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"An Economic Enterprise / A Startup"
For the award of the Master's degree
Field: Computer Science
Specialization: Cybersecurity and Artificial Intelligence

Rushita

Secure e-prescription platform powered by Artificial Intelligence

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We also express our gratitude to Professor Boutouba Mohammed for his valuable training and guidance, and we welcome him to our project discussion committee.

Dedications

*To my grandmother
To all whom my grandmother loves*

Kaddache mohammed el amine

◆ ◆ ◆

*to my parents
to my brothers
to my family
to my friends*

Elmeguenni nabil

◆ ◆ ◆

dedicate this work to :
*my beloved parents, whose love, sacrifices, and unwavering support have
been my greatest strength*
*my grandparents, whose love and gentle presence have always brought me
comfort*
my siblings, for their constant encouragement and companionship
*all the members of my father's and mother's families, for their kindness
and support*
*my teachers, for their dedication and guidance my classmates, for the
shared memories and moments of growth*
my friends, for their laughter, loyalty, and support throughout this journey

Bendimerad Mohamed

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Rushita Secure e-prescription platform powered by AI

General Introduction:

In recent years, Algeria's digital health sector has witnessed increasing dynamism and various scattered initiatives aimed at integrating modern technologies into healthcare services, aligning with the global shift toward digital transformation. Encouraging signs of this trend have emerged through the launch of certain projects related to electronic health records, appointment booking platforms, remote consultation services, and the introduction of local applications for health monitoring, especially in the wake of the COVID-19 pandemic, which highlighted the urgent need to digitize the sector. [1]

However, despite these efforts, a significant gap remains between digital ambitions and the reality on the ground. One of the clearest manifestations of this gap is the continued heavy reliance on paper-based prescriptions, whether handwritten or printed using traditional devices. This form of prescription, in addition to being prone to damage, loss, and forgery, hinders the efforts to connect various actors within the healthcare ecosystem, such as doctors, pharmacists, and insurance companies. Furthermore, handwritten prescriptions are vulnerable to errors in medication dispensing or confusion in dosage interpretation posing a serious threat to patient safety. [2]

On another front, the medical software currently available in the Algerian market whether locally developed or imported still suffers from considerable limitations in terms of functionality and compatibility with the Algerian healthcare context. Many of these systems fail to accommodate linguistic, regulatory, or even cultural specificities of local users, making them ineffective tools or even an additional burden on healthcare professionals rather than supportive assets. When it comes to younger doctors or the new generation of medical practitioners, their technological expectations far exceed what is currently on offer. They anticipate intelligent, integrated, and user-friendly tools, leveraging artificial intelligence, cloud computing, and real-time collaboration with all stakeholders involved in the treatment process. In light of this, the real challenge becomes clear: how can the Algerian healthcare system transition from superficial digitization to a truly functional, effective, and future ready digital transformation?

to address our research problem, this thesis is structured around six complementary axes. The **first axis** provides a detailed presentation of the Rushita project, including its core values, strategic objectives, team, and implementation timeline. The **second axis** highlights the innovative aspects of the project, whether they are market-based, incremental, or technological—particularly the integration of artificial intelligence and the paperless digital transformation. The **third axis** focuses on the strategic market analysis, including user segmentation, competitive analysis, and the development of a marketing strategy. The **fourth axis** outlines the organizational and operational plan of the platform, describing the workflows for doctors and pharmacists as well as the structure of human resources and key partnerships. The **fifth axis** offers a comprehensive financial analysis, covering cost and expense evaluation, sales forecasts, balance sheets, income statements, and cash flow projections. Finally, the **sixth axis** presents the experimental prototype developed, detailing the technological choices (frontend, backend, database, security, AI), the testing processes carried out, and future development perspectives. This logical structure aims to demonstrate the feasibility and relevance of the Rushita project in transforming the prescription system in Algeria.

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First axis: Presentation of the project

1. The idea of the project

The concept for Rushita emerged from a critical observation in the healthcare sector: handwritten prescriptions often lead to serious issues due to their ambiguity and illegibility. Pharmacists themselves sometimes struggle to decipher doctors' handwriting, raising significant risks such as incorrect medication dispensation, drug overdoses, harmful drug interactions, and allergic reactions. Such errors can severely compromise patient safety, occasionally leading to life-threatening situations. [3]

Moreover, despite significant strides in digitizing numerous sectors across Algeria, the healthcare industry still predominantly relies on paper prescriptions. This reliance results in substantial annual costs, inefficiencies, and lost medical information, negatively impacting both economic and environmental resources.

