

1. **PART I**

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

| Student Name | **Fernanda Osorio y Denisse Fuentes** |
| --- | --- |
| Rut | **20.858.853-2; 21.081.510-4** |
| Degree / Program | **Ingeniería en Informática** |
| Campus | **Maipú** |

| **2. APT Project Description** |
| --- |
| In this section, 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 areas of professional practice, also mention which of these areas your project is related to. |

| Project Name | **BloomClass** |
| --- | --- |
| Area(s) of Practice | **Software Development** |
| Competencies | Develop a software solution using techniques that systematize the development and maintenance process, ensuring the achievement of objectives.  Program queries or routines to manipulate information in a database according to the organization’s requirements.  Build programs and routines of varying complexity to solve organizational requirements, aligned with market technologies and using good coding practices.  Build the architectural model of a systemic solution that supports business processes according to the organization’s requirements and industry standards.  Resolve systemic vulnerabilities to ensure that the software built complies with industry security standards.  Manage IT projects, offering alternatives for decision-making according to organizational requirements.  Develop innovative projects that add value to social and productive contexts, according to the needs of the environment. |

| **3. APT Project Justification** |
| --- |
| Below are several fields that you need to complete with the requested information. This section aims for you to describe your project in detail and justify its relevance and appropriateness. |

| Relevance of the APT Project | *Every project, whether it is an innovation, product, service, etc., aims to respond to a situation or problem. Indicate what problem your project seeks to solve and its relevance to the job market in your field of study. Also mention the context in which this issue takes place (location, who it will impact, etc.). It is important that this problem is relevant within the professional context, and that its resolution represents a real or simulated contribution to the organization or environment where it is situated. Some guiding questions for this section are:*  *Why did you choose this topic? Why is it relevant to the job market in your field of study?*  *As a group, we chose this topic because we want to provide a solution that supports children, given that we are currently experiencing a boom in the use of technology in almost every aspect of human life. It is important to provide tools that encourage proper use of technology in educational environments.*  *The topic requires developing software that addresses all these needs, which means putting into practice different competencies that we will use throughout our professional development.* *Where is the situation you will address located? (e.g., Country, region, municipality, or institution) What are the main characteristics of that place?* *The situation is located in Chile, specifically within the Chilean educational context, where there is limited access to dynamic and didactic methodologies. Chile has made progress in connectivity and Internet access, especially after the pandemic, which has boosted the adoption of digital platforms in households and schools.*  Who does the situation you are going to address affect or impact? (e.g., age group, users of a service, etc.)  The situation primarily affects school students in Chile, who need new, more dynamic and motivating learning methodologies. It also impacts teachers and educational institutions, who will be able to have an innovative digital tool to reinforce learning.  What would be the value contribution (real or simulated) of your APT Project to the work and/or social context in which it would be situated?  The project provides social value by facilitating a more engaging and entertaining learning experience for students, and professional value by giving teachers and educational institutions an innovative technological tool that improves teaching and promotes the appropriate use of technology, using it as support for the educational process rather than as a distraction.dynamic and motivating. It also impacts teachers and educational institutions, which will be able to rely on an innovative digital tool to reinforce learning. |
| --- | --- |
| Project Description | Objective  The goal is to provide school students with a digital educational platform that motivates learning through dynamic, didactic, and entertaining methods, while also promoting the appropriate use of technology in education.  Project Description  The project will involve the development of an interactive educational platform that integrates resources like mini-games, rewards, and adapted content to encourage active student participation and strengthen the teaching-learning process. To address the identified problem, the aim is to deliver a tool that is accessible to both students and teachers, complementing traditional classes and allowing digital technologies to be used as a pedagogical support rather than a distraction. |
| Relevance of the Project to the Graduate Profile | **Justify how your APT Project is related to the graduate profile of your degree and, in particular, to the competencies of the graduate profile you selected earlier.**  **How is the APT Project related to the graduate profile of your degree?**  As mentioned in question 2 of section 3, to address the needs related to the problem at hand, it is important to provide an IT solution that covers all the points to be resolved. To do this, we will apply the following competencies:   * Build the architectural model of a systemic solution. * Manage IT projects. * Develop a software solution. * Program queries or routines to manipulate information from a database. * Construct programs and routines of varying complexity to meet organizational requirements. * Resolve systemic vulnerabilities to ensure that the developed software complies with industry security standards.   **Why are the competencies you selected necessary to solve the problem you will work on?**  Although we will be working with an agile framework methodology (Kanban), it is important to maintain structure and order, which applies to any IT project. This includes designing and architecting how systems will interact, developing software that meets all market standards, continuous testing, and so on. |
| Project Relevance to the Graduation Profile | The development of this project covers a bit of most of the topics we've studied throughout our degree, including software development, database programming, design and architecture, and project management. Having the freedom to build this solution our way, we realized that most of the areas we're working on are of great interest to us.  What are your professional interests?  What aspects of your professional interests are reflected in your APT Project?  Database modeling, programming, and querying.  Software development.  Project management.  Architecture and requirements management.  How will completing this APT Project contribute to your professional development?  To complete certain parts of our project, we'll need to continue researching how specific technologies work. This ongoing acquisition of knowledge is always a great contribution to our professional development. Furthermore, the presentation of this portfolio encourages us to keep strengthening our soft skills. |
| Technical Feasibility | We believe it is feasible to carry out this APT project since all the information is available online and provided by the Ministry of Education itself. We have the knowledge to handle approximately 90% of the tasks required to build the website, and we have the time to meet all the project requirements. Some factors to consider when assessing feasibility are:   * **Semester duration:** 18 weeks, 342 hours. * **Working hours:** 19 hours per week. * **Tools:** Visual Studio Code, Figma, GitHub, databases (Google, Amazon, etc.), Trello, etc. * **Factors that facilitate development:** Copilot, W3Schools, and similar resources. * **Factors that may hinder development:** inability to pay for necessary licenses (hosting, storage, design tools), loss of progress, system incompatibilities, etc. |

