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1. **PART I**

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

| Student Name | **Esteban Fierro**  **Francisca Herrera** |
| --- | --- |
| Rut | **21248934-4**  **20838445-7** |
| Degree Program | **Computer Engineering** |
| Campus | **San Joaquín** |

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

| Project Name | *ComunicaTEA (temporary)* |
| --- | --- |
| Performance Area(s) | *-Inclusive software development*  *-User-centered design*  *-Technological innovation applied to special education* |
| Competencies | *-Teamwork -Autonomous Learning -Documentation Skills*  *-Analytical Thinking -Empathetic Mindset -Advanced English Proficiency*  *-Advanced Knowledge of Programs and Programming Languages* |

| **3. APT Project Justification** |
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| Below, you will find several fields that you must complete with the requested information. This section aims for you to describe your project in detail and justify its relevance and significance. |

| Project Relevance | *People with Autism Spectrum Disorder (ASD), especially school-aged children, face verbal communication difficulties that can lead to frustration, isolation, and barriers to learning.*  *Today, many schools and families use PECS physical cards (Picture Exchange Communication System), but their use can be limited or impractical in some contexts.*  *This project proposes the development of a mobile application that digitizes these cards, allowing children to select images and words to express emotions, needs, or desires.*  *It focuses on inclusive educational contexts, particularly in elementary schools in the Metropolitan Region that serve children with ASD. It would benefit teachers, therapists, caregivers, and most importantly the children themselves, by promoting communicative autonomy.* |
| --- | --- |
| APT Project Description | *The project aims to develop ComunicaTEA, a mobile app that facilitates communication for people with ASD through customizable digital cards with images, categories, and audio support. It will use agile methodology and accessible design principles, incorporating feedback from special education experts.* |
| Relevance to Graduate Profile | *The project directly relates to the graduate profile as it requires designing a real technological solution focused on specific user needs with high social impact. Key competencies are applied, such as software development, user experience design, and technology integration to solve a concrete problem — communication inclusion.* |
| Relation to Professional Interests | *Although we are interested in more specific fields, this project allows us to apply technical knowledge in a real and meaningful context. It also strengthens skills such as user-centered design and application architecture, which are essential for professional development, since in the job market one does not always work in preferred areas, and it opens more opportunities for future employment.* |
| Feasibility of APT Project Development | ***Strengths: -*** *General interest aligned with the project, which provides better insight during development. -Availability of inspirational material such as psychology resources, books, and existing PECS cards. -Documented tools: development frameworks like Ionic, Angular, React Native, or Unity (commonly for games but can support dynamic “card” apps), graphic resources (free icons/images), and a mobile device for testing.*  ***Weaknesses: -****Semester duration: limited to 4 months, while projects often take longer. -Additional workload: internship and other courses running at the same time. -Inexperience or dissatisfaction with tools: although some documentation and experience exist, lack of mastery and previous negative experiences may cause errors, motivation issues, or environment problems.* |

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 stated clearly and concisely, without providing further explanations; in other words, they should be understandable on their own. It is recommended to write them using an infinitive verb, as this requires specifying concrete actions. |

| General Objective | *To create an application that allows and/or facilitates communication for people with ASD through the use of customizable cards.* |
| --- | --- |
| Specific Objectives | * *Design an accessible and usable app interface.* * *Implement a system of digital cards with categories, images, and audio support.* * *Carry out a testing phase on mobile devices to validate the app.* |

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

| Methodology Description |
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| *The agile Scrum methodology was chosen, as it organizes work in short cycles with partial and functional deliveries. This is suitable given the limited semester time. It also allows constant feedback, adaptation to changing requirements, and keeps the team organized with defined roles and tasks.*  ***Work Stages:***   * *Requirements gathering (documentation)* * *Design and prototyping (programming)* * *Testing stage*   ***Roles:***   * *Scrum Master: Francisca Herrera* * *Team Developer: Esteban Fierro / Francisca Herrera* * *Product Owner: Esteban Fierro* |

| **6. Evidence** |
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| Next, describe which evidences will be evaluated in the progress report and in the final report of your APT project. These evidences must be agreed upon with your instructor. Evidence refers to the products developed during the project, whose purpose is to showcase or document how the work has been implemented. |

| **Type of Evidence**  **(avance o final)** | **Name of Evidence** | **Description** | **Justification** |
| --- | --- | --- | --- |
| **Progress** | **Product Backlog** | ***Document registering all project requirements and prioritized functionalities defined with the client.*** | **Confirms requirements were properly defined to apply Scrum methodology.** |
| **Progress** | **Sprint Backlog** | ***Set of tasks selected from the Product Backlog for each sprint.*** | **Distributes team tasks and helps planning.** |
| **Progress** | **Task Board** | ***Visual tool to monitor task status and progress.*** | **Tracks project progress and teamwork.** |
| **Progress** | **Definition of Done** | ***List of criteria each function must meet to be considered complete.*** | **Ensures deliverable quality and consistency.** |
| **Progress** | **Sprint Deliverables** | ***Prototypes created from sprint tasks.*** | **Allows clients to validate progress.** |
| **Progress** | **Meeting Minutes** | ***Record of planned meetings and follow-ups*** | **Provides evidence of meetings and agreements.** |
| **Progress** | **Mockups** | **Visual prototypes of the app** | **Validate proposal before real development.** |
| **Progress** | **Database Design** | **Logical model of the database.** | **Shows database structure and flow.** |
| **Final** | **Functional Mobile App** | **Final prototype including navigation, customization, and card reading.** | **Main project evidence, showing a real solution.** |
| **Final** | **QA Test Results** | **Results from prototype testing.** | **Ensures software quality and requirement compliance.** |
| **Final** | **Technical Documentation** | **Manual including system architecture, integrations, database design, and code explanation** | **Ensures system maintainability and guides future developers.** |
| **Final** | **Sprint Review** | **Final demo with client showing implemented functionalities.** | **Validates compliance with project scope.** |
| **Final** | **Final Retrospective** | **Team’s lessons, improvements, and conclusions on applying Scrum.** | **Identifies strengths and areas of improvement.** |

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

| **APT Project Work Plan** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Competence/Unit | Activities/Tasks | Task Description | Resources | Duration | Responsible[[1]](#footnote-0) | Observations |
| *IT Project Management* | Requirements Gathering | Collect information with teachers and literature review | *PC, internet connection, PECS guides* | *1 week* | Francisca Herrera  Esteban Fierro | Basis for user stories |
| *Data Model Construction* | *Database Design* | *Define data model for cards, categories, and audio* | *PC, modeling tools* | *1 week* | Francisca Herrera  Esteban Fierro | *Must be scalable and flexible* |
| *Software Solution Development* | *App Development – digital cards* | *Develop initial interface with cards and categories* | *PC, frameworks, documentation* | *6 weeks* | *Esteban Fierro*  *Francisca Herrera* | *Restriction: cross-platform compatibility* |
| *Certification Testing* | *Functional & usability testing* | *Validate system on mobile devices, fix errors* | *Mobile device, user feedback* | *1 week* | *QA/User* | *Include user feedback* |
| *English Communication* | *Documentation in English* | *Write short manual in English with main features* | *Pc, Text editor* | *5 days* | *Esteban Fierro*  *Francisca Herrera* | *Focus on elementary vocabulary* |
| *IT Project Management* | *Final Presentation* | *Prepare and present project to teachers/specialists* | *PowerPoint/Canva presentation* | *1 week* | *Esteban Fierro*  *Francisca Herrera* | *Include demo of the app* |

| **8. Product Backlog** |
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| User Story | Alias | Priority | Comments |
| --- | --- | --- | --- |
| As a user, I want the interface to be simple and accessible so I can navigate without difficulty | Simple Interface | High | Validated with Figma prototype and user testing. |
| As a user, I want the page to be responsive, fast, and work properly | Functionality | High | Validated with timer to measure page speed |
| As a person with ASD, I want to select cards with images and audio to communicate my needs | Basic Cards | High | Initial reduced set of cards for testing. |
| As a client, I want to receive periodic reports on project progress. | Progress Tracking | High | Reports/documents on progress will be delivered |
| As a user, I want to customize app colors to fit my preferences. | Personalization | Medium | Settings section for customization |
| As a user, I want to mark cards as favorites for faster access | Favorites System | Low | User-defined favorite card filter |
| As a user, I want the app to work offline. | Offline use | High | Essential for schools with limited connectivity. |
| As a client, I want a functional prototype in later project stages. | Functional Prototype | High | Prototype/mockups showing main features. |
| As a user, I want cards to have simple animations when selected. | Card GIFs | Low | Cards will display looping GIFs when selected. |
| As a person with ASD, I want the app to read cards with a neutral voice | Card Audio | High | Cards will play recorded names aloud. |
| As a user, I want AI to generate coherent sentences when selecting multiple cards | AI Sentence Generation | High | Example: instead of “I eat apple”, it reads “I want to eat an apple.” |

**Detailed Product Backlog:**

[**Product Backlog-English.xlsx**](https://docs.google.com/spreadsheets/d/1elQGcKhvyW86uInGvO37Y4SAUV4bsddr/edit?gid=224525001#gid=224525001)

1. In case the APT Project is a group project, this column should indicate the name of the person responsible for each task or activity. This will later allow differentiation of the evaluation for each member. [↑](#footnote-ref-0)