The Rushita project directly addresses these challenges by creating an advanced, secure electronic prescription platform powered by artificial intelligence. This digital solution offers doctors precise, real-time insights during prescription writing, including immediate alerts for potential drug interactions and patient allergies. Additionally, it provides easy access to comprehensive patient medical histories, significantly enhancing diagnostic accuracy and safety.

By transitioning to a fully digital format, Rushita ensures the clarity of medical prescriptions, eliminates risks associated with handwriting ambiguity, and improves overall medical care quality. Furthermore, the platform fosters collaboration between healthcare institutions through unified electronic medical records, streamlining patient management, enhancing inter-professional communication, and significantly reducing paperwork.

Rushita represents a decisive advancement in Algeria's digital health landscape, promising improved patient outcomes, greater healthcare efficiency, and sustainable resource management.

2. Suggested Values

The **Rushita** platform embodies several core values, each designed to significantly enhance the healthcare sector, delivering both economic and environmental advantages:

- ✓ **Enhanced Patient Safety and Security:**

Rushita employs advanced encryption and robust security technologies to ensure the confidentiality and protection of sensitive patient information. By centralizing medical records on a secure digital platform, Rushita allows healthcare professionals to swiftly access comprehensive patient histories, thereby improving diagnostic accuracy and overall patient safety.

- ✓ **Economic Efficiency:**

By eliminating paper prescriptions, Rushita considerably reduces healthcare costs related to printing, storage, and management of physical records. Additionally, the

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platform's integrated voice-prescribing feature and mobile application significantly streamline the prescribing process, saving valuable physician time and resources, enabling doctors to prescribe medications effortlessly from anywhere, at any time. [4]

✓ **Environmental Sustainability:**

Rushita supports sustainable healthcare by drastically reducing the environmental footprint traditionally associated with extensive paper usage. The move toward a fully digital and paperless prescription system aligns perfectly with global environmental goals.

✓ **Innovation through Artificial Intelligence:**

Leveraging state-of-the-art AI technologies, Rushita provides real-time alerts regarding potential drug interactions and patient allergies during prescription creation. This proactive approach significantly reduces medical errors traditionally associated with illegible handwriting and ensures safer, more reliable healthcare outcomes.

✓ **Inter-institutional Collaboration and Efficiency:**

By consolidating patient data into a single, unified platform, Rushita facilitates seamless cooperation among healthcare providers and institutions. This centralization enhances treatment consistency, avoids potential risks from overlapping treatments prescribed by different health providers, and is fully aligned with the Algerian government's strategic objectives for healthcare digitization.

Rushita actively contributes to advancing healthcare quality, efficiency, and sustainability through these core values, positioning itself as a cornerstone of digital transformation in Algeria's healthcare sector.

3. The work team

➤ KADDACHE Mohammed El Amine

The project manager is a computer engineer and will be responsible for the website version.

Bachelor of Information Systems in 2023

Master of Cybersecurity and Artificial Intelligence 2023-2025

➤ ELMEGUENNI Nabil

A computer engineer will be responsible for the financial side of the project, market studies, and the marketing department

Bachelor of Information Systems in 2023

Master of Cybersecurity and Artificial Intelligence 2023-2025

➤ BENDIMERAD Mohamed

A computer engineer will be responsible mobile app version.

Bachelor of Information Systems in 2023

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Master of Cybersecurity and Artificial Intelligence 2023-2025

➤ Dr. BENDIABDALLAH Mohammed Hakim

Associate professor in the Department of Mathematics and Computer Science at the University of Aïn-Temouchent (Algeria).

Responsible for doctoral training on machine learning and its applications.

completed his academic career in computer science at the University of Oran 1 (Algeria), obtaining his PhD in 2017.

Subsequently, and even during his doctoral studies, he worked for a company specializing in software development and web applications.

The main area of research is machine learning and deep learning.

Responsible for doctoral training on machine learning and its applications.

4. Project objectives

Our objectives are strategically planned and structured into short, medium, and long-term phases to effectively establish Rushita as the leading digital healthcare platform in Algeria and beyond:

- **Short-term objective:**
 - Launch the Rushita platform in Ain Témouchent or Algiers.
 - Initiate strategic partnerships and collaborations to onboard a significant number of public and private healthcare providers.
 - Build strong relationships with key healthcare stakeholders to ensure widespread initial adoption and integration of our services.