1. **PART II**

| **4. Objectives** |
| --- |
| 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 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 develop an interactive digital educational platform that motivates learning among school students in Chile, promoting the proper use of technology as an educational support tool. |
| --- | --- |
| Specific Objectives | * Design a user-friendly and intuitive interface that facilitates access for students and teachers. * Incorporate didactic methodologies such as mini-games and rewards. * Promote the responsible use of technology in educational environments. * Provide teachers with a support tool to complement their classes. |

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

| Methodology Description |
| --- |
| This section describes how the previously identified problem or situation will be addressed, specifying the methodology that will be used to achieve the project’s objective. For group projects, it is necessary to define the roles, tasks, and responsibilities assigned to each team member.  To achieve the project objectives, an **Agile Kanban methodology** will be used. This approach allows tasks to be organized, visualized, and prioritized flexibly, ensuring continuous monitoring of the progress of the educational platform. The process includes:   * **Research and analysis:** Gather information on educational needs, student preferences, and existing tools. * **Platform design:** Create the structure, interface, and interactive features, including mini-games and rewards. * **Development and programming:** Implement the platform’s functionalities, ensuring accessibility and usability. * **Testing and improvements:** Conduct validation tests of the product and its processes, and develop improvements based on the results. * **Final presentation of the completed product.** |

| **6. Evidence** |
| --- |
| Below, describe the evidence that will be evaluated in the progress report and the final report of your APT project. This evidence must be agreed upon with your instructor.  Evidence refers to the deliverables produced during the project, which aim to demonstrate or document how the work has been implemented. |

