}

**PART I**

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

| Name of students | **Karla Martínez - Cristian Ojeda - Michael Marin - Vicente Laguna** |
| --- | --- |
| Rut | **20.814.686-6 - 20.454.743-2 - 20.520.369-9 - 19.516-390-1** |
| Career | **Ingeniería en informática** |
| Sede | **Puente Alto** |

| **2. APT Project Description** |
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| In the description you must briefly state the name of your APT project and the competencies of the graduate profile that you are going to put into practice. If performance areas are defined in your career, also mention to which performance areas the project is linked. |

| Project name | **Bytemart** |
| --- | --- |
| Area(s) of performance(s) | Web Development, Database Management, Platform Integration, Desktop Application Development, Automation and Web Scraping, Data Analysis and Publishing, IT Project Management, Risk Management. |
| Competences | Solution analysis and proposal, Software development, Data modeling, Data querying and manipulation, Solution architecture, IT project management and data transformation. |

| **3. APT Project Background** |
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| Below you will find different fields that you must fill in with the requested information. This section aims to describe in detail your project and justify its relevance and pertinence. |

| Relevance of the APT project | The proposed project seeks to solve the need to automate and optimize business processes by integrating a solution that includes a website, a desktop application and data analysis, given the growing demand for these digital tools that are very efficient in the processing of important information for companies.  This topic is chosen because of the ability to generate a technological solution for multiple platforms and services. This project addresses different skills related to application development, RPA, database and project management.  The context is a business environment, where an organization needs to improve its current processes, and the organization may be located anywhere where there is a need for a digitized tool.  Businesses can see increased value in the integration of new technologies that free up repetitive tasks, reduce errors, enable more accurate decision making based on automated data collection and raise market positioning. |
| --- | --- |
| APT Project Description | Bytemart is a solution designed for the optimisation and automation of processes using RPA with Python, together with the development of a website with Python Flask, a Mysql database, a desktop application, APIS integration and data analysis published through Power BI. |
| Relevance of the project to the graduate profile | Since this project contemplates different aspects of computer science such as the design, development, implementation and deployment of solutions with digital tools, the different associated technologies, standards and competences provided by the degree course are put into practice.  The competences applied for the creation of this project allow us to raise a good management of the project, apply the design and development of solutions, evaluate the applications that we will develop, generate an alignment of the purpose of what we are willing to design, and generate a fluid communication for constant improvement. |
| Relationship to professional interests | This APT project is directly related to our professional interests in the development of innovative, scalable and adaptable technological solutions for the market. By working on this project we are applying all the knowledge acquired during the course of the degree, providing greater strength to the different skills developed throughout the learning process.  The completion of this project presents a valuable opportunity for professional advancement, thus preparing us to make a significant contribution in the labour field in different real scenarios. |
| Feasibility of developing the FFW Project | During the development of ByteMart is feasible within 3 months, giving approximately 4 hours to the subject. For the development of the project, tools such as Mysql database, Visual Studio for the development of the web platform, netbeans for desktop development, Power BI for data analysis, and adequate workstations are needed.  Some of the external factors that facilitate the development is the access to certain tools such as PowerBi, Mysql and Flask, through online resources that facilitate the implementation of the components, another factor is the market demand to automate business processes, allows the development of this project as a tool to help eliminate repetitive tasks.  External factors that may hinder the development, technical problems may arise when incorporating the APIs or in the configuration of the RPA, this could affect the planning. |

1. **PART II**

| **4. Objectives** |
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| In this section you should define general and specific objectives of the FFW Project. It is important to clarify that the objectives should be stated clearly, concisely and without further explanation, i.e. they should be self-explanatory. It is suggested to write them using an infinitive verb, as this forces you to specify concrete actions. |

| General objective | Automate and optimize business processes by integrating a solution that includes a website, desktop application, APIS integration and data analytics. This enables you to improve operability, reduce errors and elevate your market position. |
| --- | --- |
| Specific objectives | * Develop a fully functional and secure e-commerce platform. * To be able to integrate external APIS systems. * To be able to implement data analysis to monitor sales behavior and other key business metrics. * To implement innovative technologies that allow the platform to be eye-catching and innovative. * Ensure that the system complies with the automation and optimisation of relevant processes for the management of business information. |

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

| Description of the Methodology |
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| In this project we will use the traditional methodology, as it is the most suitable for this type of project. This methodology is focused on linear processes, documentation, planning and prioritization of tasks. It benefits us to have clearer objectives, controlled processes, clearer documentation and more responsibility as a team. |

| **6. Evidence** |
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| Then describe what evidence will be assessed in the progress report and in the final report of your FFW project. This evidence should be agreed with your teacher. Evidence means products that are developed during the project and whose purpose is to make visible or document how the work has been implemented. |

| **Type of evidence**  **(progress or final)** | **Name of the evidence** | **Description** | **Justification** |
| --- | --- | --- | --- |
| **Advance** | Script desarrollo página Web en Flask | Script containing the information about the database models, web elements, backend and styles. |  |
| **Advance** | Database connection | The web system is currently designed to connect to Mysql creating and migrating the different models designed so far. |  |
| **Advance** | Github creation with hierarchy | Github which hosts all the information of the project under development. |  |
| **Advance** | Initial documentation of project definition information | Documentation containing information on the competences and skills of each participant and the definition of the designed project. |  |

