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1. **PART I**

| **1. Personal Information** |
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| Below is a table where you need to fill in the requested information. |

| Student Name | Matías Estay - Marcelo Montecino - Paula Velasquez |
| --- | --- |
| ID Number | 20.871.412-0 - 20.139.233-0 - 20.222.227-7 |
| Degree Program | Computer Engineering |
| Campus | Maipú |

| **2. APT Project Description** |
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| In the description, briefly state the name of your APT project and the exit profile competencies you will put into practice. If your degree program has defined areas of performance, also mention which areas are linked to the project. |

| Project Name | Probuilder |
| --- | --- |
| Performance Area(s) | IT Analysis and Solutions  Development of a Mobile Software |
| Competencies | * Build a data model according to the requirements of the entities * Program queries to obtain information from a database according to the requirements * Design the functional logical model to provide a solution to the client’s requirements |

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

| Relevance of the APT Project | * To prevent potential frauds that occur during construction; this topic is relevant because we will conduct requirement gathering, analysis, and develop a mobile software to provide a solution. * The situation we are addressing is located in Chile, mainly in the Los Lagos region; this area is characterized by its fishing industry and being composed mainly of islands. * It would mainly affect entities looking for skilled workers or contractors. * Our contribution would be the opportunity to provide work, prevent fraud, and also offer an advertising space for small and medium-sized enterprises (SMEs).| |
| --- | --- |
| Description of the APT Project | The main objective of this project is to provide a mobile application to the public, which will address the issue of potential frauds in construction, allowing the client to initiate a bidding process and connect with a skilled worker through the app. |
| Pertinence of the project with the exit profile | Our project is mainly characterized by analyzing a problem, which would be fraud when constructing or hiring a quality service. For this, we analyze the problem and design and develop a mobile software with the diverse information we gather about the workers, in addition to guaranteeing a quality service and application. The aforementioned competencies are extremely important because they will guide us in completing this project. As mentioned, we will design a functional model to provide solutions, program queries for clients about the workers, their reliability, and their bidding processes. |
| Relationship with professional interests | My professional interests are mainly focused on the areas of projects and databases. This project is ideal for these areas because we need to manage the processes of creation and data collection, as well as create and program the database and the respective application. This would directly help me in knowing how to manage and carry out a project from scratch, as my team and I intend to continue with this project and develop it into something more stable for the future. Therefore, I see it as a good opportunity to polish and improve my long-term experiences with projects. |
| Feasibility of developing the APT Project | The project is feasible for the following reasons:   * **Semester Duration:** The project can be developed during the semester as the academic semester lasts approximately 16 weeks, giving us time for planning, development, and testing of the software. * **Hours allocated to the course:** The hours allocated to the course are sufficient to resolve doubts with the instructor and also receive feedback on our project. * **Required materials:** The materials we will use for project development include Android Studio tools, databases like MySQL, and programming languages. All these resources are accessible. * **External factors facilitating development:**   + **Technologies and resources:** Access to software development tools and databases allows us to create without limitations.   + **Collaboration with classmates and professors:** Having feedback and guidance from professors and collaboration with classmates facilitates solving problems that may arise during development.   + **Collaboration with experts:** We have the support of a Construction Engineer.   **External factors hindering development and ways to address them:**   * **Time limitations:** The academic load and personal commitments of the group members could delay project development. * **Availability of real data:** The lack of real data from contractors and skilled workers could be a problem. * **Technical problems:** We might face technical issues that could hinder or delay the project. * **Natural disasters:** We could be exposed to natural disasters leading to power outages or lack of basic supplies, etc. |

