**Guía3. Informe final Proyecto APT**

**Asignatura Capstone**

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| **1. Final Report APT Project** |
| The objective of this report is for you to describe the most relevant aspects of your APT project. It is important that you justify the decisions you had to make throughout the process.  Below, you will find different sections that you should complete with the requested information, which provide a summary of your APT project and its main results. |

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| Project Name | *Garden Store* |
| Area(s) of Expertise | *Mention the area(s) of expertise from your Study Plan that your APT Project addressed:*   * *Software Development* * *Database Administration* * *Mobile Application Development* * *Project Management* * *Software Quality* * *Data Science* * *Machine Learning and Deep Learning* |
| Competencies | *Mention the competencies from your Study Plan that you addressed in your APT Project:*   * *Proficiency in programming languages such as TypeScript and Python.* * *Proficiency with frameworks like Angular, NestJS, and Ionic.* * *Design and programming of relational databases.* * *Data analysis, using tools or libraries for data science.* * *Management and utilization of predictive models, including training and evaluation of machine learning models.* * *Proficiency in the IT environment, such as diagrams, use cases, and project management plans.* * *Management of the testing environment and specific testing in the project* |

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| **Contenidos del informe final** | |
| 1. Relevance of the APT Project | *The Garden Store company is experiencing some management and logistics limitations with its products and is not reaching all the users it wants to. Therefore, it needs to update its architecture to handle a higher load and improve product management, allowing it to expand its current user base.*  *The solution is to develop and implement a platform for buying and selling gardening products, integrating the Transbank and Mercado Pago payment methods, with a dashboard that includes a virtual assistant providing key data on the current status of sales, products, users, and site activity. Additionally, it involves implementing a machine learning model focused on identifying fraudulent transactions by analyzing transactions made by customers.*  *We chose this topic because it is not widely utilized or addressed by many companies; there is not much market focus on this area. We wanted to try something a bit different from what is typically seen in the market by implementing unique functionality or functionalities in our solution.*  *The location where this issue will be addressed is in the south-central region of Chile, an area characterized by high humidity, abundant vegetation, and a more rural environment. It is also an agricultural area with many different types of businesses.* |
| 2. Objectives | ***General Objective:*** *To develop and implement a platform for buying and selling gardening products that is easy to use, secure, and capable of connecting gardening product sellers and buyers.*  ***Specific Objectives:***   * *Develop a user and product management system.* * *Implement a product catalog with advanced search options.* * *Create a sales and purchasing management system, including a shopping cart and payment gateway.* * *Design an intuitive and attractive user interface.* * *Include an educational resources section.* * *Develop a product delivery validation system using QR code scanning.* * *Implement an admin dashboard.* * *Integrate a machine learning model focused on identifying fraudulent transactions.* |
| 3. Methodology | ***Methodology Used and Its Relevance to Achieving Objectives*** *The methodology used was the Spiral Model, which focuses on the corresponding phases of this work approach, with characteristics such as:*   * ***Objective Determination:*** *The system requirements are defined in as much detail as possible, including performance, hardware/software interfaces, key success indicators, etc., and the objectives to be associated with the current development cycle are considered.* * ***Evaluation of Alternatives and Risks:*** *Risks that may hinder the project's success are identified, such as lack of experience, new technologies, tight schedules, inadequate processes, etc., and the most cost-effective and low-risk strategies are implemented.* * ***Development:*** *Using the selected technology and solution. With each iteration, a better version of the application is created. The actual code is written and tested multiple times until the desired result is achieved, which will then serve as the foundation for future development steps.* * ***Validation:*** *This is an ongoing process that occurs throughout the entire development. Feedback is gathered and adjustments are made in each cycle to ensure that the final product meets expectations.* * ***Deployment:*** *Implement the functional version of the system in the production environment. This may include launching a new software version, configuring servers and components, among others.*   *This methodology was chosen because it can be used traditionally and fits within the 6-month project work process. The goal is to work in an agile format and get accustomed to a faster and more efficient work method. It was also selected because of the features it implements, particularly its risk management methods, which allocate a budget to these important areas of the project.* |
