**Guide 3. Final Report APT Project**

**Capstone Course**

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| **1. Final Report APT Project** |
| The purpose 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 fields that you must complete with the requested information, which summarize your APT project and its main results. |

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| **Project Name** | **Rep-Drill Management Software** | |
| **Area(s) of performance** | * Computer Engineering. * Software Programming. * Database Model Analysis and Development. * IT Project Management. * Software Architecture. * Big Data. * Artificial Intelligence. | |
| **Competencies** | **Specialty Competencies** | |
| **Competence** | **Justification** |
| Manage the configuration of environments, application services, and databases in an enterprise environment to enable operational or ensure the continuity of systems that support business processes according to industry-defined standards. | To provide management of environments, services and databases, with the purpose of ensuring perpetual execution of the management software;  **Backend**   * **Framework**: Django 4.2 + Django REST Framework 3.14 * **Database**: PostgreSQL 15 Alpine. * **Cache/Broker**: Redis 7 Alpine. * **Task Queue**: Celery 5.3 + Celery Beat. * **WSGI Server**: Gunicorn (3 workers, timeout 120s). * **ML Library**: Prophet 1.1 (forecasting). * **Authentication**: SimpleJWT. * **Testing**: pytest + pytest-django + pytest-cov * **Validación**: Frictionless (CSV data quality). * **Monitoring**: Prometheus client.   **Frontend**   * **Framework**: React 18.3.1 * **Build Tool**: Vite 7.1.7 * **Language**: TypeScript 5.9.3 * **Styling**: Tailwind CSS 3.4.18 * **Routing**: React Router 6.22.0 * **Charts**: Recharts 3.3.0 * **HTTP Client**: Axios 1.12.2 * **Icons**: Lucide React 0.545.0 * **Export**: jsPDF 3.0.3, XLSX 0.18.5 * **State Management**: React hooks (useState, useEffect, useContext).   **Infrastructure**   * **Containerization**: Docker + Docker Compose. * **Reverse Proxy**: Nginx Alpine. * **Web Server (Prod)**: Nginx (servir React build). * **Networking**: Docker bridge network (micro\_net). * **Volumes**: Persistence for PostgreSQL, Redis, static files. |
| Offer IT solution proposals by comprehensively analyzing processes according to the organization's requirements. | Prepare the survey and analysis, in order to make the various proposals to solve the case presented;  **Deliverables:**   * survey\_rep-drill * inventory\_suppliers\_rep-drill |
| Develop a software solution using techniques that allow the systematization of the development and maintenance process, ensuring the achievement of objectives. | Code an automated management and control software with continuous operation for product and inventory management;  **Deliverable:**   * [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) |
| Build data models to support the organization's requirements according to a defined and scalable design over time. | Create a database of automotive accessories for integration into product management;  **Deliverable:**   * [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) |
| Program queries or routines to manipulate information from a database according to the organization's requirements. | To build the structure and programmatic modules, with the intention of operating the database of products, reports, graphs, users, sales and auditing;  **Deliverable:**   * [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) |
| Build programs and routines of varying complexity to address organizational requirements, in line with market technologies and using good coding practices. | Code the structure and programmatic modules, with the intention of composing the functional requirements of the systemic solution;  **Deliverable:**   * [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) |
| Perform certification testing of both products and processes using industry-defined best practices. | Develop and execute tests with the aim of validating the quality of the computer product;  **Deliverable:**   * [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) |
| Build the architectural model of a systemic solution that supports business processes according to the organization's requirements and industry standards. | Design the architecture and engineering for the creation of the technological solution that will solve the company's problem;  **Deliverable:**   * architecture\_rep-drill * [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) |
| Implement comprehensive systemic solutions to automate or optimize business processes according to the organization's needs. | Integrate functionalities for the automation and optimization of operational processes;  **Analytics y Forecasting (Prophet)**   * **Daily Metrics:** Sales, orders, revenue (calculated by Celery every hour). * **Product Demand:** Trends and rotation speed. * **Prophet Forecasting:**   + Total sales (company-wide).   + Per individual product.   + By aggregated category.   + By cellar.   + Top N products with the highest demand.   + **Restock Recommendations:** Priority (critical, high, medium, low) with stockout risk calculation. * **Reports:** Kardex, sales, profitability (with PDF/Excel export). * **Dashboard:** Real-time statistics with consolidated metrics. |
