1. **PART I**

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

| Student Name | **Benjamín Hidalgo, Mariana Mendez, Angel Rojas, Vicente Sepulveda** |
| --- | --- |
| Rut | **21.299.597-5 / 20.905.862-6 /21.369.245-3/21.585.924-K** |
| Degree | **Computer Engineering** |
| Campus | **Puente Alto** |

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

| Project name | *SeniorInteract.* |
| --- | --- |
| Performance Area(s) | *In the development of the Senior Interact project, various performance areas from my curriculum will be addressed, including:*  *Software Development, through the construction of a modular web platform using modern technologies such as Next.js and Supabase.*  *Databases, through the design and implementation of queries, reports, and relational data management.*  *IT Project Management, applying planning methodologies (Gantt Chart, WBS, project charter) and progress control.*  *Software Quality and Assurance, through functional testing, user testing, and accessibility validation.*  *UX/UI and Human–Computer Interaction, ensuring that the interfaces are user-friendly and accessible for older adults.*  *Security and Networking, guaranteeing secure authentication, access control, and encrypted communication using HTTPS and WebRTC protocols.*  *Cloud Computing, by integrating external services such as Supabase (DB/Auth), Daily.co (videocalls), and Cloudinary (multimedia storage).* |
| Competencies | *Develop secure and high-quality software solutions, applying development methodologies and the software life cycle.*  *Design and implement relational databases, creating queries, reports, and routines that support system requirements.*  *Apply software analysis and design techniques to gather requirements, model use cases, and document the solution.*  *Perform testing and ensure software quality, verifying compliance with functional and non-functional requirements.*  *Design accessible and usable user interfaces, considering Human–Computer Interaction (HCI) principles and accessibility for older adults.*  *Manage IT projects as a team, applying planning tools (project charter, WBS, Gantt chart, milestones).*  *Integrate cloud services and communication protocols, ensuring connectivity and scalability of the platform.*  *Demonstrate social responsibility and ethical commitment by developing an inclusive project that promotes digital participation among older adults.* |

| **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. |

| Relevance of the APT Project | *This topic was chosen because it is increasingly evident that older adults are being left behind in the digitalization of traditional media, which can lead to social isolation. We propose a digital solution in which this age group can easily interact with each other through current technological means, thus enabling social interaction without the need to leave their homes. Additionally, our solution includes didactic games specifically selected for them.*  *We consider this topic to be highly relevant, as it incorporates a modern solution to a current problem, integrating everything we have learned throughout our degree program. Furthermore, we believe this project is, in many ways, innovative and offers a creative solution to a real issue.*  *Our solution seeks to have a positive impact on the lives of older adults in Chile, helping them to reactivate their social lives, learn new skills such as the use of technology, and providing entertainment without leaving their homes. This solution is planned to be initially implemented in the Municipality of Santiago, given its high population density.*  *Finally, as mentioned before, this project addresses a real and current problem, considering various factors for its development and offering a platform that adapts to different devices.* |
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| APT Project Description | *The Senior Interact project has as its main objective to reduce the social isolation of older adults by offering them an accessible and user-friendly digital platform that facilitates interaction among them through modern technological tools.*  *The solution consists of developing a cross-platform web application, adaptable to different devices, that allows older adults to communicate through video calls, real-time chat, and virtual activities, as well as incorporating didactic and cognitive games specifically designed for this age group.*  *To address the identified issue, the project proposes to:*  *Design a simple and accessible interface, with typography, colors, and navigation tailored to older adults.*  *Integrate socialization and learning modules, such as games, video calls, and cultural activities.*  *Apply best practices in security and accessibility, ensuring that users can connect reliably and safely.*  *Implement the system in the Municipality of Santiago as a pilot program in an area with a high density of older adults, with the possibility of later scaling to other municipalities.*  *In this way, the project aims to deliver an innovative, inclusive, and socially responsible solution that promotes digital integration and improves the quality of life of older adults in Chile.* |
| Relevance of the Project to the Graduate Profile | *The Senior Interact project is directly aligned with the graduate profile of the program, as it integrates knowledge and skills in software development, databases, project management, quality assurance, and accessible interface design, all applied to the creation of a digital solution that is both real and socially relevant.*  *The selected competencies are essential for addressing the issue of social isolation among older adults:*  *Developing secure and high-quality software solutions ensures that the platform operates reliably and in compliance with appropriate standards.*  *Designing and implementing relational databases is crucial for storing and managing information related to users, activities, and reports.*  *Applying software analysis and design techniques facilitates the definition of requirements and the structured modeling of the system.*  *Conducting testing and ensuring software quality guarantees that the product meets both functional and non-functional requirements, thereby delivering a satisfactory user experience.*  *Designing accessible and user-friendly interfaces is indispensable in this project, as it is aimed at an age group that requires simplicity and technological adaptability.*  *Managing IT projects collaboratively is essential for organizing, planning, and executing the project within the established deadlines.*  *Taken together, these competencies enable a comprehensive response to the identified issue, delivering an innovative and inclusive technological solution that is fully aligned with the program’s graduate profile, while also demonstrating the practical application of the knowledge and skills acquired throughout the academic training.* |
| Relation to Professional Interests | *As a group, our professional interests within the field of Computer Engineering focus on areas such as secure and high-quality software development, accessible and user-friendly interface design, database administration, IT project management, and the application of technology with a social orientation. We are motivated to develop innovative solutions that generate a positive impact on society, employing modern tools and methodologies.*  *These interests are clearly reflected in the Senior Interact project, where we directly apply knowledge in web development, cloud service integration, database design, and quality assurance testing, while also incorporating accessibility principles tailored to older adults. Furthermore, the project enables us to put into practice planning and management competencies, such as the preparation of a Gantt chart, the definition of milestones, and the implementation of quality assurance methodologies.*  *The completion of this APT Project contributes significantly to our professional development, as it represents a comprehensive experience in which we apply the knowledge acquired throughout the program in a practical case, facing both technical and organizational challenges inherent to a real project. In doing so, we strengthen our technical skills, teamwork abilities, and social responsibility, thereby preparing ourselves more effectively to perform in the professional field of computer science.* |
| Feasibility of Developing the APT Project | *We consider the Senior Interact project feasible to develop within the semester’s duration, as we have a defined timeframe from August to December. This allows us to plan and distribute the work phases (planning, design, development, testing, and closure) in an orderly manner. In addition, the course provides sufficient allocated hours to guide project progress, complemented by each team member’s personal dedication time.*  *Regarding required resources, the project does not demand complex physical infrastructure since it consists of a web platform. Only personal computers, internet access, and development tools and cloud services (Next.js, Supabase, Daily.co, Cloudinary) are necessary. These services offer free or low-cost plans that meet the prototype’s needs.*  *Concerning external factors, several elements facilitate development, such as the availability of modern frameworks, open-source libraries, and cloud platforms that accelerate system construction and deployment. Moreover, the project’s focus on a real and socially relevant issue (the digital inclusion of older adults) enhances the team’s motivation and supports the validation of the project.*  *However, certain challenges may arise, including time constraints due to the academic semester, potential learning curves associated with some cloud services, and technical difficulties in integrating modules such as video calls or cognitive games. To address these challenges, the team has considered strategies such as clearly defined roles, the use of planning methodologies (Gantt chart, WBS), and reliance on documentation and support from developer communities.*  *In conclusion, the project is technically and organizationally viable, given the available timeframe, accessible resources, and planned strategies to mitigate potential obstacles during its development.* |

