experience for both clients and service providers. **UX/UI principles** will be used to assess user needs and design a platform that facilitates navigation and simplifies interaction, ensuring an optimal experience from the first use. 3. **Databases:** Managing **large amounts of data** is a crucial part of the project, as the platform will handle information from both users and service providers. Advanced **database management** knowledge will be applied, including optimization, security, and scalability, to ensure that the information is managed effectively and reliably within the unifying system. 4. **Technology Integration:** To develop a robust platform, it will be necessary to integrate various **technologies and systems**, ensuring interoperability between them. This competency is key to achieving the effective implementation of different technological tools, optimizing the project's overall functionality, and ensuring that the application can easily integrate with other existing systems. 5. **Project Management:** **Managing the** **scope, time, and quality** of the project will be crucial to ensuring that the objectives are met within the established timeframe and with the required quality level. This competency will be applied in planning, coordinating, and monitoring tasks, allowing the project to progress as expected and ensuring that deliverables are completed within the set deadlines. 6. **Information Security and Data Protection:** Since the project handles **sensitive data** from both clients and service providers, it is essential to apply competencies in **information security**. This includes the **protection of personal data** and the implementation of robust security measures to prevent unauthorized access and ensure **data confidentiality**, which is fundamental to building user trust and ensuring the platform's success. |
| Relation to Professional Interests | The proposed **APT project** aligns with the **professional interests** of the team, which include **technological project management**, **software development**, and **process optimization** in a **digital transformation** environment. Each of these interests is reflected in the structure and objectives of the project, allowing the team to apply key knowledge and develop essential competencies in these areas.   1. **Technological Project Management:** The project requires effective planning, coordination, and execution, which are fundamental areas in **technological project management**. The team will be able to apply agile methodologies, manage work teams, and ensure that deadlines and objectives are met. These skills are essential in a professional environment where **efficient project management** is key to the successful implementation of technological solutions. The team will strengthen its ability to lead large-scale projects in the future. 2. **Software Development:** In the development of the **APT project**, the team focuses on creating a **centralized, scalable, and secure technological platform**, which requires applying knowledge in **programming, software architecture, and user experience design (UX/UI)**. These areas are crucial for any team seeking to deepen their expertise in **developing innovative technological solutions** that optimize interaction between service providers and clients in a competitive digital environment. 3. **Technological Innovation:** The project is designed to address a key issue in the current market: the **digital fragmentation** of service promotion and management channels. By developing a unified platform that improves the **operational efficiency** of independent professionals, the team contributes to **digital transformation** and **process optimization**. This approach is fundamental for those seeking to implement continuous improvements and innovative technologies that enhance the performance and competitiveness of digital services.  **Contribution of the APT Project to the Team's Professional Development** Carrying out this APT Project will allow the team to develop key competencies that will be of great value in their future professional careers. Efficient project management, the creation of innovative technological solutions, and process optimization are areas that will strengthen the team's ability to tackle complex challenges in an increasingly technological and dynamic work environment. Through this project, the team will not only apply their current knowledge but also gain practical experience in implementing a real-world solution. |
| APT Project Feasibility of Developing | The project is fully feasible to develop within the academic semester, considering the **duration of the semester**, the **allocated hours**, the **materials**, **tools**, **and technologies required**, as well as **external factors** that may influence its development. The following are the key elements that ensure the project's viability.   1. **Semester Duration**   The project is viable within the 15-week period established by the institution. During the first **4 weeks**, time will be dedicated to **defining the project**, **scope, architecture, and development methodology**. This includes detailed task planning and identifying potential technical challenges.  **The remaining 11 weeks** will focus on the **design, development, and implementation** of the system, as well as conducting **tests and quality evaluations**. This distribution ensures that each project phase receives the necessary time for completion, and adjustments can be made if unforeseen challenges arise during development.   1. **Hours Allocated to the Course**   An average of **4 daily hours per team member** is estimated, resulting in **20 weekly hours per person**. With a team of 4 people, this totals **80 weekly hours for the team**.  Over the **15 weeks**, this accumulates to a total of **1,200 work hours** for the entire team. This time is sufficient to tackle the project's main phases: from planning and design to implementation and final testing. Thanks to the clear assignment of responsibilities and tasks within the team, time can be optimized to meet the **defined system scope** within the agreed-upon deadlines.   1. **Materials, Tools, and Technologies Required**   The **technologies and tools** considered for development do not represent a significant cost for the team, as many of them are freely accessible or available under student licenses. These include:   * **Mobile software development tools: Android Studio and Visual Studio Code.** * **Database platforms: Firebase and MySQL**, which are scalable and free in their initial version. * **UX/UI design tools like Figma** for creating intuitive user interfaces. * **Collaborative code repositories** like **GitHub** for version control and project management remotely.   The only potential cost could be the investment in a **hosting server** for deploying the system in production, which is manageable within the available resources.   1. **External Factors Facilitating Development** 2. **Access to Information:** The team has wide access to online resources, technical documentation, and development forums that will facilitate system construction. 3. **Availability of Users for Testing:** **Potential users** are available to conduct usability tests and user experience surveys, providing valuable feedback in the early stages of development. This will be key to adjusting the design and improving the user interface. 4. **Remote Collaboration and Agile Tools:** The use of cloud-based development and collaboration platforms, such as **Trello** and other project management tools, enables **smooth communication**, **real-time task tracking**, and **clear assignment of responsibilities**. These platforms facilitate **efficient team coordination**. 5. **External Factors Hindering Development** 6. **Diversity of Services:** The **wide variety of services** available in the market may make it challenging to develop a system that perfectly adapts to all sectors. However, this difficulty can be mitigated by implementing a **flexible development framework** and **defining a well-scoped** focus from the start, concentrating on a limited number of service categories for the initial launch. This will allow addressing the problem without significantly extending the development time. 7. **Time Constraints:** Despite detailed planning, **unforeseen challenges** such as technical difficulties or last-minute adjustments could affect project progress. To address this, **intermediate milestones** will be set, and the fulfillment of key tasks will be gradually prioritized, ensuring that the most critical deliverables are completed within the stipulated time. |