| Manage IT projects, offering alternatives for decision-making according to the organization's requirements. | Execute the management of the IT project, in order to achieve the objectives agreed upon by the sponsor. |
| Develop the transformation of large volumes of data to obtain information and knowledge of the organization in order to support decision-making and improve business processes, according to the organization's needs. | Convert the vast amount of automotive item data, with the intention of producing inventory management flow charts;  **Deliverable:**   * [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) |
| **Generic Competencies** | |
| **Competence** | **Justification** |
| Solve problematic situations in everyday life, the scientific field and the world of work, using basic mathematical operations, proportional relationships and basic algebra. | Manage programmatic issues that arise throughout the entire project execution and control phase. |
| Resolve problematic situations in everyday life, the scientific field and the world of work, using elements of descriptive statistics. | To handle any programmatic issues that may arise during the entire execution and control phase of the project. |
| Communicate different messages orally and in writing, using functional linguistic tools for specific purposes in various socio-labor and disciplinary contexts. | Comprehensively convey and explain ideas and specifications through documents and presentations throughout the project. |
| Comunicarse de forma oral y escrita usando el idioma inglés en situaciones socio-laborales a un nivel intermedio alto en modalidad intensiva, según la tabla de competencias TOEIC Y CEFR. | Use and express the English language in writing in the various project documentation artifacts. |
| Ability to generate innovative ideas, solutions, or processes that respond to productive or social opportunities, needs, and demands, in collaboration with others and taking calculated risks. | Implement several iterations of design thinking to refine the chosen idea through different methods and activities. |
| Develop entrepreneurial projects by identifying opportunities within their field of expertise, applying techniques relevant to the objective, with a focus on adding value to the environment. | Analyze the challenges and needs for integrating artificial intelligence into sales floor management operations. |

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| **Contents of the final report** | | | | | | | | | | | | | | | | |
| **1. Relevance of the APT project** | **Context:** Given the exponential rise of new technologies, several companies in small towns across Chile's regions are opting to automate and optimize their processes, both in-person and digitally.  Therefore, the situation of the **Rep-Drill** lube center salesroom, an authorized and exclusive distributor of **Shell** lubricants and **Mann Filters**, as well as other brands such as **Mobil**, **Liqui Moly**, and others. The store is commenting on the constant inconveniences due to its lack of a digital system for managing its products. This business focuses on the Quinta region, especially in the city of Cabildo, an area where homemade products prevail.  **Need:** There is an urgent need for technological implementation in the company's infrastructure due to the lack of digital solutions, which has impacted all of the company's operational processes.  **Business Objective:** The entity's essential purpose is to achieve its mission and business vision: to be a leader in the field of automotive product marketing throughout the city of Cabildo.  **Value:** Given the need to apply technology in the operational area, implementing an IT solution in this company certainly makes a significant contribution to the organization, given the availability of a workable digital backup that employees can access remotely. Therefore, employees wouldn't have to personally approach the owners to inquire about their needs, which streamlines company management.  Additionally, it impacts the socioeconomic environment, as it is one of the most important suppliers in the region, where the main economies are agriculture and copper mining.  **Impact:** The primary users of the solution will be Cabildo residents, and the age range is eighteen to seventy years. | | | | | | | | | | | | | | | |
| **Client** | | | | Rep-Drill | | | | **Area** | | | | | | Operational | |
| **User Features** | | | | | | | | | | | | | | | |
| **Profile Type** | | | | **User name** | | | | **Educational Level** | | | | | | **Technical Experience** | |
| System | | | | Employee | | | | Middle | | | | | | Low | |
| Administrator | | | | Administrator | | | | Middle | | | | | | Low | |
| **2. Objectives** | **General Objective** | | | | | | | | | | | | | | | |