1. **PARTE II**

| **4. Objectives** |
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| In this section, the general and specific objectives of the APT Project must be defined. It is important to clarify that the objectives should be stated clearly and concisely, without further explanation, meaning they must be self-explanatory. It is recommended to write them using verbs in the infinitive form, as this requires specifying concrete actions. |

| General Objective | *To design and implement a responsive web platform that integrates modules for video calls, chat, activities, and cognitive games, with a focus on accessibility for older adults.*  *To deliver an innovative and socially responsible technological solution that strengthens the digital inclusion of older adults and serves as a pilot for future implementations in the Municipality of Santiago and other institutions.* |
| --- | --- |
| Specific Objectives | *To gather and document the system’s functional and non-functional requirements, considering the needs of older adults and the guidelines of the Municipality of Santiago.*  *To design the system architecture and databases, ensuring scalability, security, and ease of maintenance.*  *To develop the responsive web platform by integrating communication modules (video calls and chat), cultural activities, and cognitive games tailored to the target audience.*  *To implement an accessible and user-friendly interface design, applying principles of usability and digital inclusion for older adults.*  *To conduct quality assurance (QA) testing and validation with users, ensuring the solution meets the established requirements and delivers a satisfactory experience.*  *To train administrative users and moderators in the use of the system, providing manuals and operation guides.*  *To implement and deliver the solution in a pilot environment, evaluating its performance in the Municipality of Santiago as a foundation for future improvements and project scalability.* |

| **5. Methodology** |
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| To address the issue of social isolation among older adults, the Senior Interact project will be developed following the software life cycle across five phases: planning, design, development, testing/QA, and implementation and closure. This methodology structures the work into ordered and measurable stages, facilitating the fulfillment of the defined general and specific objectives.  During the planning phase, requirements are gathered, and the project is organized. In the design phase, the system architecture, databases, and interface prototypes are defined. In the development phase, the main modules of the platform are built (video calls, chat, games, administration). Subsequently, during testing and QA, functional and usability validations are conducted with users. Finally, in the implementation and closure phase, administrators are trained, and the pilot system is delivered to the Municipality of Santiago.  As this is a group project, each team member fulfills a defined role with clear functions and responsibilities:  Project Manager – Vicente Sepúlveda  Responsible for project planning, coordination, and monitoring. Oversees progress, manages resources, and ensures the fulfillment of deadlines and milestones.  Programmer Analyst – Ángel Rojas  In charge of requirements gathering, architecture design, and development of the software modules. Contributes to interface design and integration of external services.  Database Administrator (DBA) – Mariana Méndez  Responsible for database design, implementation, and maintenance. Develops queries, routines, and ensures the integrity and security of information.  Quality Assurance (QA) – Benjamín Hidalgo  Responsible for designing and executing testing plans, validating functional and non-functional requirements, and documenting issues to guarantee product quality.  Designer – Vicente Sepúlveda / Ángel Rojas  Responsible for graphic and user experience (UI/UX) design. Ensure the interface meets accessibility and usability standards for older adults.  This methodological approach, together with the clear division of responsibilities, enables the team to work in a coordinated and efficient manner, maximizing the quality of the final outcome and ensuring the project’s feasibility within the established timeframe. |

| Description of the Methodology |
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| *The problem of social isolation among older adults will be addressed through the development of the Senior Interact platform, applying the software life cycle divided into five phases: planning, design, development, testing/QA, and implementation and closure. This methodology will allow the work to be organized in a structured manner, ensuring that each stage has clear objectives, defined deliverables, and mechanisms for monitoring progress.*  *In the planning phase, requirements and team organization are defined.*  *In the design phase, the system architecture, data models, and interface prototypes are developed.*  *In the development phase, the main modules of the platform are programmed (video calls, chat, games, and administration).*  *In the testing and QA phase, functional and usability validations are carried out.*  *Finally, in the implementation and closure phase, administrators are trained, and the pilot solution is delivered to the Municipality of Santiago.*  *As this is a group project, specific functions and responsibilities were defined for each team member:*  *Project Manager – planning, general coordination, progress supervision, and resource management.*  *Programmer Analyst – requirements gathering, architecture design, and software module development.*  *Database Administrator – database design and management, creation of queries and routines, ensuring data integrity.*  *Quality and Testing – preparation and execution of testing plans, validation of requirements, and quality assurance.*  *Designer – design of accessible and usable interfaces, application of UX/UI principles for older adults.*  *The combination of a structured methodology and a clear division of roles enables the team to address the problem comprehensively, ensuring that each phase of the project is completed within the deadlines and in accordance with the established quality standards.* |

| **6. Evidences** |
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| The following section describes the evidences that will be evaluated in the progress report and the final report of the APT project. These evidences should be agreed upon with the instructor. Evidence is understood as the products developed during the project, whose purpose is to demonstrate or document how the work has been implemented. |

| **Type of Evidence (Progress or Final)** | **Name of Evidence** | **Description** | **Justification** |
| --- | --- | --- | --- |
| Progress | Definition of APT Project | Initial document defining the *Senior Interact* project to be developed. | Establish the project to be addressed in the APT. |
| Progress | Project Charter | Formal document with objectives, scope, roles, and responsibilities. | Define the scope and responsibilities of the project. |
| Progress | ERS | Document specifying the system’s functional and non-functional requirements. | Present the project proposal and requirements specifications. |
| Progress | System Requirements | Detailed list of gathered requirements: functional, non-functional, and security. | Ensure that the core requirements are known and documented. |
| Progress | Gantt Chart | Schedule outlining the project phases and activities. | Organize dates for the execution of project activities. |
| Progress | Extended Use Cases | Document describing user interactions (older adult, moderator, administrator) with the platform. | Visualize and validate interactions among different user profiles. |
| Progress | Mockups | Visual prototype of the main system screens. | Present the platform’s appearance and validate with end users. |
| Progress | Software Architecture Document (DAS) | Document detailing software architecture, technical guidelines, and quality standards. | Define system architecture according to technologies (Next.js, Supabase, Daily.co). |
| Progress | Business Process (TO-BE) | Model of business processes improved by the system. | Show how activity and user management will change with the platform. |
| Progress | Data Dictionary | Document defining terms and attributes used in the system. | Facilitate understanding of the database and technical terminology. |
| Progress | APT Development | Intermediate document showing progress on the solution. | Show project evolution and validate partial compliance. |
| Progress | Database Model | Conceptual/logical design of the database. | Show how information will be managed in the system. |
| Progress | Database Table Creation | Scripts of tables implemented in Supabase. | Provide the database structure ready for development. |
| Progress | PL/SQL Queries | Queries and procedures required for the database. | Ensure correct database interaction and query optimization. |
| Progress | Final APT Report | Document containing all project information and results. | Consolidate the work carried out and provide evidence of progress. |
| Final | Full System Development | Complete system with implemented modules (login, roles, activities, reports, games). | Deliver the fully functional product to the client. |
| Final | Test Plan | Document with testing strategy, metrics, and results. | Validate the system’s quality level. |
| Final | Change Control Matrix | Document recording and managing project changes. | Maintain traceability of modifications during development. |
| Final | Scope Verification | Document showing the system requirements fulfilled. | Confirm that the system meets the requested specifications. |
| Final | User Manual | Document explaining system use for older adults, moderators, and administrators. | Facilitate proper platform usage. |
| Final | Closure Report | Document marking the project’s closure and official delivery. | Formalize the completion of the project. |
| Final | APT Presentation Document | Official presentation of the APT to the instructor and evaluators. | Communicate the project’s results and achievements. |

| **7. Work Plan** |
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| The following table defines the planning of your APT Project according to the requirements. |

| **Work Plan – APT Project** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| **Competence or Unit of Competence** | **Name of Activities/Tasks** | **Description of Activities/Tasks** | **Resources** | **Duration of Activity** | **Responsible** | **Observations** |
| *Project Management* | Project Charter | Preparation and approval of the charter with objectives, scope, roles, and initial validation. | *Computer, management documents* | *11-08-2025 to 20-08-2025* | Entire Team | Base document that defines the project. |
| *Project Management* | *Definition of General Requirements* | *Identify and agree on initial system requirements.* | *Computer, interviews, ERS* | *11-08-2025 to 20-08-2025* | *Vicente Sepúlveda* | *Prepares the ERS and DAS.* |
| *Analysis and Design* | *ERS Document* | *Drafting the document with functional and non-functional requirements.* | *Computer, text document* | *21-08-2025 to 03-09-2025* | *Entire Team* | *Will be used as a technical contract with the client.* |
| *Prototyping* | *System Mockups* | *Creation of interface mockups (UI/UX).* | *Figma, Internet* | *21-08-2025 to 03-09-2025* | *Mariana Méndez & Ángel Rojas* | *Serves as a guide for front-end development.* |
| *Software Architecture* | *DAS Document* | *Define software architecture and technical guidelines.* | *Computer, templates, UML tools* | *21-08-2025 to 03-09-2025* | *Benjamín Hidalgo* | *Must align with Next.js, Supabase, Cloudinary technologies.* |
| *Databases* | *Database Design and Scripts* | *Creation of relational model, tables, and PL/SQL queries in Supabase.* | *Supabase, SQL Developer* | *04-09-2025 to 24-11-2025* | *Mariana Méndez* | *Scripts optimized for performance and security.* |
| *Software Development* | *Front-End and Back-End Development* | *Implementation of the web platform in Next.js and integration with Supabase and Daily.co.* | *PC, GitHub* | *04-09-2025 to 24-11-2025* | *Ángel Rojas / Vicente Sepúlveda* | *Partial progress through weekly sprints.* |
| *Security and Authentication* | *Login and Role Control Implementation* | *Development of authentication with RUT, encrypted passwords, and access control.* | *IDE, Supabase* | *04-09-2025 to 24-11-2025* | *Ángel Rojas / Benjamín Hidalgo* | *High priority for early testing.* |
| *Quality Management* | *Test Plan and Execution* | *Define and apply functional and non-functional tests according to ERS.* | *Test environment, QA plan* | *25-11-2025 to 28-11-2025* | *Benjamín Hidalgo* | *Includes testing with end users.* |
| *Project Management* | *User Manual* | *Drafting the manual to guide older adults and administrators.* | *Computer, Word* | *25-11-2025 to 28-11-2025* | *Entire Team* | *Written with a focus on accessibility.* |
| *Implementation* | *Production Migration and Closure* | *Move to production, training, closure report, and final presentation.* | *Servers, manuals, documentation* | *01-12-2025 to 05-12-2025* | *Entire Team* | *Official project closure signature.* |

| **Gantt Chart** |
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| Find a Gantt chart format that suits you and organize in it the activities planned in the previous point, 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 included in the Title Portfolio course. |

| **Task** | **Phase 1** | | | | **Phase 2** | | | | | | | | | | | | **Phase 3** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **W1** | **W 2** | **W 3** | **W 4** | **W 5** | **W 6** | **W 7** | **W 8** | **W 9** | **W 10** | **W 11** | **W 12** | **W 13** | **W 14** | **W 15** | **W 16** | | **W 17** | **W 18** |
| **Project Definition and Objectives** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Project Charter** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Definition of General Requirements** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **ERS Document** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Mockups and UI/UX Design** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Architecture and Database Document** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Use Cases** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Development of Main Modules** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Software Development** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Database Scripts Creation (Tables, PL/SQL)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Final System Integration** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **QA and Testing** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Test Plan and Validation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Production Implementation** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **User Manuals** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| **Closure Report and Final Delivery** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |