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1. **PART I**

| **1. Personal Background** |
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| Below is a table where you need to complete the requested information. |

| Student's name | **Abraham Daque** |
| --- | --- |
| Rut | **20.844.203-7** |
| Carrera | **Ingeniería en Informática** |
| Sede | **Padre Alonso de Ovalle** |

| Student's name | **Diego Rivera** |
| --- | --- |
| Rut | **20.638.619-3** |
| Carrera | **Ingeniería en Informática** |
| Sede | **Padre Alonso de Ovalle** |

| Student's name | **Benjamin Ramirez** |
| --- | --- |
| Rut | **20.75.114-6** |
| Carrera | **Ingeniería en Informática** |
| Sede | **Padre Alonso de Ovalle** |

| Student's name | **Thomas González** |
| --- | --- |
| Rut | **19.671.654-8** |
| Carrera | **Ingeniería en Informática** |
| Sede | **Padre Alonso de Ovalle** |

| **2. Description of the APT Project** |
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| In the description, you should briefly state the name of your APT project and the competencies from the graduate profile that you will put into practice. If your program defines performance areas, also mention which performance areas the project is related to. |

| Project name | *Teamfit* |
| --- | --- |
| Performance area(s) | Our project covers many performance areas, primarily related to computer science:  - Propose IT solutions by analyzing processes holistically according to organizational requirements. - Develop a software solution using techniques that enable the systematization of development and maintenance to ensure the project objectives. - Build data models to support organizational requirements according to a well-defined and scalable design. - Develop programs and routines of varying complexity to address organizational requirements using market technologies and best coding practices. - Implement systemic solutions to automate and optimize business processes based on organizational needs. - Resolve systemic vulnerabilities to ensure the software complies with industry-required security standards. - Develop data transformation processes to derive information and knowledge for decision-making and improve business processes based on organizational needs. |
| Skills | - Process and requirements analysis - Data modeling and management - Databases and information manipulation - Programming and solution development - Implementation of systemic solutions - IT security - IT project management - Data transformation and analysis |

| **3. Justification of the APT Project** |
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| Below are various fields that you need to 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 | Roda Energía, an energy services platform from Abastible, is a consulting firm specialized in sustainability services and energy management solutions for various industries. With over 12 years of experience and a portfolio of more than 400 clients, Roda has been collaborating with CITT since 2022, working on innovative solutions such as Licibot. This year, Roda aims to advance in capacity management or resource planning solutions to optimize personnel allocation. |
| --- | --- |
| Description of the APT Project | **The company seeks to improve internal resource management with the following objectives:**   * Develop a software tool to optimize staff allocation. * Provide feedback to commercial areas to improve project cost estimation. * Increase customer satisfaction by delivering services on time. * Identify patterns of interest to alert on potential underutilization or overutilization. * Standardize resource planning through project management tools. |
| Relevance of the project to the graduate profile | **Relation to the Graduation Profile: The proposed APT Project, "Teamfit", is closely aligned with the graduation profile of the Computer Engineering program. This project is designed to optimize human resource management within the company Roda Energía, using an advanced software platform. Its relevance is demonstrated in several key aspects:**   * **Process and Requirements Analysis:** The project requires a comprehensive analysis of the company's internal processes to identify areas for improvement in personnel allocation. This involves evaluating the organization's current and future requirements, which is a fundamental competency of the graduation profile. * **Software Development:** The creation of a web solution that automatically assigns working hours more optimally puts into practice systematic development and software maintenance techniques. This process ensures that the project's objectives are achieved efficiently and effectively, in line with the graduation profile's standards. * **Data Modeling and Management:** The project involves building scalable and well-defined data models, essential for supporting the organization's requirements and enabling data-driven decision-making, a critical competency in the graduation profile. * **Programming and Solution Development:** The development of complex programs and routines for optimizing human resources through algorithms based on historical data demonstrates advanced programming skills, utilizing market technologies and best coding practices, aligning with the graduation profile. * **Systemic Solution Implementation:** The implementation of an integrated systemic solution for automating and optimizing business processes reflects the ability to apply technological solutions that improve the organization's operational efficiency. * **Information Security:** The project addresses the resolution of systemic vulnerabilities to ensure that the software complies with industry-required security standards, an essential competency for ensuring the integrity and security of data. * **IT Project Management:** Managing the APT project, from planning through execution and evaluation, requires IT project management skills, including informed decision-making and the coordination of activities. * **Data Transformation and Analysis:** The transformation of large volumes of data to generate useful information and knowledge for the organization is crucial for supporting decision-making and improving business processes. |
| Relation to professional interests | It relates to our professional interests because it helps us manage a project, document it, program it, and work on both the front end and back end with a real client who has real needs and problems. This allows us to put into practice our ability to solve the pain points they experience. |
| Feasibility of developing the APT project | **Why do you believe it is possible to develop your APT Project? To answer this question, you should consider the following:**   * **Semester duration:** Since the project started about a month before the beginning of Capstone, time is on our side. * **Hours assigned to the course:** This is not a problem. * **Required materials:** All team members have computers to work on the project. * **External factors facilitating development:** Since this is a CITT project, we have the guidance and support of two DUOC professors who are knowledgeable about both Capstone and the needs of the project. * **External factors hindering development and ways to address them:** Three of our team members are currently working, and one still has courses to complete, which means organization may be somewhat challenging at times.   . |

1. **PART II**

| **4. Objectives** |
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| In this section, you should define the general and specific objectives of the APT Project. It is important to clarify that the objectives should be stated clearly, concisely, and without further explanations, meaning they should be self-explanatory. It is recommended to phrase them using an infinitive verb, as this helps to specify concrete actions. |

| General objective | The main objective of the project is to provide RODA with a tool that offers certainty and confidence when calculating the availability and allocation of resources concerning the services the company provides. |
| --- | --- |
| Specific objectives | * Have a software tool to optimize staff allocation. * Provide feedback to commercial areas to improve project cost estimation. * Standardize resource planning using project management tools. * Allow for resource adjustments if the planning done by our system does not meet the client’s preferences. * Enable clearer visualization of projects for the client. |

| **5. Methodology** |
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| In the following section, you should describe the methodology specific to your discipline that you will use to address the aforementioned APT project, including the stages and methods of work. |

| Description of the Methodology |
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| **The project will be developed using agile methodologies, specifically the SCRUM framework, with roles divided as previously agreed by the team. The assigned roles for each member are as follows:**   * **Abraham Daque** * **Thomas Gonzalez** * **Diego Rivera** * **Benjamin Ramirez**   Additionally, various programming and management tools will be used to facilitate both the development and organization of the project. Some of the programs utilized by the team for these processes are as follows:   * **Odoo:** To manage the tasks assigned to each team member. * **Excel:** For creating the backlog, dailies, burndown charts, among others. * **Word:** For preparing various documents such as the project charter, project definition, meeting minutes, etc. * **Discord:** For conducting team development meetings. * **Google Meet:** For meetings with the client and the supervising professor, as well as for progress demonstrations and sprint reviews. |

| **6. Evidence** |
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| Next, describe what evidence will be evaluated in the progress report and the final report of your APT project. These evidences should be agreed upon with your instructor. Evidence is understood as the products developed during the project that aim to showcase or document how the work has been implemented |

| **Type of evidence** | **Name of the evidence** | **JustificationDescription** | **Justificación** |
| --- | --- | --- | --- |
|  |  | *Describe las evidencias acordadas con tu docente, siempre teniendo en mente que estas deben dar cuenta del desarrollo de tu Proyecto APT.* |  |
| **Advance** | **Sprints Reviews** | **This document gathers the activities performed during the sprint and compares them with the progress and quality of the deliverables** | **Review of the sprints to assess the team's progress** |
| **Advance** | **Dailies** | **This document describes, on a daily basis, what each team member has done, what they will do, and what difficulties they encountered.** | **It provides evidence of the work completed by the team members during the project.** |
| **Advance** | **Backlog** | **This document creates, organizes, and prioritizes the user stories needed for the development of the project.** | **Essential for the development and organization of the project's tasks.** |
| **Advance** | **Lean Inception** | **Project initiation, outlining the main features and functionalities of the system, as well as providing an initial plan.** | **Essential for better defining the project to be developed and the target client.** |
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| **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 competency units | Name of Activities/Tasks | Description of Activities/Tasks | Resources | Duration of the activity | Responsable[[1]](#footnote-0) | Observations |
| *Nombra las ce la actividad.*  *ompetencias o unidades de competencias que se relacionan con las diferentes actividades requeridas para el desarrollo d* |  | *Describe la tarea o actividad.* | *Nombra los recursos necesarios para llevar a cabo las actividades definidas.* | *Escribe la duración de actividades o tareas.* | *Escribe el nombre del integrante del equipo responsable de la actividad y tareas asociadas.* | *Escribe las dificultades o facilitadores que se podrían presentar durante la ejecución de cada una de las actividades propuestas para llevar a cabo el plan de trabajo.* |
| *Análisis* | Preliminary research on Odoo and similar platforms | Research the functionality of Odoo and similar tools | PC con conexión a internet | 1 wees | Diego Rivera  Thomas Gonzalez  Abraham Daque  Benjamín Ramirez |  |
| Database | Create connection to PostgreSQL | Create connection to PostgreSQL and Django, configure connection in DBeaver | DBeaver, PostgreSQL, PgAdmin (Opcional) | 1 day | Diego Rivera |  |
| Documents/ PO | Create User Stories | Create User Stories | Odoo, Jira, Excel | Throughout the development of the project | Diego Rivera |  |
| Programming | Program the resource allocation algorithm | Program the resource allocation algorithm | VS code, DBeaver, PostgreSQL, Python. | 10 weeks | Abraham Daque  Thomas Gonzalez  Benjamín Ramirez |  |
| Programming | Consume API and establish connection |  | VS code, DBeaver, PostgreSQL, Python, Odoo | 4 weeks | Abraham Dake |  |
| Programming | Apply design and UX | Use CSS classes, Bootstrap, and others to achieve the appropriate design according to Roda's requirements | VS code, DBeaver, PostgreSQL, Python. | 10 weeks | Benjamín Ramírez |  |
| Programming | Generate programming standards | Use defined standards or best practices for programming | Visual Studio | 2 weeks | Diego Rivera |  |
| Documents/ PO | Project monitoring |  | Discord, Odoo, Jira | Throughout the development of the project | Diego Rivera |  |
| Documents/ PO | Prioritization and creation of the Backlog. |  | Discord, Odoo, Jira | Throughout the development of the project | Diego Rivera |  |
| Machine Learning | Classifier algorithm | Google Collab | Google Collab | 10 weeks | Thomas Gonzalez |  |
| Documentation | Lean Inception | Create the initial project scope, indicating relevant functionalities and features of the project | Miro | 3 Days | Equipo de trabajo |  |

| **8. User Story Mapping** |
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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)