| Contribute to the engineering and continuous improvement of **Rep-Drill's** strategic and operational processes, following the implementation of an infrastructure to optimize product registration and control by the operational area. | | | | | | | | | | | | | | | |
| **Specific Objectives** | | | | | | | | | | | | | | | |
| **Item** | | | | **Detailing** | | | | | | | | | | | |
| **SPC** | | | | Specific. | | | | | | | | | | | |
| **TRANS** | | | | Transversal / Secondary. | | | | | | | | | | | |
| **OBJ** | | | | Objective. | | | | | | | | | | | |
| **PROJ-XX\_YY** | | | | *▪* Project*.*  *▪ (XX).* Project Number.  *▪ (YY).* Objetive Number. | | | | | | | | | | | |
| **SPC-OBJ-PROJ-01\_01:** Implement and facilitate product inventory management. | | | | | | | | | | | | | | | |
| **KPI** | | Product management performance. | | | | | | | | | | | | | |
| **Formula** | | *(Amount of clicks / Number of impressions) × 100* | | | | | | | | | | | | | |
| **SPC-OBJ-PROJ-01\_02:** Report product inventory management. | | | | | | | | | | | | | | | |
| **KPI** | | Number of product inventory reports. | | | | | | | | | | | | | |
| **Formula** | | *(Sum of impressions)* | | | | | | | | | | | | | |
| **SPC-OBJ-PROJ-01\_03:** Manage user access control. | | | | | | | | | | | | | | | |
| **KPI** | | User access index. | | | | | | | | | | | | | |
| **Formula** | | *(Access number / Total number of attempts) × 100* | | | | | | | | | | | | | |
| **SPC-OBJ-PROJ-01\_04:** Implement an automated notification system to report low stocks of a certain product. | | | | | | | | | | | | | | | |
| **KPI** | | User notification rate. | | | | | | | | | | | | | |
| **Formula** | | *(Number of correct notifications / Total number of notifications) × 100* | | | | | | | | | | | | | |
| **SPC-OBJ-PROJ-01\_05:** Integrate the virtual assistant to assist with user queries. | | | | | | | | | | | | | | | |
| **KPI** | | Average number of truthful responses from the chatbot. | | | | | | | | | | | | | |
| **Formula** | | *(Number of true answers / Total number of queries) × 100* | | | | | | | | | | | | | |
| **SPC-OBJ-PROJ-01\_06:** Analyse, evaluate, and report product flow insights. | | | | | | | | | | | | | | | |
| **KPI** | | Number of product flow charts. | | | | | | | | | | | | | |
| **Formula** | | *(Total graphics)* | | | | | | | | | | | | | |
| **3. Methodology** | During the implementation of the IT proposal, various methods from the various existing frameworks and methodologies will be employed: **Dynamic Systems Development Method**, **Design Thinking**, **Crystal Clear**, **Scrum**, and **eXtreme Programming**, with the aim of selecting the most competent and appropriate methods for the requested context. These include agile and incremental methods.  In this sense, the project structure will fundamentally be segmented into three phases and eight iterations / sprints:   1. **Phase 1: APT Project Definition: Initiation and Organization.**    1. **Iteration / Sprint 0: Analysis, Specification, and Planning.**       1. Analysis Management.       2. Specification Management.       3. Planning Management.       4. Presentation Management.       5. Exhibition Management. 2. **Phase 2: APT Project Development: Execution and Control.**    1. **Iteration / Sprint 0.5: Design and Gestation.**       1. Execution and Control of Modelling, Design and Architecture Management.       2. Execution and Control of Implementation Development Environment Management.    2. **Iteration / Sprint 1: Build and Increment of Product, Report and Suppliers Management.**       1. Execution and Control of Product Management.       2. Execution and Control of Report Management.       3. Execution and Control of Suppliers Management.    3. **Iteration / Sprint 2: Build and Increment of Authentication and User Management.**       1. Execution and Control of Authentication Management.       2. Execution and Control of User Management.    4. **Iteration / Sprint 3: Build and Increment of Notifications, Self-Help and Projections Management.**       1. Execution and Control of Notifications Management.       2. Execution and Control of Self-Help Management.       3. Execution and Control of Projections Management.    5. **Iteration / Sprint 4: Build and Increment of Sales, Orders and Audit Management.**       1. Execution and Control of Sales Management.       2. Execution and Control of Orders Management.       3. Execution and Control of Audit Management.    6. **Iteration / Sprint 4.5: Implementation and Training.**       1. Implementation Management.       2. Training Management. 3. **Phase 3: APT Project Presentation: Closure and Retrospective.**    1. **Iteration / Sprint 4.9: Closure and Retrospective.**       1. Closure Management.       2. Exhibition Management.   Subsequently, the chosen methodologies are specified; | | | | | | | | | | | | | | | |
| **Rapid Application Development (RAD) + Agile Framework** | | | | | | | | | | | | | | | |
| **Framework** | **Detailing** | | | | | | | | **Methods** | | | | **Phase** | | |
| **Dynamic Systems Development Method (DSDM)** | It is an agile project delivery framework, initially used as a software development method; | | | | | | | | * Timeboxing * MoSCoW * Prototyping * Testing * Workshop * Modeling * Configuration management | | | | * APT Project Definition: Initiation and Organization. * APT Project Development: Execution and Control. * APT Project Presentation: Closure and Retrospective. | | |
| **Design Thinking** | It is a delivery framework and iterative, non-linear process that teams use to understand users, question assumptions, redefine problems, and create innovative solutions to prototype and test; | | | | | | | | * Empathize * Define * Ideate * Prototyping * Testing | | | | * APT Project Definition: Initiation and Organization. * APT Project Development: Execution and Control. | | |
| **Crystal Clear** | It is an agile framework considered a lightweight or agile methodology that focuses on people and their interactions, as opposed to processes and tools.  **Crystal Clear:** The team consists of only one to six members, which is suitable for short-term projects where members work in a single workspace. | | | | | | | | * People * Interaction * Community * Skills * Talents * Communications | | | | * APT Project Definition: Initiation and Organization. * APT Project Development: Execution and Control. * APT Project Presentation: Closure and Retrospective. | | |
| **Scrum** | It is a lightweight framework that helps people, teams, and organizations generate value through adaptive solutions to complex problems; | | | | | | | | * Scrum Team * Scrum Events * Scrum Artifacts | | | | * APT Project Definition: Initiation and Organization. * APT Project Development: Execution and Control. * APT Project Presentation: Closure and Retrospective. | | |
| **eXtreme Programming (XP)** | It is a software development methodology that seeks to improve software quality and its responsiveness to changing customer needs. | | | | | | | | * Coding * Testing * Listening * Designing * Feedback * Simplicity | | | | APT Project Development: Execution and Control. | | |
| **4. Development** | **Description of the Iterative Phases** | | | | | | | | | | | | | | | |
| **Work Plan** | | | | | | | | | | | | | | | |
| **Competence or Units of Competencies** | | **Activities** | | | **Resources** | | | | | **Duration of the Activity** | **Responsible [[1]](#footnote-1)** | | | | **Observations** |
| **Phase 1: APT Project Definition: Initiation and Organization** | | | | | | | | | | | | | | | |
| **Iteration / Sprint 0: Analysis, Specification and Planning** | | | | | | | | | | | | | | | |
| IT Project Management. | | Analysis Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 1 day. | David Lever | | | | **Impediment:** Problems with communication between interlocutors.  **Response:** Carry out communication via telephone and instant messaging service. |
| IT Project Management. | | Specification Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 4 weeks. | * Elián Farias * Jorge Freire * David Lever | | | | **Impediment:** Confusion in the description of certain points.  **Response:** Clarify any unclear issues. |
| IT Project Management. | | Planning Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 4 hours. | David Lever | | | | **Facilitator:** Wit and skills in structuring tasks, work packages, time, and equipment. |
| IT Project Management. | | Presentation Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 2 days. | * Elián Farias * Jorge Freire * David Lever | | | | **Impediment:** Visual complexity in the presentation of the document.  **Response:** Touch up certain areas of the structure and design. |
| IT Project Management. | | Exhibition Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 10 minutes. | * Elián Farias * Jorge Freire * David Lever | | | | **Impediment:** Error in the specification of certain points.  **Response:** Clarify unclear issues. |
| **Phase 2: APT Project Development: Execution and Control** | | | | | | | | | | | | | | | |
| **Iteration / Sprint 0.5: Design and Gestation** | | | | | | | | | | | | | | | |
| * Computer Engineering. * Analysis and Development of Database Models. * Software Architecture. | | Execution and Control of Modelling, Design and Architecture Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 5 days. | * Elián Farias * Jorge Freire * David Lever | | | | **Facilitator:** Wit, knowledge, skills, and conceptualization of architectures, prototypes, and technological models. |
| * Computer Engineering. * Software Programming. * Analysis and Development of Database Models. | | Execution and Control of Implementation Development Environment Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 1 day. | * Elián Farias * Jorge Freire | | | | **Facilitator:** Knowledge of applied technologies. |
| **Iteration / Sprint 1: Build and Increment of Product, Report and Suppliers Management** | | | | | | | | | | | | | | | |
| * Computer Engineering. * Software Programming. * Analysis and Development of Database Models. | | Execution and Control of Product Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 2 weeks. | * Elián Farias * Jorge Freire | | | | **Facilitator:** Understanding applied technologies. |