1. **PART II**

| **4. Objectives** |
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| In this section you must define the general and specific objectives of the APT Project. It is important to clarify that the objectives must be stated clearly, concisely and without giving further explanations, that is, they must be understood by themselves. It is suggested to write them using a verb in the infinitive, since this requires specifying specific actions. |

| General Objective | The **general objective** of the project is to develop a centralized mobile application that optimizes the interaction between independent professionals and their clients, facilitating the search, comparison, and booking of services. This platform will allow professionals to manage their services efficiently, increase their market visibility, and improve the user experience by offering a unified solution that simplifies access to a wide range of services. At the end of the project, the application will be evaluated to determine whether it successfully centralizes service offerings, improves operational efficiency, and increases customer satisfaction, in comparison to the initial plans. |
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| Specific Objectives | The following are the main components to be developed for the implementation of the project:   1. **Implement a secure authentication system** that allows independent professionals and clients to create, manage, and protect their accounts within the platform, using advanced security measures to ensure data confidentiality and privacy. 2. **Design an intuitive and accessible user interface (UX/UI)** that facilitates navigation for both clients and professionals, ensuring a smooth and satisfying experience. 3. **Develop a service management module** that allows professionals to efficiently publish, update, and delete their service offerings, including detailed information such as prices, location, availability, and key service features. 4. **Integrate an advanced search and filtering engine**, enabling clients to find services quickly and accurately, using criteria such as location, type of service, price range, and availability. 5. **Create a booking and scheduling system** that facilitates interaction between clients and service providers, allowing automatic appointment confirmations, tracking of scheduled services, and reminder notifications for both parties. |

| **5. Methodology** |
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| In the following section you must describe the methodology, specific to your discipline, that you will use to solve the APT project described above, including the stages and work methods. |

| Methodology Description |
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| **The methodology chosen by the team is Scrum**, an agile methodology widely used in software development projects due to its flexibility and ability to adapt to changes throughout the process. Scrum allows for the division of work into iterative cycles, called sprints, facilitating continuous progress tracking, constant feedback, and gradual delivery of functional product increments. Below are the phases and work methods that will be implemented to ensure the project's success. **Project Phases**  1. **Initial Planning (Weeks 1 to 4)**  * **Scope Definition:** During this phase, the full scope of the project will be identified, including functional and non-functional requirements. The key features of the platform will be defined, and an analysis of the most suitable technological architecture will be carried out. * **Role and Responsibility Assignment:** Each team member will have a specific role and associated tasks to meet the project’s objectives. * **Product Backlog Preparation:** A backlog will be created, listing all necessary functionalities prioritized based on their importance and interdependencies for the project.  1. **Architecture and Design Development (Weeks 4 to 6)**  * **User Interface Design (UX/UI):** The team will work on the visual and interaction design of the platform, ensuring a smooth and accessible user experience. * **System Architecture Design:** At this stage, the system architecture will be developed, including the database structure and the definition of front-end and back-end components.  1. **Development and Iterative Sprints (Weeks 6 to 13)**  * **Modular System Development:** The team will work in 2-week sprints to develop the various system modules (authentication, service management, search and filtering, appointment booking). * **Sprint Reviews:** At the end of each sprint, progress will be reviewed, and tasks will be adjusted for the next cycle, ensuring the delivery of a functional and tested product in each iteration. * **Testing and Functionality Adjustments:** During this phase, internal tests will be conducted to verify the correct functioning of each module before final integration.  1. **Integration and Final Testing (Weeks 13 to 14)**  * **Module Integration:** Upon completing the development of individual modules, they will be integrated into a unified system, and integrated functionality tests will be performed. * **Quality and Usability Testing:** Quality and user experience tests will be conducted with real users, evaluating the system’s effectiveness and its ability to solve the identified problem. * **Final Product Delivery:** The fully functional system will be delivered along with its technical documentation.  1. **Project Closure (Weeks 14 to 15)**  * **Final System Review:** Verification that all planned requirements and functionalities have been implemented and are functioning correctly. * **Complete Documentation Preparation:** The system’s technical documentation will be prepared. * **Product Backlog Closure:** The product backlog will be updated to mark all completed functionalities, and possible future improvements will be evaluated. * **Final Presentation:** The team will prepare and deliver an executive presentation to the stakeholders, showcasing the results obtained, the project’s impact, and key success metrics. This will include the results of quality and usability tests. * **System Delivery:** The fully functional system will be delivered, marking the end of the project development cycle. |

| **6. Evidence** |
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| In the following section, describe what evidence will be assessed in the progress report and the final report of your APT project. This evidence must be agreed upon with your teacher. Evidence will be understood as the products developed during the project and whose purpose is to make visible or document how the work has been implemented. |

| **Type of Evidence** | **Evidence Name** | **Description** | **Justification** |
| --- | --- | --- | --- |
| Progress | Competency Self-Assessment | Document where each team member evaluates their achievement level in the graduation profile competencies. | Reflects the level of development of skills and knowledge acquired during the project. |
| Progress | Reflection Diary | Individual reflection on the learning process and participation in the project's development. | Documents personal and group progress and challenges, allowing adjustments to the project’s execution. |
| Progress | Phase 1 APT Project Definition | Document presenting the initial project idea, including objectives, context, and the problem to be solved. | It is essential to establish the project’s vision from the start and align the team with the set objectives. |
| Progress | UX/UI Prototype | Interactive prototype of the user interface that shows the platform’s structure and navigation flow. | This evidence is important to validate the design before starting the development of the user interface. |
| Progress | Product Backlog | Prioritized list of all system functionalities, including necessary improvements and corrections. | The backlog helps organize the work in sprints and track progress. |
| Progress | Phase 2 Project Development | Document detailing the technical development of the project, including the implementation of key modules. | Evaluates technical progress in system implementation and functionality integration. |
| Progress | Phase 2 APT Project Final Report | Document summarizing the project’s status halfway through the second phase, reflecting progress and areas for improvement. | A critical review of the progress made up to the second phase of the project, allowing for final adjustments. |
| Final | Functional Application | Final mobile application that enables user authentication, service search, and appointment booking. | Demonstrates the fulfillment of the project's general objective by presenting an operational and functional system. |
| Final | Final Presentation | Presentation of the project with the obtained results, highlighting the achievement of objectives and the impact of the solution. | Reflects the complete project process, from conception to implementation and evaluation of final results. |

| **7. Work Plan** |
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| In the following table, define the planning of your APT Project according to what is required. |

| **APT Project Work Plan** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Competency or Units of Competencies** | **Activity/Task Name** | **Description of Activities/Tasks** | **Resources** | **Activity Duration** | **Responsible** | **Observations** |
| Project Management | Initial Project Planning | Define the project scope, methodology, and phases, along with task distribution. | Management tools: - Trello - Google Drive | 4 weeks | Scrum Master | Proper coordination and definition will prevent delays and facilitate the use of collaborative tools. |
| UX/UI | Interface and User Experience Design | Creation of prototypes and final design of the application's user interfaces. | Figma | 2 weeks | UX/UI Designer | Essential for user accessibility and experience. Designs must be iterative based on feedback. |
| Software Development | Build Data Models | Design and implementation of a data model to support the application's requirements. | Database tools: - | 2 weeks | Backend Developers | Ensures that the model is flexible for future requirements. |
| Software Development | Frontend Development | Implementation of the backend functionalities of the application. | Development tools: - GitHub | 6 weeks | Frontend Developers | Ensures that business logic and integration with the database work correctly. |
| Software Development | Backend Development | Implementation of backend functionalities and frontend design of the application. | Development tools: - GitHub | 6 weeks | Backend Developers | Key to the functionality and operability of the system. Requires constant coordination between developers. |
| Software Quality | Product and Process Certification Testing | Design and execution of tests to validate the system's backend, frontend, and processes. | N/A | 7 weeks | QA Team/Developers | Tests must be iterative and conducted with the development team to apply immediate improvements. |
| Software Development | Improvements Based on Testing | Implementation of code and process improvements based on the test results. | Development tools: - GitHub | 7 weeks | Developers | Improvement iterations must follow the principles of continuous improvement. |
| Project Management | Project Closure | Conduct a thorough review of the project to verify that all objectives and requirements have been met as planned. Specific Tasks: - Final Review of Deliverables: Verify that all deliverables meet established quality standards and requirements. - Complete Documentation: Prepare a final report. - Final Presentation: Prepare an executive presentation to showcase the project's results, its impact, and the lessons learned to stakeholders. | Management tools: - Trello - Google Drive | 2 weeks | Scrum Master | This closure must be thorough to ensure that there are no undocumented areas and that stakeholders can easily review progress and results. |
| Project Management | Project Monitoring, Adjustments, and Documentation | Continuous review of project progress, adjustments as needed, and ensuring proper documentation of all relevant aspects of the project. | Management tools: - Trello - Google Drive | Throughout the project | Scrum Master | Ensures the project stays on track and within budget. |

| **8. Gantt Chart** |
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| Find a Gantt Chart format that suits you and organize the activities planned in the previous point in it, considering the period assigned for the development of your APT Project. You must maintain the temporality of the academic period in the development of the three phases contemplated by the Degree Portfolio Subject. |

| **Activity** | **Fase 1** | | | | **Fase 2** | | | | | | | | | | | **Fase 3** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **W1** | **W2** | **W3** | **W4** | **W5** | **W6** | **W7** | **W8** | **W9** | **W10** | **W11** | **W12** | **W13** | **W14** | **W15** | **W16** | **W17** | **W18** |
| Initial Project Planning | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Interface and User Experience Design |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Build Data Models |  |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |
| Frontend Development |  |  |  |  |  | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |  |  |  |  |
| Backend Development |  |  |  |  |  |  | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |  |  |  |
| Product and Process Certification Testing |  |  |  |  |  |  |  | **X** | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |  |
| Improvements Based on Testing |  |  |  |  |  |  |  | **X** | **X** | **X** | **X** | **X** | **X** | **X** |  |  |  |  |
| Project Closure and Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  |
| Project Monitoring, Adjustments, and Documentation | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |