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1. **PART I**

| **1. Personal Background** |
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| Student Name | **Fabrizzio Riffo** |
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| Rut/DNI | **20.931.444-4** |
| Student Name | **Patricio Infante** |
| Rut/DNI | **19.381.218-K** |
| Student Name | **Diego Arias** |
| Rut/DNI | **19.743.796-0** |
| Degree Program | **Computer Engineering** |
| Campus | **San Joaquín** |

| **2. APT Project Description** |
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| Project Name | VecindApp |
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| Performance Area(s) | The project is linked to the performance areas of **Software Development, Systems Analysis and Design, and Project Management.** |
| Competencies | **The most relevant competencies are:**  **C1** Perform certification tests for both products and processes using industry-defined best practices.  **C2** Manage IT projects, offering decision-making alternatives according to organizational requirements.  **C3** Build data models to support organizational requirements according to a defined and scalable design.  **C4** Develop a software solution using techniques that systematize the development and maintenance process, ensuring objectives are achieved.  **C5** Communicate orally and in writing using English in socio-labor situations at an elementary level in an intensive mode, according to the TOEIC and CEFR competency tables.  **Graduation profile competencies to be put into practice:**   * Develop software solutions applying best practices in development and maintenance. * Build data models that support organizational information. * Perform tests to ensure system quality and proper functionality. |

| **3. APT Project Justification** |
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| Project Relevance | This project is relevant to the field of computer science because it applies disciplinary knowledge to a real problem of digitalization in community organizations.  Currently, many neighborhood councils in Chile work with manual processes, which limits efficiency. With *VecindApp*, a concrete contribution is generated by facilitating data management, automating procedures, and improving user interaction.  Additionally, it is a formative instance that allows the application of key competencies in Computer Engineering, such as software development with best practices, scalable data modeling, technology project management, and quality testing. These competencies are directly linked to professional performance in software companies, the public sector, and organizations requiring digital solutions. |
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| Project Description | The *VecindApp* project consists of developing a web/app platform that centralizes and optimizes neighborhood council management. The system will allow member registration, issuance of residence certificates, application and management of community projects, as well as event dissemination and sending digital notifications.  The solution focuses on usability, traceability, and information security, aiming to streamline internal processes for the board and improve communication with the community. |
| Relevance to Graduation Profile | This project aligns with the graduation profile of the Computer Engineering program, as it involves software development, data model construction, web technology integration, and the application of quality and security best practices. It also promotes technology project management, a fundamental skill in the professional field. |
| Relation to Professional Interests | Each team member sees a contribution to their professional interests in this project:   * **Patricio Infante**: Interested in web development and project management. *VecindApp* will strengthen skills in agile planning and leadership as Product Owner and/or Scrum Master. * **Fabrizzio Riffo**: Focused on databases and software quality. The project will give him the opportunity to design scalable models and run validation tests. * **Diego Arias**: Aims to specialize in full-stack development and user experience. *VecindApp* will allow him to focus on implementing interfaces and key usability features.   Overall, the project contributes to the professional development of all three members, as it simulates a real work environment with teamwork, agile management, and functional product delivery. |
| Project Feasibility | The project is feasible within the academic semester because:   * **Duration**: ~5 months (18 weeks), sufficient to plan, develop, and present the system. * **Resources**: The team has personal computers, internet connection, development tools (VS Code, MySQL, web frameworks), collaborative platforms (GitHub, Trello), and local testing environments. * **Facilitating factors**: Free/low-cost technologies, faculty guidance, and previous software development experience. * **Challenges**: Possible requirement changes by the board or coordination issues within the team. * **Mitigation strategies**: Prioritized backlog management, periodic sprint meetings, and task flexibility to respond to unforeseen events. |

1. **PART II**

| **4. Objectives** |
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| General Objective | Develop a web/app platform that optimizes neighborhood council management by digitizing registrations, issuing certificates, project applications, and community communication, contributing to process efficiency and transparency. |
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| Specific Objectives | * Implement a registration module with data validation. * Develop digital residence certificate issuance functionality. * Design and implement a community project application and management system. * Incorporate an event calendar and community notifications. * Perform unit and integration tests to ensure software quality. * Prepare technical documentation and a user manual for system adoption and maintenance. |

| **5. Methodology** |
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| Work Methodology |
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| **Work Methodology** The Scrum agile methodology will be applied, organizing work into short iterations (sprints), prioritizing continuous value delivery, and enabling adaptability to requirement changes. This methodology is appropriate for software development as it facilitates planning, progress tracking, continuous testing, and collaborative management.   * **Scrum Board**: Trello with columns To Do, In Progress, In Review, Completed. * **Sprints**: 2-week cycles with progress reviews and adjustments. * **Meetings**: Weekly coordination meetings to review tasks and resolve impediments. * **Retrospectives**: At the end of each sprint to improve organization and efficiency.   **Roles and Responsibilities**   * **Product Owner (Fabrizzio Riffo)**: Defines and prioritizes the backlog, validates requirements, ensures community value. * **Scrum Master (Patricio Infante)**: Ensures correct Scrum implementation, organizes ceremonies, resolves impediments. * **Development Team (Diego Arias)**: Implements functionalities, runs tests, manages the database, and ensures technical quality.   Note: Due to the small team size, roles are flexible; all members will actively participate in development, testing, and documentation. |