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- **Medium-term objective:**
 - Achieve at least **30% market penetration** within major cities such as Oran, Constantine, Annaba, and Sétif.
 - Expand the platform's functionalities by introducing advanced, AI-driven features to further enhance prescription accuracy, patient safety, and overall healthcare efficiency.
- **Long-term objectives:**
 - **Secure a nationwide adoption rate of 70%**, establishing Rushita as the premier provider of digital prescription solutions in Algeria. Reinforce our market leadership through evidence-based demonstrations of improved healthcare outcomes, efficiency, and patient satisfaction.
 - Become the leading digital prescription provider within the broader Maghreb region, notably expanding operations into Tunisia and Morocco. By this stage, Rushita will have solidified its reputation as a trusted innovator, delivering cutting-edge, secure, and reliable digital prescription services across regional healthcare markets.

4.1. The project implementation schedule

This project will be completed during the year 2025 following a structured and phased plan. The first quarter is dedicated to foundational tasks, including conducting a market study, defining key features of the platform, and developing the economic and marketing plan. From March to May, efforts will focus on UI/UX design and prototyping, followed by front-end development starting in May. Back-end development will take place between June and July. Testing and performance optimization are scheduled for July through September. Server setup and configuration will be handled in September and October, while the final implementation of features is planned for November. The official launch of the platform is scheduled for December 2025.

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Task \ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Market study												
Define the key features of the platform												
Define the economic/marketing plan												
UI/UX design and prototype												
Front-end development												
Back-end development												
Testing, and performance improvement												
Server setup/configuration												
Implement the latest features												
Lunch of the platform												

Table 1: project realization plane

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Second axis: Innovative aspects

1. The nature of innovations

➤ Market Innovation:

The Rushita platform introduces a groundbreaking transformation within the healthcare prescribing process by fully digitizing prescriptions and harnessing advanced artificial intelligence technologies. This significant innovation addresses critical market needs by dramatically reducing medical errors, improving accuracy, and enhancing overall patient safety.

Key market innovations include:

- ✓ **Digitization and Accuracy:** Transitioning from handwritten prescriptions to a fully digital, AI-powered system that reduces the potential for errors due to illegibility and misinterpretation.
- ✓ **Flexible and Mobile-Friendly Design:** Rushita enables healthcare professionals to prescribe medications from anywhere, at any time, via a user-friendly mobile application, thus removing the traditional constraints of clinic-based prescription management.
- ✓ **Voice Dictation Feature:** A state-of-the-art voice-recognition tool allowing doctors to dictate prescriptions effortlessly, further saving valuable consultation time and streamlining daily workflow.
- ✓ **Enhanced Healthcare Efficiency:** By aligning with global digital health trends, Rushita equips Algerian healthcare providers with a powerful, reliable, and efficient prescribing system, elevating the standard of medical care provided.

➤ Increasing innovation:

Rushita continually evolves beyond traditional, paper-based prescribing methods toward an integrated digital solution, enhancing healthcare services across Algeria. This incremental innovation focuses on:

- ✓ **Unified Patient Database:**
Establishing a centralized digital medical record accessible by both public and private healthcare institutions. This unified database ensures comprehensive patient histories are readily available, significantly improving diagnostic speed and precision.
- ✓ **Reduction of Medical Errors and Costs:**
By eliminating manual handwriting processes, Rushita substantially decreases common prescribing errors, improving patient safety and care quality. Additionally, this digital transition significantly reduces financial costs and environmental impact associated with traditional paper-based systems.

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✓ **Scalable Evolution:**

The platform is designed to adapt continuously based on user feedback and emerging technological advancements, ensuring sustained innovation and ongoing improvements aligned with healthcare provider needs and national digital health strategies.

Through these distinct and complementary innovations, Rushita aims to reshape healthcare practices, making them safer, more efficient, and more environmentally responsible.

2. Innovation fields

The innovative aspects of the Ruhita project include:

➤ **Algeria's First E-Prescription Platform:**

Rushita pioneers the transition from traditional paper-based prescriptions to a fully digital system, enhancing efficiency, reducing costs, and minimizing environmental impact.

➤ **Seamless Integration between Health Institutions:**

Rushita is the first platform to unify public and private healthcare institutions under a single, centralized patient database. This connectivity ensures more accurate diagnoses by providing doctors access to the patient's complete medical records and promotes collaboration between healthcare providers.

➤ **Smart, Real-Time Safety Alerts:**

Rushita enhances patient safety by offering real-time alerts on potential drug interactions and allergic reactions to drug ingredients. By proactively identifying risks, Rushita reduces medical errors and improves treatment outcomes, ensuring a higher standard of care for each patient's unique health profile.

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Third axis: Strategic market analysis

1. Market segmentation

The potential market:

Rushita's potential market includes a wide spectrum of the health sector across the country, including specialized and general doctors in the public and private sectors in various hospitals, clinics, and medical centers, as well as all the country's pharmacists. There is also Potential expansion to neighboring countries.

