**Guide3. APT Project Final Report**

**Capstone Subject**

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| **1. APT Project Final Report** |
| The objective of this report is for you to describe the most relevant aspects of your APT Project. It is important that you substantiate the decisions you had to make throughout the process.  Below, you will find different fields that you must fill in with the requested information, which account for the summary of your APT project and its main results. |

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| *Project Name* | ***APR System*** |
| *Performance Area(s)* | * *Analysis and evaluation of IT solutions* * *Software Development* * *Software Quality Assurance* * *IT Project Management* |
| *Competences* | * *Offer proposals for IT solutions by analysing the organisation's processes.* * *Build hybrid web and mobile applications by applying good development practices.* * *Design data models and execute database operations.* * *Implement software tests that ensure the quality of the developed solution.* * *Manage technological projects considering time, resources and risks.* * *Develop the transformation of large volumes of data to obtain information and knowledge of the organization in order to support decision-making and the improvement of processes, according to the needs of the organization.* |

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| ***Contents of the final report*** | |
| *1. Relevance of the APT project* | *The APRs (Rural Drinking Water) are community organizations in charge of providing drinking water in rural sectors, being managed by members of the same locality. Currently, they face significant technological limitations, which has an impact on the efficiency of their management and the quality of the service provided.* |
| *2. Objectives* | *The general objective is to develop and implement a comprehensive technological platform for the management of Rural Drinking Water (RPA), which optimizes administrative and financial processes through digitalization and automation, facilitates users' access to modern payment and communication services, and ensures the continuity, scalability and sustainability of management, considering the particularities of the rural context.*   * *Optimize the administrative and financial management of the APR through the digitization and automation of processes, reducing the operational burden and improving access to reliable and updated information.* * *To facilitate access to modern payment and communication services for users of the APR, reducing the need for travel and promoting the digital inclusion of the community.* * *Implement a user-friendly technological platform adapted to the local reality that ensures the continuity, scalability and sustainability of rural drinking water management.*   *Specific objectives include:*   * *Design and implement the digital registration and billing system to replace manual processes and keep everything updated in real time.* * *Incorporate online means of payment, to speed up the payment process and avoid spending time and money in this process in the case of those customers far from the office.* * *Train staff and users of the platform.* * *Design a friendly and intuitive interface ensuring that the system is easy to use for both customers and administrators.* |
| *3. Methodology* | *The development of the APT Project will focus on an* ***agile approach, based on the Scrum methodology****, which will allow the work to be organized in iterative stages, deliver functional advances progressively and adjust the solution according to the requirements defined by the APR.*  *The project was structured in* ***sprints of two to three weeks****, within which partial deliverables were planned, developed and validated (e.g.: database design, billing module, user interface and payment integration).*  *The main stages of the methodology will be:*   1. ***Requirements Gathering:*** *Gathering information with the APR to identify critical processes and establish priority needs.* 2. ***Solution design:*** *database modeling, system architecture definition, and interface prototyping.* 3. ***Iterative development:*** *progressive implementation of the main modules (billing, online payments and notifications), applying quality standards and good development practices.* 4. ***Testing and validation:*** *Execution of unit and end-to-end tests, along with validation of functionalities in a real-world environment.* 5. ***Training and deployment:*** *delivery of user manuals and training of APR personnel to ensure the correct adoption of the solution.*   *As for the internal organization, the assignment of specific responsibilities among the team members is taken into consideration:*   * ***Database design and backend development.*** * ***Web interface and user experience development.*** * ***Module integration, testing, and overall coordination.***   *This methodological approach ensures a structured, flexible and results-oriented development, allowing the final solution to meet the objectives of optimizing the administrative and financial management of the APR.* |
| *4. Development* | *Phase two corresponds to the development of what was defined in phase 1 and for this it was divided into progress and finished project, during the progress the documentation and plans of the solution were made (requirements sheets, tests or contextual models, database model, etc.), at the end of the project the solution itself was developed but the scope of it was modified due to a delay in development, so we removed some functions and details, and left the most important ones.*  *Among the aspects that facilitated the development, there is the previous implementation of services and the development of this type of solution (web), in addition to visual support.*  *There were creative difficulties and the application of calculations and data models.*  *Changes had to be made in relation to what was defined in phase one for reasons of delay in development, so it was decided to modify the scope of the solution in order to arrive with a functional product to the evaluation* |
| *5. Evidence* | *https://github.com/Elias0Dev/Servicio-APR* |
| *6. Professional interests and projections* | *The group considers that the development of this project helped us to reinforce knowledge, apply new ones and invent alternative solutions, the interests did not change but they did improve the focus of what roles to apply and practice.*  *We hope that during our search or measurement of performance by companies, this project will be considered as a sample of our capabilities and knowledge* |