| 4. Development | ***Description of Phases Planning Phase****: In the planning phase, the foundations of the project are defined, such as resources, budget, and schedule, along with a detailed timeline. At the same time, technical, financial, and legal aspects are evaluated, risks are identified, and mitigation strategies are developed.* ***Design and Risk Phase****: This phase details and documents what the client expects from the software, including each functionality and the specific features of the system. It is essential to establish a clear and common understanding among all parties involved regarding the expected outcomes of the software.* ***Development Phase****: Developers modify the software using the selected programming language. This phase requires following best coding practices to ensure that the software is scalable, efficient, and maintainable, based on the approved prototypes and documented requirements.* ***Testing Phase****: This stage involves complete testing to detect errors and ensure that each aspect of the software functions as expected. Testing can be automated or manual and includes unit, integration, system, and user acceptance tests.* ***Deployment Phase****: The final phase of the lifecycle includes continuous monitoring of the software to ensure it operates efficiently. Adjustments and updates are made, and new functionalities are added to adapt the software to business needs and technological advancements.*  ***2- Challenges and Facilitators in the Development of the APT Project.*** *Communication with the team was essential as the phases were developed according to scheduled meetings. The tools used for these meetings and work were Draw.io, Discord, Visual Studio, Drive, and GitHub. The challenges encountered by the team were related to working hours or deadlines, which sometimes put the team in a difficult position repeatedly.*  ***3- Adjustments Made.*** *The problems were addressed calmly and gradually, as the primary focus was to develop a respectful and peaceful environment for all team members. Several adjustments were made. Management, leadership, and communication techniques had to be implemented, and these were supervised by the project manager and architect. Schedules were created for some team members, and they were asked to make an extra effort to carry out the project.* |
| 5. Evidence | *Some of the evidence we have to visualize the progress made in our APT project can be found at the following link, which will take you to a page called GitHub:*  [*https://github.com/Pipe930/Garden-Store-Capstone.git*](https://github.com/Pipe930/Garden-Store-Capstone.git)  *This link will contain all of our progress, both group and individual, made throughout the project. It will show each of the phases or stages carried out for the development and final result of the project.* |
| 6. Professional Interests and Projections | ***Reflection on the Contribution of the APT Project to the Development of Professional Interests***  *Felipe Sanchez: It was quite useful to gain a greater understanding of my professional interests, as my focus lies in software development and data science. My professional interests have remained the same since the last time I evaluated and confirmed them.*  *Nestor Aviles: This project helped me focus on project management and evaluation, as these aspects were carried through from the beginning to the end, ensuring that everything done had a foundation aimed at the project's development. My interests have stayed the same since I reached the halfway point in my studies, and they still remain unchanged today.*  *Ignacio Jimenez: My main professional interests would be identifying and managing risks when carrying out a job, Requirements Analysis and the area of ​​performance that interests me most would be the Programming and Management of IT projects.*  *Diego Barrera: During the course of this project it helped me to improve my general knowledge of how to create and develop a project from scratch. My professional interests that I set at the beginning never changed during the development of the project because I know what I like and what I am good at. The only thing that changed my interests a little bit was my internship to be able to merge the IT and logistics area.*  ***2. Career Projections from the APT Project***  *Felipe Sanchez: My job projections after completing this project are to work in small and medium-sized companies so I can start gaining work experience.*  *Nestor Aviles: My future interests would be to continue developing my management and evaluation skills until I reach a specialization as a software architect, in addition to being able to handle various programming languages proficiently. I hope to secure a role in the IT or cybersecurity sector, but this will require extensive work experience and specialized knowledge.*  *Ignacio Jimenez: I would like to work in a company where I can develop my project management skills where the creation of documents and mobile applications is required.*  *Diego Barrera: My interests in which I would like to deepen would be in agile project management to become a Product Owner, in addition to improve myself in the database. But also an area that is not related to IT is the logistics area because I have the conviction that this merger has a huge potential. My projection is to improve in all areas, both professionally and personally, but my goal is to become the owner of my own company.* |