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

| **Work Plan FFW Project** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Competence or units of competence | Name of Activities/Tasks | Description Activities/Tasks | Resources | Duration of the activity  (hours) | Responsible[[1]](#footnote-0) | Observations |
| *Design and requirements management* | *Requirements taking* | *Document functional and non-functional requirements.* | *Computer, Trello* | *12* | *Cristian Ojeda - Michael Marin* | *Verify that requirements are documented.* |
| *Design and requirements management* | *Use Case Development* | *Develop cases where the user's interaction with the system is simulated, defines functionalities.* | *Miro* | *12* | *Karla Martinez* | *Use cases must follow pre-defined requirements.* |
| *Software architecture and design* | *Creation of flowchart* | *Process design and data flow of the system.* | *Miro* | *16* | *Cristian Ojeda* | *Flowcharts must follow pre-defined requirements.* |
| *Software architecture and design* | *Creation of sequence diagram* | *Create a sequence of user interactions according to the process being executed.* | *Miro* | *12* | *Michael Marin* | *Ensure that the sequence diagrams can cover the interactions that the system has.* |
| *Software architecture and design* | *Software architecture design* | *Design the structure where the different modules are connected.* | *DrawIO* | *20* | *Vicente Laguna* | *The architecture must be easy to maintain and scalable.* |
| *Software architecture and design* | *Creation of database diagram* | *Create a database diagram that allows the detail of its tables and relationships for the flow of information.* | *Mysql* | *20* | *Karla Martinez* | *Database diagrams must be validated for further development.* |
| *Project management* | *Development of articles of association* | *Define project objectives, timeline, scope and roles to be defined in the team.* | *Template of articles of incorporation* | *12* | *Karla Martinez - Cristian Ojeda - Michael Marin - Vicente Laguna* | *Articles of incorporation must be approved by interested parties.* |
| *Web application development* | *Web environment development* | *Create a web interface, including login, database connection, shopping cart, online payment via an api* | *Visual Studio* | *40* | *Vicente laguna - Karla Martinez* | *100% functional interface and database integration.* |
| *Desktop application development* | *Desktop environment development* | *Create interfaces to manage inventory, user roles and orders.* | *Netbeans* | *40* | *Cristian Ojeda - Michael Marin* | *Integrate with database and ensure resource management.* |
| *Platform integration* | *Creation of apis* | *Allows communication between modules and validation of certain processes.* | *Fast Api* | *28* | *Michel Marin - Karla Martinez* | *The development of apis must be reliable to perform processes.* |
| *Platform integration* | *Payment api integration* | *Set up payment APIs to make money transactions secure.* | *Fast Api* | *16* | *Cristian Ojeda* | *They must be tested to ensure information security for transactions.* |
| *Process Automation (RPA)* | *Bot integration for web scraping* | *Configure bot to extract product information from the web and store it in the database.* | *Python, Mysql* | *20* | *Vicente Laguna* | *Verify that the bot extracts accurate and error-free information.* |
| *Data analysis* | *Data analysis of the information extracted by web scraping.* | *Power BI will visualize the data to generate reports and help the company make decisions.* | *Power BI, python* | *16* | *Karla Martinez - Vicente Laguna* | *Confirm that the reports generated are useful, to provide insights from the data analyzed.* |
| *Evaluating software quality* | *System testing and corrections* | *Testing of different modules, web and desktop development, Apis integration and automation.* | *Selenium* | *28* | *Karla Martinez - Cristian Ojeda - Michael Marin - Vicente Laguna* | *Testing should ensure the correct functioning of the system and its processes.* |
| *Evaluating software quality* | *White March* | *Perform processes for testing, in an environment simulating real conditions.* | *Monitoring systems, testing environment.* | *20* | *Karla Martinez - Cristian Ojeda - Michael Marin - Vicente Laguna* | *Detect problems in the real environment before uploading to a production environment.* |

| **8. 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 of the Degree Portfolio subject. |

| **Activity** | **Phase 1** | | | | **Phase 2** | | | | | | | | | | | | **Phase 3** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S 1** | **S 2** | **S 3** | **S 4** | **S 5** | **S 6** | **S 7** | **S 8** | **S 9** | **S 10** | **S 11** | **S 12** | **S 13** | **S 14** | **S 15** | **S 16** | | **S 17** | **S 18** |
| *Requirements taking* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| *Use Case Development* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| *Creation of flowchart* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| *Creation of sequence diagram* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Software architecture design* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Creation of database diagram* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Development of articles of association* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Web environment development* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Desktop environment development* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Creation of apis* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Payment api integration* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Bot integration for web scraping* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Data analysis of the information extracted by web scraping.* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *System testing and corrections* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *White March* |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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