

| **1. Informe final Proyecto APT** |
| --- |
| El objetivo de este informe es que describas los aspectos más relevantes de tu Proyecto APT. Es importante que fundamentes las decisiones que tuviste que tomar a lo largo del proceso.  A continuación, encontrarás distintos campos que deberás completar con la información solicitada, los que dan cuenta del resumen de tu proyecto APT y sus principales resultados. |

| Nombre del proyecto | **MOTOWORK** |
| --- | --- |
| Área (s) de desempeño(s) | Computing  Mobile application development  Platform integration  IT project management  Agile project management |
| Competencias | Perform certification testing of both products and processes using good practices defined by the industry.  Offer IT solution proposals by comprehensively analyzing the processes according to the organization's requirements.  Manage IT projects, offering alternatives for decision making according to the organization's requirements.  Build data models to support the organization's requirements according to a defined and scalable design over time.  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 business processes, according to the needs of the organization.  Develop a software solution using techniques that allow the development and maintenance process to be systematized, ensuring the achievement of objectives.  Program queries or routines to manipulate information from a database according to the organization's requirements.  Build programs and routines of varying complexity to provide solutions to the organization's requirements, in accordance with market technologies and using good coding practices.  Implement comprehensive systemic solutions to automate and optimize business processes according to the needs of the organization.  Resolve systemic vulnerabilities to ensure that the software built meets the security standards required by the industry. |