| * Computer Engineering. * Software Programming. | | Execution and Control of Report Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 2 weeks. | Elián Farias | | | | **Facilitator:** Intelligence of applied technologies. |
| **Iteration / Sprint 2: Build and Increment of Authentication and User Management** | | | | | | | | | | | | | | | |
| * Computer Engineering. * Software Programming. * Analysis and Development of Database Models. | | Execution and Control of Authentication and User Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 2 weeks. | * Elián Farias | | | | **Facilitator:** Understanding and skills in the use of applied technologies. |
| **Iteration / Sprint 3: Build and Increment of Notifications, Self-Help and Projections Management.** | | | | | | | | | | | | | | | |
| * Computer Engineering. * Software Programming. | | Execution and Control of Notifications Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 1 week. | Elián Farias | | | | **Facilitator:** Intelligence and wit in the use of the service. |
| * Computer Engineering. * Software Programming. * Artificial Intelligence. | | Execution and Control of Self-Help Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 2 weeks. | Elián Farias | | | | **Impediment:** Lack of experience in integrating AI technology.  **Response:** Investigate and train for incorporation. |
| * Computer Engineering. * Software Programming. * Analysis and Development of Database Models. * Big Data. * Artificial Intelligence. | | Execution and Control of Projections Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 3 weeks. | Elián Farias | | | | **Impediment:** Inadequate use of Big Data applications.  **Response:** Investigate and train for incorporation. |
| **Iteration / Sprint 4: Build and Increment of Sales, Orders and Audit Management** | | | | | | | | | | | | | | | |
| * Ingeniería Informática. * Programación de Software. * Análisis y Desarrollo de Modelos de Base de Datos. * Big Data. * Inteligencia Artificial. | | Execution and Control of Sales, Orders and Audit Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 3 weeks. | Elián Farias | | | | **Impediment:** Inadequate use of Big Data applications.  **Response:** Investigate and train for incorporation. |
| **Iteration / Sprint 4.5: Implementation and Training** | | | | | | | | | | | | | | | |
| * IT Project Management. * Computer Engineering. * Software Programming. * Analysis and Development of Database Models. * Big Data * Artificial Intelligence. | | Implementation and Training Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 2 weeks. | * Elián Farias * Jorge Freire * David Lever | | | | **Facilitator:** Completion and explanation of the IT project.  **Impediment:**  Product or increments not completed within the agreed time.  **Response:**  Justify the reasons for failure to deliver the increments. (deliverables)  Prioritize key customer increments. |
| **Phase 3: APT Project Presentation: Closure and Retrospective** | | | | | | | | | | | | | | | |
| **Iteration / Sprint 4.9: Closure and Retrospective** | | | | | | | | | | | | | | | |
| * IT Project Management. * Computer Engineering. * Software Programming. * Analysis and Development of Database Models. * Big Data * Artificial Intelligence. | | Closure Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 1 week. | * Elián Farias * Jorge Freire * David Lever | | | | **Facilitator:** Completion and explanation of the computer project.  **Impediment:**  Product or increments not completed within the defined time.  **Response:**  To clarify the reasons for non-compliance in the delivery of the increments. (deliverables)  Prioritize key customer increments. |
| IT Project Management. | | Exhibition Management. | | | * Humans. * Time. * Technology. * Machinery and equipment. * Information and data. | | | | | 20 minutes. | * Elián Farias * Jorge Freire * David Lever | | | | **Impediment:**  Failure to explain certain points.  **Response:**  Illustrate confusing topics. |
| **Difficulties and Facilitators** | | | | | | | | | | | | | | | |
| **Facilitators** | | | | | | | | | | | | | | | |
| * **Project Management:** Planning and management of the IT project in advance. * **Design Competencies:** Wit, knowledge, skills and conceptualization of architectures, prototypes and technological models. * **Execution and Construction:** Knowledge, understanding and skills in the use of technologies applied in the development of the software by one of the members. | | | | | | | | | | | | | | | |
| **Difficulties** | | | | | | | **Response** | | | | | | | | |
| **Project Coordination and Collaboration:** Disadvantages of teamwork. | | | | | | | Establish and streamline communication sessions among team members. | | | | | | | | |
| **Artificial intelligence:** Inexperience in integrating AI technology. | | | | | | | Investigate and train the incorporation of AI tools. | | | | | | | | |
| **User Authentication:** Complexity in certain areas during the development of functionality. | | | | | | | Implementation of the open standard JSON Web Token (JWT). | | | | | | | | |
| **Software Setup in the Container:** Adversity in the software's operating process. | | | | | | | Use of various hardware with the aim of solving the procedure. | | | | | | | | |
| **Adjustments Made** | | | | | | | | | | | | | | | |
| * **Elimination of Execution and Control of Quote Price Management:** The functionality for managing price quotes with suppliers has been removed from the IT project planning, given the limited time and the prioritization of other essential requirements for the client. * **Exclusion of Specific and Cross-Cutting Objectives:** Certain specific and cross-cutting objectives, detailed at the beginning, were eliminated due to time constraints and the client's preference for other functional requirements:   + **SPC-OBJ-PROJ-01\_07:** Obtain price quotes for products from various suppliers.   + **TRANS-OBJ-PROJ-01\_03:** To constantly control and monitor that all international standards that must be implemented in the project are being applied. * **Inclusion of Sales Management Execution and Control, Orders and Audit:** After reviewing the system's properties, it was decided to integrate sales, order, and audit management, which complement the core functionality of the IT solution. | | | | | | | | | | | | | | | |
| **5. Evidence** | During the preparation of the computer project, relevant milestones have been specified, therefore, the execution and construction processes are confirmed through evidence.  Subsequently, the details of said evidence are specified. | | | | | | | | | | | | | | | |
| **Name** | | | **Description** | | | **Justification** | | | | | | **Format** | | | |
| **Customer Survey** | | | Form with multiple types of queries, as well as evidence of participant comments. | | | Register, collect and gather data in order to obtain accurate information from the client to understand the business process and their needs. | | | | | | DOCX (C++ Text) | | | |
| **Scrum Board** | | | A visual tool, similar to a board, used in agile project management. | | | Manage the work of the Sprints, providing access to all members so they can monitor the status of tasks in real time. | | | | | | Web Tool | | | |
| **Mockups** | | | Visual representations of the software. | | | To define the user interface and experience. | | | | | | PNG (Portable Network Graphics) | | | |
| **Software Architecture** | | | Abstraction of the computer structure. | | | Structuring the software construction. | | | | | | PNG | | | |
| **Manual Inventory and Supplier Record** | | | Original files with the actual inventory data. | | | Collection of data for digital transcription. | | | | | | JPG (Joint Photographic Experts Group) | | | |
| **Digital Record of Inventory and Suppliers** | | | Digital transcription of the analog inventory files. | | | Visualize and use the provided data digitally. | | | | | | XLSX (C++ Text) | | | |
| **Relational Database Model** | | | Database design. | | | Model, create, and manage the data used in the software. | | | | | | JPG | | | |
| **Project Repository** | | | Hosting the computer project coding. | | | To store, organize, maintain, and distribute computer files. | | | | | | Python / TypeScript / Shell / HTML / CSS / PowerShell | | | |
| **Software Technical Documentation** | | | Descriptive and accurate technical information on the integrity of the software. | | | To register, certify, provide evidence and accurately and expertly instruct the full scope of the software. | | | | | | MD (Markdown Texy) | | | |
| **Software Views** | | | Final representations of the computer solution. | | | To reflect and validate the aesthetic aspect of the software. | | | | | | JPG | | | |
| **Sprints Reviews** | | | Images from the Sprint Reviews. | | | Progress and final meetings to conduct review and feedback with the client. | | | | | | JPG | | | |
| **Key Performance Indicator (KPI)** | | | KPI Specification. | | | Resolution and expected results of the technological solution. | | | | | | DOCX (C++ Text) | | | |
| **Candidate / Consumer Net Promoter Score (CNPS) Rep-Drill** | | | A market research metric based on survey questions. | | | Satisfaction rating and the likelihood that they will recommend a product or service to a friend or colleague. | | | | | | Web Form | | | |
| **Customer survey** | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | |
| **Scrum Board** | | | | | | | | | | | | | | | |
| [**Trello**](https://trello.com/invite/b/6917b18d5b9f85f94f882575/ATTIf380119340f89fcbed7a90d8db750e15BA38C715/rep-drill) | | | | | | | | | | | | | | | |
| **Mockups** | | | | | | | | | | | | | | | |
| **Account Access** | | | | | | | | | | | | | | | |
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| **Dashboard** | | | | | | | | | | | | | | | |
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| **Inventory** | | | | | | | | | | | | | | | |
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| **Inventory (Add Product)** | | | | | | | | | | | | | | | |
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| **Inventory (Product View)** | | | | | | | | | | | | | | | |
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| **Audit** | | | | | | | | | | | | | | | |
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| **Users** | | | | | | | | | | | | | | | |
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| **Suppliers** | | | | | | | | | | | | | | | |
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| **Suppliers (New Supplier)** | | | | | | | | | | | | | | | |
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| **Software Architecture** | | | | | | | | | | | | | | | |
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| **Manual Inventory and Supplier Record** | | | | | | | | | | | | | | | |
| **Batteries** | | | | | | | | | | | | | | | |
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| **Lubricants** | | | | | | | | | | | | | | | |
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| **Filters** | | | | | | | | | | | | | | | |
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| **Suppliers** | | | | | | | | | | | | | | | |
| **Batteries (Bosch)** | | | | | | | | | | | | | | | |
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| **Lubricants (Shell)** | | | | | | | | | | | | | | | |
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| **Lubricants (Mobil)** | | | | | | | | | | | | | | | |
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| **Lubricants (Mobil)** | | | | | | | | | | | | | | | |
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| **Lubricants (Liqui Moly)** | | | | | | | | | | | | | | | |
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| **Filters (Mann Filter)** | | | | | | | | | | | | | | | |
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| **Digital Record of Inventory and Suppliers** | | | | | | | | | | | | | | | |
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| **Relational Database Model** | | | | | | | | | | | | | | | |
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| **Project Repository** | | | | | | | | | | | | | | | |
| [**GitHub: Rep-Drill**](https://github.com/JorgeFreire95/Rep-Drill) | | | | | | | | | | | | | | | |
| **Software Views** | | | | | | | | | | | | | | | |
| **Dashboard** | | | | | | | | | | | | | | | |
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| **Supplier Management** | | | | | | | | | | | | | | | |
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| **People Management** | | | | | | | | | | | | | | | |
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| **Inventory Management** | | | | | | | | | | | | | | | |
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| **Inventory Reorder Management** | | | | | | | | | | | | | | | |
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| **Sales Management** | | | | | | | | | | | | | | | |
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| **Create Order (Remove products from inventory)** | | | | | | | | | | | | | | | |
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| **Analitics** | | | | | | | | | | | | | | | |
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| **Dashboard (Prophets)** | | | | | | | | | | | | | | | |
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| **Report Management** | | | | | | | | | | | | | | | |
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| **Audit and Logs** | | | | | | | | | | | | | | | |
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| **User Management** | | | | | | | | | | | | | | | |
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| **Sprints Reviews** | | | | | | | | | | | | | | | |
| **Progress Presentation, Review, Feedback, and Retrospective with the Client** | | | | | | | | | | | | | | | |
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| **Commemoration with the Client** | | | | | | | | | | | | | | | |
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| **Final Presentation, Review, Feedback, and Retrospective with the Client** | | | | | | | | | | | | | | | |
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| **Key Performance Indicator (KPI)** | | | | | | | | | | | | | | | |
| **KPI** | | | | | | **Results** | | | | | | | | | |
| Product management performance. | | | | | | **100%** | | | | | | | | | |
| Number of product inventory reports. | | | | | | **Infinito** | | | | | | | | | |
| User access index. | | | | | | **100%** | | | | | | | | | |
| User notification rate. | | | | | | **100%** | | | | | | | | | |
| Average number of truthful answers from the chatbot. | | | | | | **90%** | | | | | | | | | |
| Number of product flow charts. | | | | | | **Infinito** | | | | | | | | | |
| **Product Management Performance** | | | | | | | | | | | | | | | |
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| **User Access Index** | | | | | | | | | | | | | | | |
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| **User Notification Rate** | | | | | | | | | | | | | | | |
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| **Average number of truthful answers from the chatbot** | | | | | | | | | | | | | | | |
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| **Candidate / Consumer Net Promoter Score (CNPS) Rep-Drill** | | | | | | | | | | | | | | | |
| **Q1: On a scale of 0 to 10, how likely are you to recommend the Rep Drill system to a colleague or another company?** | | | | | | | | | | | | | | | |
