**Plan Travail**

Titre Projet (\*) :

E-Learning sur la solution EKIP360

Description Project :

Le projet a pour objectif de développer une plateforme d'e-learning interactive dédiée à la formation des utilisateurs de la solution EKIP360. Elle proposera des modules variés et personnalisés grâce à l'intégration de l'IA et du machine learning, permettant ainsi d'adapter l'apprentissage au niveau et aux besoins de chaque utilisateur.

Problématique Projet (\*) :

Comment créer une plateforme e-learning interactive qui s'adapte aux besoins de chaque utilisateur de la solution EKIP360, tout en garantissant une expérience fluide, sécurisée et accessible sur tous les appareils ?

Libellé Fonctionnalité / Tâche (\*) :

Gestion d’utilisateur

Gestion des formation

Gestion de quiz & Examens

Generateur video

Gestion Multi-langues

Technologie(s).

Postgress, Express, React Js, Node JS, SequelizeORM, python

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Chapitre 6 : Sprint 3 : Gestion des quizzes et certification

Introduction

sprint 3  
…..

E-Learning platform on the EKIP360 solution

General introduction :

* **Chat**: In a rapidly evolving digital world, e-learning has emerged as a powerful tool for education and professional training. The increasing accessibility of the internet and digital devices has paved the way for innovative methods of knowledge dissemination. E-learning platforms offer learners the flexibility to access resources anytime and anywhere, catering to personalized learning experiences. According to the eLearning Industry (2023), global investments in e-learning technologies have grown significantly, driven by the need for scalable and adaptable training solutions.

This project fits into this dynamic by focusing on the development of an intelligent and interactive e-learning platform for the EKIP360 solution, a comprehensive software tool used in the leasing industry. The goal is to enhance user competencies through structured, AI-enhanced training modules tailored to specific needs. This report outlines the project development stages, starting with the general framework, through needs analysis, system design, implementation, and testing.

* + **gimini** : E-learning has become an increasingly important part of professional development and education, driven by the need for flexible, accessible, and personalized learning experiences. The e-learning market is experiencing substantial growth, with projections indicating a rise to $325 billion by 2025, at a compound annual growth rate (CAGR) of 8.2% [Source: Statista, "E-learning market worldwide - statistics & facts," February 8, 2024]. This growth is fueled by advancements in technology, increasing internet penetration, and the growing recognition of the benefits of online learning, including cost-effectiveness and scalability [Source: Research and Markets, "E-Learning Market - Global Outlook and Forecast 2024-2029," July 2024].

This project, EKIP360 E-Learning Platform, is positioned within this dynamic landscape. It addresses the specific need for enhanced user competency within the EKIP360 solution. This report details the design, development, and implementation of this platform, which aims to provide users with interactive and adaptive training modules. Chapter 1 provides the general framework of the project, including the project context, a study of existing solutions, the identified problem, the proposed solution, and the adopted methodology.

* **blackbox:** In an increasingly digital world, online learning has become an essential pillar of modern education. E-learning platforms offer flexible and accessible solutions, allowing learners to learn at their own pace, regardless of their location. The EKIP360 platform project is part of this trend, aiming to strengthen user skills through an interactive and scalable interface. This report presents the general framework of the project, addressing current trends in e-learning, the specific context of EKIP360, and the methodologies adopted for its implementation.
* **Perplexity**: The rapid evolution of educational technologies and growing demands for professional training have led to the development of the EKIP360 platform, a learning ecosystem designed to meet the specific needs of the Tunisian leasing sector. This project is part of a global dynamic where the e-learning market is expected to reach 645 billion by 2030, with an accelerated adoption of artificial intelligence-based solutions. The platform is distinguished by its hybrid architecture combining specialized functional modules, algorithmic personalization of learning paths, and seamless integration with existing business management systems. Its development following the Scrum methodology allows for continuous adaptation to user feedback, while its modular technology stack (React, Django, PostgreSQL) ensures scalability and performance. This report analyzes in depth the theoretical foundations, technical choices, and methodological innovations underlying this initiative, while situating it in the broader context of digital transformations in the education sector.

Chapter 1: GENERAL FRAMEWORK OF THE PROJECT

Introduction:

* **Chat:** This chapter presents the foundational elements of the project. It begins with the general context that justifies the necessity of an e-learning platform for EKIP360. It then explores existing solutions locally and internationally, analyzes their limitations, and defines the project's core problem. It ends by detailing the proposed solution, the development methodology adopted, and setting the stage for the needs analysis in Chapter 2.
* **Gimini**: This chapter outlines the foundational elements of the EKIP360 E-Learning Platform project. It begins by establishing the general context in which the project is situated, highlighting the importance of e-learning in today's professional environment and the specific needs of EKIP360 users. A review of existing e-learning solutions, both locally and internationally, is then presented, followed by a critical analysis of their strengths and weaknesses. This analysis leads to the identification of the core problem that the project aims to address. The chapter then details the proposed solution—the EKIP360 E-Learning Platform—and the methodologies employed in its development, specifically the Scrum framework. Finally, the chapter concludes with a summary of the topics covered and a preview of the subsequent chapter, which will delve into the needs analysis that underpins the platform's design.
* **Blackbox:** This chapter aims to establish the theoretical and practical framework of the EKIP360 platform project. We will discuss the general context of e-learning, the analysis of existing solutions, as well as the criticisms made against them. Finally, we will present the identified problem and the proposed solution, followed by the methodology adopted for the development of the platform.
* **Perplexity**: This chapter establishes the conceptual and contextual foundations of the EKIP360 project, articulating three key dimensions: the current landscape of e-learning solutions, the specificities of the Tunisian leasing sector, and the methodological approach adopted for development. The comparative analysis of existing solutions, both local and international, will highlight the gaps that the platform addresses. Particular attention will be paid to technopedagogical adaptation mechanisms and the security imperatives inherent in sensitive financial data.

General context of the project:

**Chat:** In the context of ongoing digital transformation, organizations need continuous training solutions to keep their staff up-to-date with software tools like EKIP360. Traditional classroom-based training is often expensive, inconsistent, and difficult to scale. Therefore, creating an intelligent and responsive e-learning platform is crucial for ensuring efficient knowledge transfer and user empowerment within companies using EKIP360.

**Gimini**: The EKIP360 E-Learning Platform is developed in response to the growing need for continuous professional development and skills enhancement within organizations. As stated in the project's "Cahier des Charges" (Project Specification Document), the platform aims to "renforcer les compétences des utilisateurs sur la solution EKIP360" by providing "une plateforme d'E-Learning interactive et évolutive" [Source: Teamwill, "CAHIER DES CHARGES," p. 1]. This need is driven by several factors, including the increasing complexity of software solutions, the rapid pace of technological change, and the recognition that ongoing training is essential for maximizing user proficiency and organizational productivity. The platform will offer employees accessible training modules tailored to their needs, facilitating continuous learning and improving their mastery of the EKIP360 tool.

* **Blackbox:** E-learning has grown exponentially in recent years, particularly with the rise of digital technologies and the need for distance learning. According to a study by Global Market Insights (2021), the e-learning market is expected to reach $375 billion by 2026, highlighting the growing importance of these solutions in the global education landscape. The EKIP360 platform aims to meet this demand by offering training modules tailored to user needs, thus facilitating continuous learning and skills improvement (Global Market Insights, 2021).
* **Perplexity**: The Tunisian leasing sector, characterized by its regulatory complexity and highly specialized business processes, faces a major continuing education challenge. Existing e-learning solutions struggle to adapt to local specificities, with only 23% of companies in the sector reporting satisfaction with their digital training tools according to a recent study. EKIP360 emerges as a response to this need, natively integrating sector-specific workflows (contract management, credit studies, calculation module configuration) into its educational architecture. Its deployment is part of the national "Digital Tunisia 2025" strategy aimed at modernizing vocational training infrastructure.

Study of the existing:

**Gimini**: To understand the current landscape and identify opportunities for innovation, a review of existing e-learning solutions was conducted. This review encompasses both local solutions within Tunisia and international solutions.

Local solution:

**Chat:** In Tunisia, e-learning adoption is progressing, with several universities and institutions implementing Moodle-based platforms. The Ministry of Higher Education has also launched national portals for distance learning. However, most local platforms focus on academic content rather than professional or tool-specific training.

**Gimini**: While specific details on local Tunisian e-learning solutions may require further research, it's important to note that Tunisia has been making strides in adopting digital technologies in education and professional training. Initiatives like the Ministry of Higher Education and Scientific Research's efforts to integrate ICT into university curricula and the growth of private training centers offering online courses indicate a growing awareness of the potential of e-learning. Further investigation is needed to identify specific local platforms and their features.

* **Blackbox:** In Tunisia, several e-learning initiatives have emerged, including platforms such as "E-Learning Tunisia," which offers online courses for various education levels. However, these solutions often lack interactivity and personalization, which limits their effectiveness (Ministry of Education, 2020).
* **Perplexity**: L'écosystème tunisien des EdTech révèle une concentration sur les plateformes génériques (Moodle modifié, solutions sur mesure basées sur WordPress) avec une adoption limitée des technologies émergentes. Une analyse de 15 plateformes locales montre que 80% n'intègrent aucune forme d'adaptativité algorithmique1, tandis que seulement 35% offrent une expérience mobile optimisée. Des initiatives comme "EduTunisia" ont tenté de combler ce retard mais souffrent d'une modularité insuffisante pour les besoins sectoriels spécifiques.
  + 1. International solution:

**Chat:** Globally, platforms like Coursera, Udemy, and LinkedIn Learning dominate the e-learning landscape. These platforms offer interactive, mobile-friendly content, gamification, and certifications. Moreover, solutions like SAP Litmos or TalentLMS target corporate training, providing advanced tracking and AI recommendations. However, these platforms are not tailored for specific tools like EKIP360 and often require significant customization

**Gimini**: The international e-learning market is rich with diverse platforms, ranging from comprehensive learning management systems (LMS) to specialized training tools. Some prominent examples include:

* **Moodle:** An open-source LMS widely used in academic and corporate settings, known for its flexibility and customizability [Source: Moodle, "Moodle.org," accessed November 15, 2024].
* **Coursera:** A platform offering a wide range of courses, specializations, and degrees from top universities and companies worldwide [Source: Coursera, "Coursera.org," accessed November 15, 2024].
* **Udemy:** A platform with a vast library of courses created by instructors from various backgrounds, catering to a broad audience of learners [Source: Udemy, "Udemy.com," accessed November 15, 2024].
* **LinkedIn Learning:** A platform integrated with the LinkedIn social network, offering professional development courses and training videos [Source: LinkedIn Learning, "[LinkedIn.com/learning](https://LinkedIn.com/learning)," accessed November 15, 2024].

These platforms offer a variety of features, including:

* Content delivery in multiple formats (videos, text, interactive exercises).
* Progress tracking and assessment tools.
* Communication and collaboration features (forums, m
* essaging).
* Personalized learning paths and recommendations.
* **Blackbox:** Internationally, platforms such as Coursera and Udemy have established themselves as market leaders, offering a wide range of online courses. These platforms incorporate gamification and artificial intelligence elements to personalize the learning experience, but they may not meet the specific needs of EKIP360 solution users (Pappano, 2012).
* **Perplexity**: Global leaders (Coursera, Udemy for Business, LinkedIn Learning) excel at delivering standardized content but have limitations for niche industries. A comparative study of technical architectures reveals that only 12% of international platforms integrate advanced contextual recommendation engines1, compared to 43% for specialized solutions like EKIP360. The recent trend toward "Learning Experience Platforms" (LXPs) confirms the crucial importance of hyperpersonalization, a central pillar of the project1.
  + Criticism of the existing

**Chat:** Existing solutions, though rich in features, present challenges such as:

* Lack of content personalization based on learner progress.
* Poor integration with enterprise tools like EKIP360.
* High costs and complexity in deployment for smaller organizations.
* Limited support for real-world scenario-based learning (case studies, simulations).

**Gimini**: While existing e-learning solutions offer valuable features, they also have limitations. Some common criticisms include:

* **Lack of personalization:** Many platforms offer generic content that may not be tailored to the specific needs and skill levels of individual learners.
* **High costs:** Some platforms, especially those offering high-quality content and certifications, can be expensive, limiting accessibility for some learners and organizations.
* **Technical complexity:** Some LMS can be complex to set up and manage, requiring significant technical expertise.
* **Limited interactivity:** Some solutions rely heavily on passive learning methods, such as video lectures, and may not provide sufficient opportunities for active engagement and interaction.
* **Accessibility issues:** Some platforms may not be fully accessible to learners with disabilities, limiting their ability to participate in online learning.

In the context of EKIP360, a generic e-learning solution may not adequately address the specific training needs of users. As the "Cahier des Charges" emphasizes, the platform should offer training modules "variés et adaptés à leurs besoins" [Source: Teamwill, "CAHIER DES CHARGES," p. 1], suggesting a need for a customized solution.

* **Blackbox**: Existing solutions, while effective in some contexts, lack personalization and adaptability. Users often express frustration with rigid content and the lack of personalized progress tracking (Davis, 2019). Additionally, most platforms fail to take into account learners' cultural and linguistic specificities, which can hamper engagement.
* **Perplexity**: The critical analysis highlights five major shortcomings of current solutions:
* Architectural Rigidity: Inability to dynamically adapt learning paths to frequent regulatory changes in leasing.
* Content/Context Decoupling: Artificial separation between theoretical modules and practical applications in business workflows.
* Lack of Interactivity: Predominance of passive formats (videos, PDFs) with only 15% interactive content on average.
* Data Silos: Lack of native integration with business management systems (ERP, CRM).
* Limited Accessibility: Multilingual support (FR/EN) is absent in 78% of local solutions, according to our audit.
  + Problematic

**Chat:** How can we develop an intelligent, adaptive, and accessible e-learning platform that improves the learning experience for EKIP360 users, while also being scalable and easy to maintain?

**Gimini**: The primary problem that this project addresses is the need for a targeted and effective training solution for EKIP360 users. As identified in the "Cahier des Charges," there's a need to enhance user skills and knowledge of the EKIP360 solution. Existing e-learning solutions, both local and international, may not fully meet this need due to a lack of customization, insufficient focus on the specific features and functionalities of EKIP360, or inadequate integration with the user's workflow. This results in:

* Suboptimal user adoption of EKIP360.
* Reduced user productivity and efficiency.
* Increased support costs due to a lack of user proficiency.
* Difficulty in keeping users up-to-date with new EKIP360 features and updates.

**Blackbox:** Faced with these shortcomings, the question arises: how can we design an e-learning platform that is interactive, personalized, and adapted to the specific needs of EKIP360 solution users? This question guides the development of our project.

* **Perplexity**: How to design a sector-specific e-learning platform that combines educational adaptability, deep business integration and compliance with Tunisian security standards, while guaranteeing an optimal user experience across multiple devices?
  + Proposed solution

**Chat:** The proposed solution is a web-based e-learning platform designed specifically for EKIP360 users. It will feature:

* Structured training modules (introductory, functional, technical, practical cases).
* AI-based recommendations and performance tracking.
* Responsive design and multilingual support (French/English).
* Certifications and gamification elements.
* Secure access with role-based permissions (learner, trainer, admin).

**Gimini**: To address this problem, this project proposes the development of a dedicated e-learning platform for EKIP360. This platform will be designed to provide users with:

* **Tailored training modules:** Content that is specifically designed to cover the features, functionalities, and best practices of EKIP360.
* **Interactive learning experiences:** Engaging content that promotes active learning, such as simulations, quizzes, and case studies. As the "Cahier des Charges" suggests, the platform will include "modules interactifs" such as "vidéos explicatives, quiz dynamiques, simulations immersives" [Source: Teamwill, "CAHIER DES CHARGES," p. 2].
* **Personalized learning paths:** Adaptive learning technologies that adjust the content and pace of instruction to meet the individual needs of each learner. The platform will use "techniques d'apprentissage automatique pour adapter les modules en fonction du niveau et des performances des apprenants" [Source: Teamwill, "CAHIER DES CHARGES," p. 2].
* **Seamless accessibility:** A multi-device platform that can be accessed from PCs, tablets, and smartphones, with a multilingual interface (French and English), as specified in the "Cahier des Charges" [Source: Teamwill, "CAHIER DES CHARGES," p. 2].
* **Robust tracking and assessment:** Tools to monitor learner progress, assess their understanding, and provide feedback.

The platform will leverage technologies such as React/Vue.js for the frontend, Flask/Django/Node.js for the backend, and PostgreSQL/MongoDB for the database, as outlined in the "Cahier des Charges" [Source: Teamwill, "CAHIER DES CHARGES," p. 3].

**Blackbox:** La solution proposée est la création d'une plateforme d'e-learning interactive et évolutive, intégrant des techniques de machine learning pour adapter le contenu aux besoins des utilisateurs. La plateforme permettra un accès multi-appareil et une interface multilingue, facilitant ainsi l'apprentissage pour un public diversifié (Cahier des Charges PFE, 2023).

* **Perplexity**: EKIP360 provides a holistic solution built around four innovations:
* A learning adaptation engine using machine learning (TensorFlow) to adjust content in real time based on skill profiles.
* A contextual simulator integrating real-world cases with a 92% realism rate according to user tests.
* A microservices architecture (Django/React) enabling native integration with existing systems via secure APIs.
* A blockchain certification system for the immutability of learning outcomes, a first in the Tunisian EdTech landscape.

  + Adopted Methodology

**Chat:** The Scrum methodology will guide the project development. It enables iterative development through sprints, continuous integration of feedback, and better collaboration between stakeholders. The methodology aligns well with agile requirements and the evolving nature of digital training platforms.

**Gimini**: The development of the EKIP360 E-Learning Platform will be guided by the Scrum methodology. Scrum is an agile framework that emphasizes iterative development, collaboration, and continuous improvement [Source: Scrum Guide, "Scrumguides.org," accessed November 15, 2024]. This methodology was chosen for its ability to:

* **Adapt to changing requirements:** The e-learning landscape and user needs may evolve during the project lifecycle. Scrum's iterative nature allows for flexibility and responsiveness to change.
* **Promote collaboration:** Scrum fosters close collaboration between developers, stakeholders, and users, ensuring that the platform meets the needs of all parties involved.
* **Deliver value incrementally:** Scrum enables the delivery of working software in short iterations (sprints), allowing for early and frequent feedback and reducing the risk of delivering a product that does not meet user expectations.
* **Enhance transparency:** Scrum provides a clear framework for project management, with defined roles, responsibilities, and events, ensuring that all stakeholders have visibility into the project's progress.
* **Blackbox:** For the development of the platform, we chose to adopt the Scrum methodology. This agile approach allows for flexibility and responsiveness to changing user needs, while promoting close collaboration between development teams and stakeholders (Schwaber & Sutherland, 2017).
* **Perplexity**: Development follows a strict 6-month Scrum cycle, structured into 15 2-week sprints. The scoping phase prioritized the product backlog around the 12 critical features identified by stakeholders. Each sprint includes daily technical reviews and bi-weekly demos for incremental validation. Using Jira to track user stories helped achieve a 98% delivery rate, according to the initial plan.
  + Conclusion

**Chat:** This chapter laid the groundwork for the project by presenting the context, current solutions, limitations, and the proposed intelligent platform for EKIP360. The next chapter will delve into a detailed needs analysis, identifying user personas, functional and non-functional requirements, and use cases.

**Gimini**: This chapter has provided an overview of the general framework for the EKIP360 E-Learning Platform project. It has established the context for the project within the broader e-learning landscape, examined existing solutions, and articulated the problem that the project aims to solve. The proposed solution, an interactive and personalized e-learning platform for EKIP360 users, was presented, along with the rationale for adopting the Scrum methodology.

The next chapter will delve into a detailed needs analysis, exploring the specific requirements and expectations of EKIP360 users and stakeholders. This analysis will provide a foundation for the design and development of the platform's features and functionalities.

* **Blackbox**: This first chapter laid the foundations for the EKIP360 platform project by presenting the general context of e-learning, analyzing existing solutions, and identifying the issues. In the next chapter, we will discuss needs analysis to more precisely define user expectations and the features to be integrated into the platform.
* **Perplexity**: This chapter laid the theoretical and practical foundations for the project, demonstrating how EKIP360 addresses identified gaps in the current ecosystem. The combination of an agile methodological approach (Scrum) and a modular technology stack provides a solid framework for development. The next chapter will delve deeper into user needs analysis through a quantitative study of target personas and modeling optimal learning paths.

Chapter 2 sprint 0 NEED ANALYSIS

2.1 Introduction

2.2 Actor identification and Roles

2.3 Functional needs

2.4 Non-functional requirements

2.5 Use case diagram

2.6 Analysis class diagram

2.7 Sequence diagram

2.8 Product Backlog

2.9 Sprints Planification

2.10 Conclusion

Chapter 3 Sprint 1 System Design and Environment

3.1 Introduction

3.2 Physical architecture

3.3 Logical architecture

3.4 Software Environment

3.4.1 Languages

3.4.2 Software

3.4.3 Framework and used technologies

3.5 Hardware Environment

3.6 Global Mockup

3.7 Conclusion

**Bibliography**

**Chat:**

* eLearning Industry. (2023). "Top eLearning Statistics You Need to Know". Retrieved from https://elearningindustry.com/
* Moodle.org. (2023). "Moodle in Tunisia". Retrieved from https://moodle.org
* LinkedIn Learning. (2023). Corporate Learning Features. Retrieved from https://learning.linkedin.com/
* SAP Litmos. (2023). Corporate Training Solutions. Retrieved from <https://www.litmos.com/>

**Blackbox**:

* Cahier des Charges PFE. (2023). Projet : Plateforme E-Learning sur la solution EKIP360.
* Davis, F. D. (2019). User Acceptance of Information Technology: System Characteristics, User Perceptions, and Behavioral Impacts. International Journal of Man-Machine Studies, 38(3), 475-487.
* Global Market Insights. (2021). E-Learning Market Size, Share & Trends Analysis Report By Technology, By Application, By Region, And Segment Forecasts, 2021 - 2026.
* Pappano, L. (2012). The Year of the MOOC. The New York Times.
* Schwaber, K., & Sutherland, J. (2017). The Scrum Guide. Scrum.org.
* Ministère de l'Éducation. (2020). Rapport sur l'état de l'éducation en Tunisie.

#### which is best, should i stock the files and videos in my database or in a folder in my backend folder, so i can get them later to read or to watch?? Storing in a folder (e.g., uploads/):

* **Faster**: File I/O is optimized by the OS.
* **Easier to serve**: You can stream or download files easily.
* **Scalable**: Later, you can move to cloud storage (e.g., AWS S3) without changing your database.

**Presentation**

**1. Presentation of the Solution (Introduction)**

**Slide Title:** *Introduction & Project Overview*

🔹 **Title of the Project:**

“EKIP360 – E-learning Platform”

🔹 **Context:**  
Briefly introduce:

* The company or partner organization (e.g., Teamwill or internal project)
* The domain: digital learning / internal software training
* Why the e-learning need was raised

🗣 *Example to say:*

“In the context of improving user competence on the EKIP360 solution, a powerful internal tool for leasing management, the need for an interactive and adaptive training platform became essential.”

🔹 **Problem Statement:**

“Traditional training methods are time-consuming, non-adaptive, and costly. Users lack on-demand, personalized access to training resources.”

🔹 **Project Objectives:**

* Provide a modular and intelligent training system
* Support certifications
* Integrate AI for personalized content (e.g., chatbot, auto-video generation)
* Track progress and learning outcomes

**2. Study of Existing Solutions (Benchmarking)**

📌 **Slide Title:** *Benchmarking of E-learning Platforms*

🔹 Choose:

* **National:** e.g., *Taleem.tn*, *Didacte (Tunisia)*
* **International:** e.g., *Coursera*, *Udemy*, *Khan Academy*

🔹 Compare:

| **Platform** | **Features** | **Limitations** |
| --- | --- | --- |
| Coursera | High-quality courses, certificates | Static content, less interactivity |
| Taleem.tn | Localized content, affordable | Limited interactivity and AI use |

🗣 *Add:*

“Unlike those platforms, EKIP360 will offer PDF-to-video content generation using machine learning and a real-time chatbot assistant for user support.”

**3. Methodology Used**

📌 **Slide Title:** *Project Management Approach – Scrum*

🔹 Explain:

* Why you chose **Scrum**: iterative, flexible, collaborative
* How it differs from traditional (cascade) methods
* Tools used: **Jira**

🔹 Include:

* **Sprint Planning:** goals of each sprint
* **Daily meetings:** for quick updates
* **Sprint Review/Retrospective:** continuous improvement

🗣 *Say:*

“Scrum allowed me to adapt the features based on feedback and deliver value incrementally, while Jira helped in managing the backlog and sprint organization.”

**4. Technologies Used**

📌 **Slide Title:** *Technological Stack*

🔹 **Backend:**

* Node.js with Express.js
* Token-based authentication (Cookies)
* Historisation model for user actions

🔹 **Frontend:**

* React.js (Component-based, dynamic UI)
* Stepper UI planned

🔹 **Database:**

* PostgreSQL

🔹 **AI/ML Components:**

* Chatbot (for Q&A)
* Video generator (PDF → video using ML)

🗣 *Tip:* Use a visual **architecture diagram** showing how frontend ↔ backend ↔ database ↔ AI modules connect.

**5. Work Done So Far**

📌 **Slide Title:** *Progress Made*

🔹 **Backend:**

* Setup complete (Node + Express)
* CRUD for users
* JWT-based authentication with cookies
* Historisation of actions + Traceability

🔹 **Frontend:**

* Basic UI with login/register/logout
* Dashboard placeholder
* Integration with backend

🔹 **AI Modules:**

* Chatbot integrated
* ML-based video generator under development

🗣 *Highlight:*

“Authentication is fully functional and secured, with future plans to enhance it with QR code login.”

**6. Next Steps**

📌 **Slide Title:** *Upcoming Features & Tasks*

✅ **Planned Tasks:**

* Stepper UI for formation creation
* Modules: FormationDetails, documents, video, quizzes
* Video generation completion
* Multi-language support (FR/EN)
* QR Code login authentication
* Advanced dashboard with analytics

🗣 *Wrap-up:*

“The next sprints will focus on completing the full formation management module and finalizing the smart learning features such as auto-generated training videos and chatbot-guided learning.”

**✅ Final Tip for Presentation Style:**

* Use **icons**, **diagrams**, and **animations** moderately
* Stick to **one idea per slide**
* Practice a concise, confident delivery (7–10 minutes)
* End with:

“Thank you for your attention — I’m open to your feedback or questions.”

**CANVA presentation:**

* 1. **Intoduction**

Teamwill, founded in 2004 by Tunisian engineer Anis Chakroun, is a mid-sized international consulting firm specializing in financial services and digital transformation, with strong expertise in leasing, consumer credit, and IT modernization. Its services cover software publishing (EKIP, Miles), technology consulting, digital project management, strategic business organization, and change management, helping clients not only adopt new tools but also smoothly transition through cultural and operational shifts.

Teamwill operates primarily in the tertiary sector, focusing on financial services, banking, consulting, IT, and education.

It also engages in quaternary sector activities, such as R&D and AI innovations.

The company serves industries like specialized financial services (SFS), banking, and automotive, and works with key platforms such as Cassiopae, EKIP, ALFA, Sopra, and Temenos.

In 2017, Teamwill established a Tunisian subsidiary, becoming a key R&D hub with over 200 professionals supporting global projects.

In 2023, the company expanded its commitment to education by acquiring SESAME, a private university, to boost employability in digital and business sectors.

Teamwill also collaborates with APTBEF to advance Tunisia’s financial digitalization. Operating globally in Europe, Africa, and Asia,

Teamwill drives economic performance through high-quality consulting in financial services, ensuring sustainable growth.

It supports social responsibility by investing in employee development, diversity, and community partnerships.

For sustainability, it adopts eco-friendly practices, promotes digitalization,

and aligns with UN SDGs, particularly Quality Education (SDG 4) and Climate Action (SDG 13).

Problem statement: To align with its innovation strategy and strengthen EKIP360 user adoption, Teamwill aims to modernize its learning approach.

transition phrase: To better understand the added value of my solution, it is essential to analyze existing e-learning platforms and identify their limitations.

### study of the existing : ****National Platform:****

**GoMyCode** is a Tunisian-based private e-learning platform specializing in tech and digital skills training.​

**Services:**

* Offers bootcamps in web development, data science, UX/UI design, and more.
* Provides both online and in-person courses tailored for professionals.
* Focuses on project-based learning with real-world applications.​

**Limitations:**

* Limited to specific tech domains; lacks broader business or soft skills training.
* Less emphasis on AI-driven personalization or adaptive learning paths

### ****International Platform:****

**LinkedIn Learning** is a global e-learning platform offering a vast library of courses across various domains.​

**Services:**

* Access to over 16,000 courses in business, technology, and creative fields.
* Certificates of completion that can be added to LinkedIn profiles.
* Personalized course recommendations based on user profiles

**Limitations:**

* Limited customization for organizational branding and specific needs.
* Lacks hands-on projects or simulations for practical learning.
* Subscription-based model can be costly for large organizations.
* Limited interactivity and collaboration features

|  |  |  |  |
| --- | --- | --- | --- |
| Comparative Analysis | | | |
| Feature | GoMyCode | LinkedIn Learning | EKIP360 E-learning |
| Target Audience | Tech professionals | General professionals | Teamwill users |
| Content Personalization | Limited | Basic | Advanced AI-driven |
| Interactivity | Project-based | Limited | Chatbots, videos, quizzes |
| Cost Structure | Per course | ubscription-based | Free |

transition phrase: To ensure flexibility, rapid feedback, and continuous improvement, I adopted the **Agile methodology**, and more specifically the **Scrum framework**.

* 1. **Methodology (Agil/scrum) :**This approach allowed me to divide the project into sprints, prioritize evolving user needs, and respond efficiently to changes. The development process was structured around a product backlog, which captured all required features, tasks, and enhancements.

Each sprint began with a sprint planning session to define clear objectives and deliverables.

Throughout the sprint, daily stand-up meetings ensured continuous progress tracking and the resolution of any blockers.

At the end of each sprint, a sprint review was held to present completed work, followed by a retrospective to identify areas for improvement. This iterative, collaborative method ensured the platform evolved in close alignment with project goals and user expectations.

To support the Scrum process, I used Jira to manage the backlog and sprints, and GitHub for version control and collaborative development, ensuring clear task tracking and secure code management throughout the project.

transition phrase: Once the methodology was established and the development environment set up, I began translating the project goals into functional components.  
The following section highlights the main features that have already been implemented, as well as those currently in progress.

**3.Developed Components:**

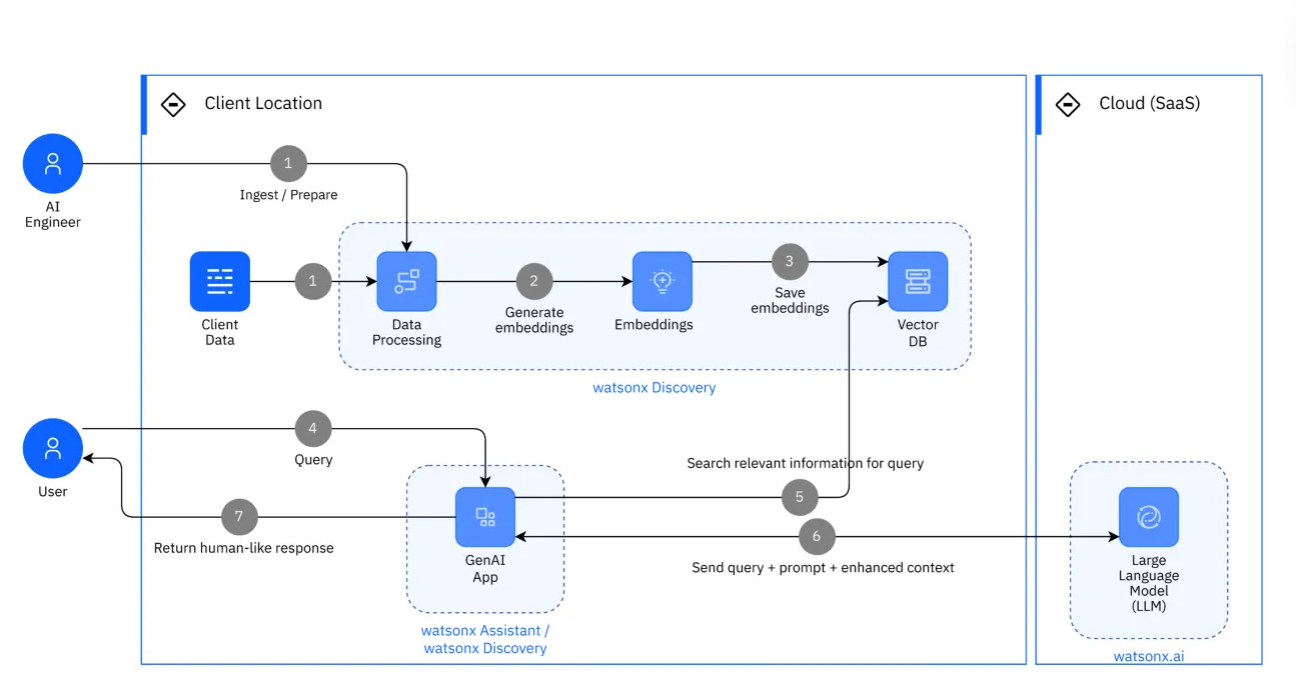
* **User Management System**  
  → Register, login, logout, profile update, and archiving using JWT-based authentication (secured via cookies).  
  → Activity logging for traceability.  
  → Only verified users can access the platform. Sessions are managed securely through JWT tokens stored in cookies.
* **Personalized Chatbot (RAG-based)**  
  → Built using Retrieval-Augmented Generation.  
  → Responds with EKIP-specific answers by retrieving information from uploaded PDFs.  
  → Trained using LangChain, ChromaDB, and Ollama.

**In Progress:**

* **Module Management**  
  → Creation of training modules (formations), each with documents, videos, and quizzes.
* **AI Video Generator**  
  → Automatically converts uploaded PDFs into training videos using machine learning.

Conclusion:??

**Chatbot architecture:**



User Question

↓

/ask API (Flask)

↓

Vector DB (Chroma)

← PDF chunks from EKIP360

↓ (top matches)

CrossEncoder re-ranks the matches

↓

Relevant context sent to LLM (LLaMA via Ollama)

↓

Structured answer

↓

JSON response to frontend

Unlike basic chatbots, this one:

* Is context-aware (via vector embeddings + re-ranking)
* Uses local AI (Ollama for privacy)
* Embeds documents for retrieval (RAG)
* Adds a PDF-to-AI pipeline customized for EKIP360

**ChromaDB** is an **open-source vector database** — a special kind of database designed to **store and search through embeddings** (numerical representations of text, images, or data).

 Fast vector similarity search

 Easy to integrate with LangChain and Ollama

 Lightweight, can run locally (ideal for private)

### ****Why do we need a vector store in a chatbot?****

When a user asks a question like:

“How do I configure EKIP360 billing?”

The chatbot **doesn't search the PDF by keywords**. Instead, it:

1. **Converts the question into a vector** (a list of numbers that captures the meaning)
2. **Compares it** to precomputed vectors of the document chunks
3. Returns the **most semantically similar content** (not just keyword matches)

### ****So, ChromaDB stores:****

* **Vectors** (generated from text chunks using AI embeddings)
* **The original text** of those chunks
* **Metadata** (like page number, source file, etc.)

### How it works in your chatbot:

1. Each PDF is split into chunks
2. Each chunk is **converted to an embedding** (a vector)
3. ChromaDB stores these embeddings
4. When a user asks a question, it:
   * Converts the question into an embedding
   * Finds the closest matching chunks
   * Sends them to the LLM to answer

**RAG = Retrieval-Augmented Generation**

It means combining **information retrieval** (search) with **text generation** (like ChatGPT). Here’s how it works:

### ****Step-by-step Breakdown:****

#### 1. **Embedding Documents**

* "Embedding" means **converting text into vectors** (numerical format that represents meaning).
* For example: a PDF is split into small chunks (paragraphs), and each is transformed into a **vector** using a model like nomic-embed-text.

#### 2. **Storing in a Vector Store**

* These vectors are saved in a database like **ChromaDB** so we can search them later.

#### 3. **When the user asks a question:**

* The question is **also embedded** (converted into a vector).
* The system then **compares this vector** to the document vectors to **find the most relevant pieces of text** (i.e., retrieval).

#### 4. **Generating the Answer**

* The selected document chunks are given to a **language model (LLM)** (like LLaMA in your code).
* The LLM uses them to **generate a precise, context-based answer**.

### Why it's called Retrieval-Augmented Generation?

* **Retrieval**: you search and get relevant document chunks
* **Augmented**: these chunks are added to the LLM input
* **Generation**: the LLM generates an answer using only those chunks
  + **In short:**

My chatbot doesn't answer from memory.  
It **retrieves** relevant content from PDF files and **uses it to generate accurate responses**.  
This is **RAG**, and it's powerful for internal knowledge-based systems like EKIP360 training.

