

| **1. APT Project Final Report** |
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| The objective of this report is to describe the most relevant aspects of your APT Project.It´s important to justify the decisions you had to make throughout the process.  Below, you’ll find several fields that you need to complete with the requested info.,which summarize your APT project and it’s main results. |

| Project Name | Programming Nexus |
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| Field | Web Development, Database Modeling, UI and UX Design, Software Architecture. |
| Competencies | IT Project Management  Data Model Construction  Software Solutions Development  Communication in English  Q/A |

| **Contenidos del informe final** | |
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| 1. Relevance of the APT Project | The “Programming Nexus” project aims to address the issue of extensive information on development technology versions, seeking to organize and improve the information on version changes. This topic is relevant to the labor field and software development because efficient management of version information can significantly improve productivity and the quality of work performed. By centralizing key information about versions or changes, future developers can access the information they need more quickly and easily to adapt their projects to new versions of tools and frameworks. This issue is global, affecting students and junior developers worldwide. However, it can be focused on specific contexts such as technology companies, development teams, or educational institutions. The project offers value by providing an organized solution for managing information about development technology versions and also a study center for new programmers. By implementing a system that facilitates access to and understanding of version changes, work efficiency for developers is directly improved, and the process of adapting to new versions is optimized. |
| 2. Objectives | General: Develop a web platform that facilitates learning and updating in the MEAN and MERN stacks, providing structured and updated information about the involved technologies.  Specific: Collect and organize key information about the latest versions of the technologies involved in MEAN and MERN. Create structured learning paths to guide users in learning these stacks. Develop a news section that summarizes updates and comparisons between technology versions. Implement a login system that allows users to save their progress and comment on the news. Allow users to organize in-person courses or share virtual courses about the aforementioned technologies. |
| 3. Methodology | To address the problem of disorganization and fragmentation of information related to the MEAN and MERN stacks, an agile methodology based on Scrum will be applied. This methodology allows us to iterate over the project, making adjustments as we progress, ideal for innovation-based projects, and ensuring that each stage is completed with a functional and evaluable deliverable.  Stages and Work Methods:  Initial Planning:  Requirements Definition: Identify and document all key functionalities that the platform must have, such as learning paths, news section, login system, and commenting capability. This will be done through a planning meeting and the creation of a Product Backlog.  Conceptual Design: Create mockups of the platform to define the structure and user interface. This initial design will serve as a guide for development.  Iterative Development:  Sprints: Development will be divided into a series of sprints, each lasting two weeks. At the beginning of each sprint, the priority tasks from the backlog will be selected for implementation. Each sprint will include:  Functionality Development: Implementation of code and unit tests for the planned functionalities.  Review and Feedback: At the end of each sprint, the work done will be reviewed, the developed functionalities will be tested, and the plans for the next sprint will be adjusted based on the feedback received.  Frontend Design and Development:  Technologies: Technologies such as HTML5, CSS3, and JavaScript will be used for frontend development. This will ensure a modern user interface.  Learning Path Implementation: Learning paths will be designed and developed to guide users through the system, integrating them into the MEAN and MERN stacks using a combination of interactive tutorials and documentation.  Backend Design and Development:  Technologies: The backend will be developed using Node.js with Express.js. MongoDB will be used as the database to store information related to users, comments, and learning path content.  Integration and Testing:  Functional and User Testing: Functional tests will be conducted to ensure that all platform features work correctly. User tests will also be conducted to evaluate the user experience and make improvements.  Maintenance:  Documentation and Support: The code and developed functionalities will be documented to facilitate future maintenance. A basic support system will also be implemented to resolve potential issues that arise after deployment. |
| 4. Development | The requirements definition, conceptual design, most of the backend, and part of the frontend (views) have been completed.  During development, we realized that there were a series of design decisions that needed to be made and were not considered from the beginning, introducing uncertainty in the team about how to approach certain aspects (color palette, element borders, design patterns, programming practices, etc.). Although these aspects were considered by the team from the beginning, we should have formalized these agreements in extensive documentation detailing the how and why.  Time has been the determining factor for measuring the feasibility of development, so the design of the front and back end has taken priority over other tasks. As a result, these tasks have been extended much more than we had anticipated, while tasks like testing have been reduced in effort as they can be fully automated. |
| 5. Evidence | For this progress, we will present the documentation (Mockup and UML design), the progress and final reports, and the software itself, which corresponds to the website in an incomplete but functional state, along with the data models and all technologies used (imports). |
| 6. Interests and Professional Projections | By being in a real development situation of a project, we experienced more clearly and directly the work we could do upon graduation, in addition to allowing us the opportunity to know what we are best at and what we like.  Regarding our interests, they remain the same as at the beginning since, in the case of all members, they are not related to what we are developing for this course.  The project aligns with our professional interests in this specific case with full-stack web development, especially in the MEAN and MERN stacks. By creating this platform, we will deepen our knowledge in these technologies and improve our skills in information organization and friendly interface development, which will significantly contribute to our professional development, better preparing us for technical leadership and consulting roles in the web development field. |