| **Type of Evidence**  **(progress or final)** | **Name of the Evidence** | **Description** | **Justification** |
| --- | --- | --- | --- |
| | Final | | --- | | |  | | --- |  | Requirements List | | --- | | | Document that compiles all the needs, functionalities, and constraints that the project must meet. | | --- | | | Defines what the system will do and facilitates project planning and monitoring. | | --- | |
| | Final | | --- |  |  | | --- |  |  | | --- |  |  | | --- | | |  | | --- |  | Gantt Chart | | --- | | | Bar chart showing the project tasks,  their duration, and sequence over  time. | | --- |  |  | | --- | | | Helps plan, organize, and  control project progress,  it easier to visualize task  timing and dependencies. | | --- | |
| | Final | | --- | | |  | | --- |  | Test Cases | | --- | | | Define inputs, actions, expected results  and actual results for each  functionality. | | --- | | | Demonstrates that each  system component,  previously assigned  requirement, meets its  acceptance criteria. | | --- | |
| | Final | | --- | | |  | | --- |  | Test Plan | | --- |  |  | | --- |  |  | | --- | | |  | | --- |  |  | | --- |  | Document specifying the scope, type, tools, and responsible parties for testing. | | --- | | |  | | --- |  |  | | --- |  |  | | --- |  | Provides an intuitive reference for any project stakeholder and ensures product quality. | | --- | |
| Final | UML Diagrams | Set of diagrams that help understand how the system works, how its components relate, and how users interact. | Visual elements help stakeholders understand system functionality and interactions. |
| Final | Mockups | Visual representation of the system to be created, showing element layout without functionality.  Allows visualization and validation of the design before development. | Allows visualization and validation of the design before development. |
| Final | Task Board | Visual tool that organizes work into cards.  Enables planning and tracking of project tasks. | Enables planning and tracking  of project tasks. |
| Final | Versioned Code (GitHub) | Version control platform that stores, manages, and shares projects in repositories. | Facilitates teamwork, version control, organized workflow, and prevents code loss. |
| Final | Website | Final product with all components tested and documented. | Shows that all requirements have been met and demonstrates the completed system. |

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

| **Work Plan APT Project** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Competency / Unit | Activity / Task | Activity / Task Description | Resources | Duration | Responsible | Observations |
| | Project Management | | --- | | | Define project objectives and thesis scope | | --- | | | Determine what will be developed in BlommClass, requirements, and goals | | --- | | | Google Docs | | --- | | | *4 weeks and 1 day* | | --- | | | Both | | --- | | | **Facilitators:** previous experience in academic project management. **Challenges:** defining a realistic scope within available time. | | --- | |
| Requirements Analysis | Gather functional and non-functional requirements | Collect and document functionalities and constraints | Google Docs | *8 days.* | Both | Facilitator: clarity in objectives. Challenges: risk of poorly defined or incomplete requirements. |
| Interface Design. | Create mockups and prototypes | Design main screens in Canva | Canva | *8 days* | Both | Facilitator: use  of intuitive tools. |
| System Architecture | Model UML diagrams | Use case, class, sequence, and deployment diagrams. | Draw.io, Lucidchart | 3 days | Both | Facilitator: knowledge acquired in the course. Challenge: complexity in representing interactions. |
| Frontend Development | Implement web interface | Program screens (login, navbar, games, rewards) | Visual Studio Code | 2 weeks | *Both* | — |
| Backend Development | Program system logic | Implement login functions, activities, and system logic | Visual Studio Code | *2 weeks* | *Both* | — |
| Version Control | Manage code in GitHub | Create repository and maintain organized commits | GitHub | Entire semester | Both | Facilitator: allows collaborative work and backup. |
| Testing | Create a test plan  Develop test plan, group tests according to test cases, and execute them | Testing  Create a test plan  Develop test plan, group tests according to test cases, and execute them | Soap UI, Postman | 19 days | Both | Ensures that standards are met and all components function correctly. |

| **8. Gantt Chart** |
| --- |
| Find a Gantt chart format that suits you and organize the planned activities from the previous point, considering the timeframe assigned for the development of your APT Project. You must maintain the academic period’s timeline across the three phases included in the Capstone Portfolio course. |