| Gráfico de respuestas de formularios. Título de la pregunta: En una escala de 0 a 10, ¿qué tan probable es que recomiendes el sistema Rep Drill a un colega o a otra empresa?. Número de respuestas: 2 respuestas. | | | | | | | | | | | | | | | |
| **Q2: What is the main reason for your score?** | | | | | | | | | | | | | | | |
| Interfaz de usuario gráfica, Texto, Aplicación, Chat o mensaje de texto  El contenido generado por IA puede ser incorrecto. | | | | | | | | | | | | | | | |
| **Q3: Please rate your experience (from 1 to 5) with the following key areas of the system:** | | | | | | | | | | | | | | | |
| Gráfico de respuestas de formularios. Título de la pregunta: Por favor, valora tu experiencia (de 1 a 5) con las siguientes áreas clave del sistema: . Número de respuestas: . | | | | | | | | | | | | | | | |
| **Q4: What do you like MOST or what feature do you find MOST valuable about Rep Drill?** | | | | | | | | | | | | | | | |
| Interfaz de usuario gráfica, Texto, Aplicación, Correo electrónico  El contenido generado por IA puede ser incorrecto. | | | | | | | | | | | | | | | |
| **Q5: What do you like LEAST or what feature do you miss MOST? (Or if you encountered any problems or difficulties)** | | | | | | | | | | | | | | | |
| Interfaz de usuario gráfica, Texto, Aplicación  El contenido generado por IA puede ser incorrecto. | | | | | | | | | | | | | | | |
| **Q6: Which of the following roles best describes your primary function when using Rep Drill?** | | | | | | | | | | | | | | | |
| Gráfico de respuestas de formularios. Título de la pregunta: ¿Cuál de los siguientes roles describe mejor tu función principal al usar Rep Drill? . Número de respuestas: 2 respuestas. | | | | | | | | | | | | | | | |
| **6. Professional interests and projections** | **Final Reflections** | | | | | | | | | | | | | | | |
| The knowledge gained during the IT project has been vital in developing and reinforcing the skills acquired as a professional student. Furthermore, these abilities and aptitudes were applied to the software solution, as well as throughout my professional career.  Subsequently, certain interests exercised during the execution of the project are specified;   * Artificial Intelligence. * Machine Learning. * Software Development. * Data Management and Analysis.   With regard to the professional interests proposed in the project, there was no variation throughout the various phases in the execution processes. | | | | | | | | | | | | | | | |
| **Professional Interests** | | | | | | | | | | | | | | | |
| Subsequently, professional interests are specified for the purpose of exploration and further study;   * F1 / MotoGP Development. * Hacking and Cybersecurity. * Digital Trust and Resilience. * Games & Web Apps Development. * Software and Hardware Project Management. * Hi-Tech (Exotechnology). * Networks (5G / 6G / WI-FI 7 / P2P / Tor Network). * Cryptography. * The Internet of Things (IoT). * Artificial intelligence (AI) and Machine Learning (ML). * Anything as a Service (XaaS) and AI-as-a-Service (AIaaS). * Wearables and Augmented Humans. * Big Data and Augmented Analytics. * Intelligent Spaces and Smart Places. * Blockchains, Distributed Ledgers and Cryptocurrencies. * Cloud and Edge Computing. * Digitally Extended Realities. (XR / VR / AR / MR) * Digital Twins. * Natural Language Processing (NLP). * Voice Interfaces and Chatbots. * Computer Vision and Facial Recognition. * Robots and Cobots (Collaborative Robot). * Autonomous Vehicles. * Genomics and Gene Editing. * Machine Co-creativity and Augmented Design. * Digital Platforms. * Drones and Unmanned Aerial Vehicles. * Quantum Computing. * Robotic Process Automation (RPA). * Mass Personalisation and Micro-moments. * 3D and 4D printing and additive manufacturing. * Nanotechnology and Materials Science. * Computing Power. * Datafication. * Internet of Behaviours. * Anything as a Service (XaaS) and AI-as-a-Service (AIaaS). * DevOps. | | | | | | | | | | | | | | | |
| **Career Projections** | | | | | | | | | | | | | | | |
| * Development of solutions with the aim of creating online products and services focused on the consumer. * Design and management of projects in a high-tech, fast-paced environment with cross-functional teams using an agile methodology. * To perform a role in one of the Big Tech companies or some other relevant entity in an honest and professional manner. * To lead, empathize with and motivate the work team(s) in order to achieve work and professional objectives. * To deepen limited knowledge. * Improvement of acquired skills. * Improvement of weaknesses. * Innovation and production of new technologies. * Structuring, development and implementation of software. * Design, engineering and generation of software solutions. * Analysis and resolution of information requirements. * Adaptation and improvement of business and engineering processes. | | | | | | | | | | | | | | | |

1. En caso de que el Proyecto APT sea grupal, en esta columna deben indicar el nombre de los responsables de cada tarea o actividad. Esto posteriormente permitirá diferenciar la evaluación por cada integrante. [↑](#footnote-ref-1)