| **Contenidos del informe final** | |
| --- | --- |
| 1. Relevancia del proyecto APT | The project seeks to solve a common problem in many companies: the lack of a centralized and efficient platform to manage labor documents and control workers' shifts. In many organizations, records, documents and shift management are handled in a fragmented manner, using multiple systems and tools. This not only generates inefficiencies and loss of time, but also makes supervision and access to critical information difficult, both for workers and for the Labor Relations department (RRLL).  This topic is highly relevant because the digitalization and automation of work processes is a growing trend. The ability to efficiently integrate and manage employment information through a single platform not only improves productivity and transparency, but also ensures data integrity and accessibility. Computer engineers play a key role in designing and developing systems that optimize these processes, providing value to organizations and workers.  The project focuses on an organizational environment, where HR management is crucial for operation. This organization typically employs a considerable number of workers, each with different roles, shifts, and documentation needs, making manual or dispersed management inefficient and prone to errors. "Motowork" would be designed to be initially implemented in a limited environment, with the possibility of adaptation for other areas if necessary.  The impact of this project is significant for both the workers and the HR department. For workers, it provides easier and more organized access to their personal and work documents, and allows them to manage their shifts and attendance more efficiently. For RRLL, the platform offers a comprehensive system to monitor and manage labor information, reducing the risk of errors, improving operational efficiency and allowing better control and decision making.  The value contribution is the creation of a digital solution that not only facilitates document and attendance management, but also improves the worker's experience within the company. By centralizing all information on one accessible platform, you reduce administrative burden, increase transparency, and promote a more organized and efficient work environment. In the current work context, where digitalization and operational efficiency are essential, representing a significant advance in comprehensive management. |
| 2. Objetivos | **General Objective:**  **1.** Develop a comprehensive application for the management of labor documents and the control of workers' shifts. This objective seeks to create a technological tool that centralizes and optimizes the administration of documents, shifts, and absences, facilitating access to information for both workers and the Labor Relations department.  **2.** Improve operational efficiency in the management of Labor Relations through the integration of various platforms used by workers. This objective aims to connect with other company tools and systems, offering a unified solution that simplifies administrative processes and improves the user experience within the organization.  **Specific objectives:**  **1.** Analyze the requirements of users and the HR department to identify specific needs in document management, assistance, and digital platforms used by workers.  **2.** Design the application architecture that includes modules for document management, shift control, and absenteeism, ensuring an intuitive and accessible interface for all users.  **3.** Develop and implement the mobile application, using appropriate technologies that guarantee data security, functionality, and efficiency in its use.  **4.** Integrate with existing platforms and systems, allowing workers to access all the digital tools necessary for their daily work from a single place. |
| 3. Metodología | To address the problem identified in the attendance management of teaching and administrative staff in a school context, the Scrum methodology will be used. This agile methodology is ideal for projects that require flexibility and adaptability, allowing us to continually iterate and improve the solution as we progress through development.  **Addressing the Problem with Scrum:**  **Definition of the Product Backlog:**  The process will begin with the creation of a Product Backlog, which will contain all the features, functionalities and improvements necessary to develop the Integrated Attendance Management System. This backlog will be prioritized based on the importance of each element for meeting the project objectives.  **Sprint Planning:**  Work will be divided into Sprints, which are 2-3 week work cycles. At the beginning of each sprint, the Product Backlog items that will be addressed during that period will be selected. The selection will be made based on priority and the team's ability to complete them within the sprint.  **Daily Meetings (Daily Scrum):**  Each day a short daily meeting, known as the Daily Scrum, will be held where team members will share what they did the previous day, what they plan to do that day, and any obstacles they face. This ensures that the team is aligned and any issues are addressed quickly.  **Incremental Development:**  During each sprint, system increments will be developed that will be fully functional and that can be presented and evaluated by stakeholders. This incremental approach allows you to receive constant feedback and make necessary adjustments before continuing with the next sprint.  **Sprint Review and Retrospective:**  At the end of each sprint, a Sprint Review will be held, where the completed work will be presented and feedback from stakeholders will be collected. After the review, a Retrospective will be carried out to evaluate the sprint process, identify areas of improvement and plan actions for the next sprint.  **Roles and Responsibilities:**  **Product Owner (Motorola Solutions Representative):** Responsible for defining Product Backlog priorities and ensuring that the project is always aligned with customer needs and project objectives.  **Scrum Master:** Responsible for facilitating daily meetings, removing obstacles that the team may face, and ensuring that the team follows agile Scrum practices.  **Why was this methodology relevant to meet the stated objectives?**  In mobile app development, requirements can change frequently due to customer feedback, changes in the market, or new technologies. Scrum allows you to adapt quickly through short sprints and frequent reviews, adjusting work based on changes or new priorities.  Scrum encourages teamwork and constant review. At the end of each sprint, the team reviews and tests the increment, allowing bugs to be identified early and quality to be maintained high throughout application development.  In mobile app development, not all features are equally important. Scrum allows for backlog prioritization, ensuring that the team focuses first on the highest-value user features or those that are critical to the user experience. |
| 4. Desarrollo | * **Descripción de las etapas o actividades del Proyecto APT.**   ¿Cuáles fueron las etapas o actividades que desarrollaste en tu Proyecto APT?   * **Application architecture development:** Preparation of architecture diagrams of the application to be developed, all 4+1 models as well as the physical data model * **Application prototype development: Making the prototype in Adobe XD to have a basis of how the final application to be developed should look.** * **Aesthetic programming:** Programming of the user's visual interface, that is, everything that the user can observe happens, as well as the design of the entire application. * **Functional programming:** Programming of the entire user functionality interface. * **Platform integration:** Integration of APIs and Firebase Database for the application * **Application documentation:** Documentation in a report on the entire process carried out for the development of the application * **Dificultades y facilitadores en el desarrollo del Proyecto APT.**   ¿Qué elementos/aspectos te facilitaron o ayudaron en el desarrollo de tu proyecto APT?  ¿A qué dificultades te enfrentaste en el desarrollo de tu Proyecto APT?   * **Difficulties coordinating time:** since there was only 3 months of time to carry out the entire process, we had to make adjustments with our available time to be able to coordinate everything * **Delay in starting programming:** one of our members had to be absent for 1 week, which prevented the correct flow of the programming to be carried out * **Ajustes realizados.**   ¿Cómo abordaste las dificultades para cumplir con los objetivos? ¿Tuviste que hacer algún ajuste? ¿Qué ajuste?  An adjustment had to be made to the schedule regarding the estimated time for programming the application, as well as we had to wait for the 3 members to be coordinated to carry out the programming in an equitable manner. |
| 5. Evidencias | Las evidencias que pueden dar cuenta del desarrollo de nuestro proyecto APT serian las siguientes:   * **Finished application:** The functional app will be the main evidence that the entire project procedure was carried out successfully. * **Technical report:** This report will explain the entire procedure carried out to carry out the development of this project, from obtaining the requirements for its development to the final product of the application to be made. * **GitHub Repository:** In this GitHub backup, we will have the respective files used for the development of the mobile application, being the structure files, functionalities, aesthetics, databases, among others. * **Task organization sheet:** In this sheet made in Trello, we have all the tasks in the backlog, as well as the respective phases that our project is going through. |
| 6. Intereses y proyecciones profesionales | * **Reflexión sobre el aporte del Proyecto APT en el desarrollo de los intereses profesionales.**   ¿De qué manera tu Proyecto APT te sirvió para tener mayor conocimiento de tus intereses profesionales? Luego de terminar tu Proyecto APT, ¿tus intereses profesionales siguen siendo los mismos que planteaste al comienzo de la asignatura?  Personally, if it helps us as a group to have greater knowledge of our professional interests, these continue to be the same as those we proposed at the beginning of the subject, we will also continue to deepen our interests to continue improving.   * **Proyecciones laborales a partir de Proyecto APT.**   ¿Qué intereses profesionales te gustaría explorar o seguir profundizando?   * **Development of mobile applications:** When developing this project, being a mobile application, it gave us more interest in continuing research to be able to make more and more applications, with a better level of quality and a better aesthetic level. * **Cybersecurity:** A fairly important area in the subject of computing, we have had to apply secure code in an application of this level, which requires a lot of management of sensitive data, it also generates interest in learning about the different tools to offer that this field has. * **Agile project management:** Having to carry out this project in a fairly limited time, we have had to apply different agile project management techniques to be able to organize ourselves correctly, an important thing to learn in this time, that all projects Whether small, medium or large, everyone has to apply agility techniques to carry out all the development correctly and efficiently.   **¿Cómo te proyectas laboralmente después de haber terminado tu Proyecto APT?**  Working for a good company deepening our skills as engineers. |