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 should be presented clearly and concisely without further explanation, meaning they should be understood on their own. It is suggested to write them using an infinitive verb as this forces you to specify concrete actions. |

| General Objective | * Make the app 100% functional and solid so that it can succeed in the market in the future. * In the long term, further generalize the app and provide more services nationwide. * Reduce the number of frauds related to the construction industry. * Provide an advertising space for less-known SMEs. |
| --- | --- |
| Specific Objectives | * Deploy the application to production and add it to Google Play. * Enroll a total of 20 carpenters by the final project deadline. * Achieve more than 30 downloads from Google Play or App Store by the final project deadline. * Maintain an average app rating of 4 stars on Google Play or App Store. |

| **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 methods of work. |

| Description of the Methodology |
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| As a work team, we chose the agile methodology because it helps with continuous improvement and emphasizes team collaboration, in addition to dividing the project into different phases. It is extremely important for us to have an efficient order and guarantee more solid results at the end of our project.  Our work team consists of 3 people whose roles will be defined as follows:   * Marcelo Montecino: Product Owner, Development. * Matias Estay: Scrum Master, Development. * Paula Velásquez: Tester/QA, Development.   The stages that we will define in the project are as follows:   * **Initial Planning**   + **Objective:** Define the project vision and main requirements.   + **Activities:**     - **Product Backlog Definition:** Marcelo Montecino in his role as Product Owner will identify and prioritize the software features and functionalities that need to be developed.     - **Assignment of Responsibilities:** Establish initial tasks and assign them according to the defined roles. * **Software Development**   + **Objective:** Develop the software in short work cycles (Sprints), delivering functional product increments at the end of each Sprint.   + **Activities:**     - **Sprint Planning:** Matias Estay as Scrum Master will organize planning meetings to select backlog items that will be addressed in each Sprint.     - **Software Development:** Marcelo Montecino and Matias Estay will work on developing the selected features.     - **Quality Control:** Paula Velásquez will be responsible for conducting quality tests and ensuring that each increment meets the acceptance criteria. * **Review and Continuous Improvement**   + **Objective:** Review the work done and make adjustments to improve in each iteration.   + **Activities:**     - **Sprint Review:** At the end of each Sprint, the team will review the completed work, receive feedback, and adjust as necessary.     - **Sprint Retrospective:** The team will analyze what worked well and what can be improved to optimize performance in future Sprints. * **Final Delivery and Deployment**   + **Objective:** Prepare and deliver the final software to clients or stakeholders.   + **Activities:**     - **Environment Preparation:** Matias Estay in collaboration with the team will ensure that the production environment is ready for deployment.     - **Product Delivery:** A final presentation of the software will be made, ensuring that it meets the established requirements and expectations. * **Maintenance and Support**   + **Objective:** Ensure the correct functioning of the software post-delivery and make continuous improvements.   + **Activities:**     - **Technical Support:** The team will provide support to resolve any issues.     - **Updates and Improvements:** Future updates will be planned and executed based on user feedback.   **Work Methods:**   * **Daily Meetings (Daily Scrum):** Matias Estay will organize daily meetings to review progress, identify impediments, and adjust the work plan. * **Quality Control (QA):** Paula Velásquez will conduct rigorous tests to ensure the software meets the defined quality standards. * **Continuous Communication:** The team will maintain constant and open communication to ensure alignment of all members with project objectives. |

| **6. Evidences** |
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| Below describe the evidence that will be evaluated in the progress report and the final report of your APT project. These evidences must be agreed upon with your instructor. Evidence will be understood as the products developed during the project whose purpose is to visualize or document how the work has been implemented. |

| **Type of Evidence (progress or final):** | **Name of Evidence** | **Description** | **Justification** |
| --- | --- | --- | --- |
| Progress | Project Planning Documentation | We document in a Word file the initial planning of our project, highlighting the problem, the IT solution we will provide, the objectives we will have, the methodology we will use, the work plan we will follow, and the timeline. | Word document with the initial information of the project. |