| **6. Evidence** |
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| **Type of evidence**  **(progress or final)** | **Evidence name** | **Description** | **Justification** |
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| **Progress** | **Requirements and Architecture Document** | **Includes the requirements gathering, database model, and system architecture diagrams.** | **Allows demonstrating the initial planning, technical design, and how these address the stated objectives.** |
| **Progress** | **Interface Prototype (Mockup)** | **Sketches and initial screens of the web/app system created with design tools.** | **Helps validate usability and design with users before coding, ensuring relevance and improvements in the user experience.** |
| **Final** | **Functional system** | **Delivery of the implemented system with enrollment, certificates, projects, and notifications modules.** | **Facilitates platform adoption by the community and demonstrates attention to usability.** |
| **Final** | **Technical documentation** | **Report with system specifications, architecture, tests performed, and design decisions.** | **Ensures project traceability, supports future maintenance, and demonstrates the application of development best practices.** |
| **Final** | **User Manual** | **Document aimed at management and community members with clear instructions for using the system.** | **Facilitates platform adoption by the community and shows attention to usability.** |
| **Final** | **Closure Report** | **Document with conclusions, challenges faced, lessons learned, and results achieved.** | **Summarizes the entire project process, evidences the achievement of competencies, and reflects on the impact attained.** |

| **7. Work Plan** |
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| **Competences** | **Activity Name** | **Activity Description** | **Resources** | **Duration** | **Responsible** | **Remarks** |
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| C2, C3 | Requirements Gathering | Collect information about the neighborhood council processes and define the main functionalities | Meetings, interviews, Google Meet, Trello | 2 weeks (S1–S2) | Fabrizzio Riffo | Possible requirement changes according to management. |
| C3, C4 | Database and Architecture Design | Model entities, relationships, and system structure. | MySQL | 2 weks(S3–S4) | Patricio Infante | It must be validated with the team before starting development. |
| C4 | Interface Prototyping | Create mockups of the main screens. | Figma, Canva | 1 week (S4) | Diego Arias | Validate usability with the group before implementation.. |
| C4 | Environment and Repository Setup | Set up the GitHub repository, development environments, and initial libraries. | GitHub, VS Code | 1 week (S5) | Fabrizzio Riffo | Can be done in parallel with prototyping. |
| C4 | Enrollment and Registration Module Development | Program functionalities for neighborhood member registration. | VS Code, GitHub, MySQL | 2 weeks(S6–S7) | Diego Arias | Initial development iteration. |
| C4 | Certificates Module Development | Implement the issuance of residency certificates. | VS Code, MySQL | 2 weeks(S8–S9) | Patricio Infante | Requires data validation testing. |
| C2, C4 | Technical Documentation (Progress) | Draft initial documentation of system architecture and specifications. | Word, GitHub Wiki | 4 weeks(S6–S9) | Fabrizzio Riffo | Developed in parallel with the code. |
| C4 | Community Projects Module Development | Implement a system for project/workshop application and management. | VS Code, GitHub | 2 weeks(S10–S11) | Fabrizzio Riffo | May be extended depending on complexity. |
| C4 | Notifications and Calendar Development | Implement a calendar and notification system for community members. | Firebase, MySQL | 2 weeks(S12–S13) | Diego Arias | Important to test on both mobile and web. |
| C2, C4 | Technical Documentation (Supplement) | Update the documentation with newly developed modules. | Word, GitHub Wiki | 4 weeks(S10–S13) | Fabrizzio  Riffo | Complements the initial version. |
| C1, C4 | Unit and Integration Testing | Validate implemented functionalities and fix errors. | Postman, Jest, entorno de pruebas | 2 weeks(S14–S15) | Patricio Infante | Functional and technical tests are applied. |
| C2 | User manual | Prepare a practical user guide for community members and management. | Word, Canva | 3 weeks(S14–S16) | Diego Arias | It must be clear and easy to use. |
| C2 | Final Presentation Preparation | Prepare slides, demo, and presentation. | PowerPoint, Canva | 1 weeks(S17) | Team | The group presentation will be rehearsed. |
| C2 | Delivery and Closure | Final presentation to the instructor. | Informe final, sistema funcional | 1 weeks(S18) | Team | Conclusions and Lessons Learned |

| **8. Gantt Chart/ VecindApp** |
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Semanas 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18