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

| **Plan de Trabajo Proyecto APT** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Competency or Unit of Competencies | Name of Activities/Tasks | Description of Activities/Tasks | Resources | Duration of the Activity | Responsible | Observations |
| Development of IT solutions | Search for the problem to provide an IT solution | As a team, we search for a common problem in society, such as construction scams, especially in the south of our country. We chose Frutillar because of the available land and the search for places to build a home. | Human resources, internet, hardware for information search, Word for documentation | 1 week | Marcelo Montecino. | N?A |
| IT Project Management | Planning and documentation of the project start | We created Word documents with our team detailing the project's characteristics, considering what it will entail and what solution it will provide if there is a defined problem, mentioning the scope, objectives, and methodology we will use for this project. | Human resources, internet, hardware, Word for storing information | 2 weeks | Paula Velasquez. | We encountered some difficulty in developing certain parts of the document and some moments of project planning. |
| IT Project Management | Meeting to analyze problems and clarify doubts about the project plan | We met as a work team (Daily Meeting) to clarify doubts or defects in our project plan. | Resources such as internet, Word, Hardware, and human resources were used. | 1 day | Marcelo Montecino. | We made the respective improvements and clarified doubts about the project analysis. |
| IT Project Management | Presentation of the project plan | We will present as a group the reason for our project, the problem, the plan, and also the solution, providing the objectives it will have and the plan for its development. | Resources such as internet, PowerPoint, Canvas, Hardware, and human resources were used. | 1 day | Development Team | N?A |
| Requirements Gathering and Analysis, Development, Adaptation, and/or Integration of IT Systems | Data Model Design | Create the logical data model design, define the entities and relationships, and review the design for approval. | Human resources, data modeling software | 2 weeks | Matias Estay | N?A |
| Adaptation and/or Integration of IT Systems | Development Environment Configuration | Configure and prepare the development environment with Android Studio, MySQL, and version control tools. | Hardware, development software, version control tools | 2 weeks | Marcelo Montecino, Matias Estay, Paula Velásquez | N?A |
| Development | Backend Development | Develop the API for user management, implement database queries, and perform unit tests. | Human resources, development software | 2 weeks | Marcelo Montecino | N?A |
| Development | Frontend Development | Design the user interface, implement the main screens, connect the frontend with the backend, and perform usability tests. | Human resources, development software, UI design tools | 2 weeks | Matias Estay | N?A |
| Quality Assurance and Support Services | Integration and Testing | Integrate all developed parts, perform integration and functional tests, and correct detected errors. | Human resources, testing and integration software | 2 weeks | Paula Velasquez | N?A |
| Database Administration and Information Management and Support Services | Optimization and Adjustments | Optimize software performance, make UI adjustments based on feedback, and conduct final security and quality review. | Human resources, optimization and testing software | 2 weeks | Paula Velasquez | N?A |
| IT Project Management, Database Administration and Information Management, and Support Services | Preparation for Deployment | Create the final project documentation, configure the production environment, and perform final tests in the production environment. | Human resources, documentation software, production environment | 1 week | Marcelo Montecino, Matias Estay, Paula Velásquez | N?A |
| IT Project Management | Deployment and Final Presentation | Deploy the application on Google Play and Apple Store, make the final project presentation, and gather post-launch feedback. | Human resources, deployment platforms, presentation tools | 1 week | Marcelo Montecino, Matias Estay, Paula Velásquez | N?A |

| **8. Gantt Chart** |
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| Find a Gantt chart format that suits you and organize the planned activities in the previous point, considering the period assigned for the development of your APT Project. You must maintain the academic period's timeline in the development of the three phases contemplated by the Capstone Course. |

| **Activity** | **Phase 1** | | | | **Phase 2** | | | | | | | | | | | | **Phase 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** |
| Search for the problem to provide an IT solution | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| IT Project Management. |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Meeting to analyze problems and clarify doubts about the project plan. |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Presentation of the project plan. |  |  |  | **X** |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Data Model Design. |  |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  |  |  | |  |  |
| Development Environment Configuration. |  |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  |  |  | |  |  |
| Backend Development. |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  |  |  |  | |  |  |
| Frontend Development. |  |  |  |  |  |  |  |  |  |  | **X** | **X** |  |  |  |  | |  |  |
| Integration and Testing. |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** |  |  | |  |  |
| Optimization and Adjustments. |  |  |  |  |  |  |  |  |  |  |  |  |  |  | **X** | **X** | |  |  |
| Preparation for Deployment |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | **X** |  |
| Deployment and Final Presentation. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | **X** |