The target market:

In our target market, we focus on private physicians in hospitals and clinics who need to effectively manage prescriptions across multiple physicians among themselves or with their patients. We are also targeting pharmacists by providing inventory management features integrated with Chifa-2 that do not provide this critical need.

Rushita also provides the necessary infrastructure for teleconsultation, enabling providers to offer remote healthcare services to their patients.

This choice is based on the positive feedback from doctors and pharmacists on the beta version of the platform and the consideration of their suggestions.

Moreover, since Rushita product is a digital platform, it is not restricted by geographical boundaries and can serve a wide network of healthcare professionals from all over the country.

2. Measuring the intensity of competition

There are several modest attempts to digitize the health sector, but no competitor offers the innovative features of Rushita's platform due to its 0-paper orientation and its contribution to increasing the accuracy and speed of diagnosis by exploiting artificial intelligence and voice dictation. Unlike all other applications, which tend to print prescriptions instead of writing them by hand and have low local penetration, Rushita's platform is 0-paper. Our main competitors are Nulife and EasyClinic.

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platform	Strengths	Weaknesses
Nulife	<ul style="list-style-type: none"> • Clear and simple user interface. • Focused on clinic profit statistics. • Interface for the doctor's secretary. 	<ul style="list-style-type: none"> • Very little presence on social media platforms, no more than a few hundred. • Relying on traditional methods of printing costly prescriptions. • How drugs are entered into the software poses problems for some pharmacists with the CNAS due to the multiplicity of the same drug forms. • No unified Patient medical history data between different clinics.
EasyClinic	<ul style="list-style-type: none"> • Good social media presence thanks to paid advertising and good technical support. • Presence in more than 1250 clinics over the last 6 years. • Different offers that include a mobile version and a secretary version. 	<ul style="list-style-type: none"> • Relying on traditional methods of printing costly prescriptions. • Slightly complicated application interface. • No unified Patient medical history data between different clinics.

Table 2 Analysis of the competition

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SWOT analysis	
Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Pioneering digital health as the first e-prescription platform in Algeria. ▪ Comprehensive integration of medical data via a unified database between different medical institutions. ▪ Eliminate drug interaction errors and allergies with AI features. ▪ Improve work efficiency with voice dictation and mobile access. ▪ Reduce costs and increase sustainability by eliminating paperwork issues. ▪ Providing an optimized infrastructure for telemedicine consultations. ▪ Leverage the centralized database for improved healthcare insights. 	<ul style="list-style-type: none"> ▪ The platform depends on reliable internet access, which may not always be available. ▪ Being a new platform, it may slow adoption among doctors and pharmacists.
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Securing funding, partnerships, and government support by leveraging Algeria's digitization and zero-paper strategy. ▪ Exploiting the post-pandemic global wave of telemedicine to spread. ▪ The insistence of specialists and the Ministry of Health on the need to adopting digitization and launch a digital electronic patient file. ▪ Rising digitalization in Algeria is boosting the acceptance and adoption of digital technologies. ▪ Competitive edge through leveraging AI technology. 	<ul style="list-style-type: none"> ▪ Potential resistance from traditional professionals accustomed to paper-based systems to move to a digital system. ▪ Emerging local and international rival platforms pose a significant competitive challenge in capturing the market. ▪ Poor Internet infrastructure may hinder national adoption. ▪ Slow approval processes could delay public sector expansion efforts. ▪ Managing sensitive patient data exposes the platform to cybersecurity threats.

Table 3 SWOT analysis of Rushita

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3. The marketing strategy

Target Audience:

Our Primary Target is the Private practice doctors in clinics and hospitals, pharmacists, and, for the long-term focus, the public hospitals and clinics are our secondary Target.

Value Proposition & Key Messaging:

Core Message: "***Rushita: The first secure AI-Powered E-Prescription Platform for Safer, More Efficient Healthcare in Algeria.***"

With the following Key Benefits:

- ✓ Enhanced Patient Safety: AI-driven drug interaction and allergy alerts.
- ✓ Improved Accuracy: Eliminates errors from illegible handwriting.
- ✓ Increased Efficiency: Voice prescribing, mobile access, faster workflows.
- ✓ Cost Savings: Reduces paper costs and administrative burden.
- ✓ Unified Patient Records: Access to comprehensive medical history.
- ✓ Security: Data protection.

Targeted Marketing Campaigns:

To promote Rushita's platform and get the desired spread, the team works continuously on digital and traditional marketing through:

- ✓ publishing Blog posts on topics related to e-prescribing, AI in healthcare, and patient safety, with Infographics to visually communicate key benefits on our different social media accounts, and running targeted ads to doctors and pharmacists
- ✓ Building an email list and sending targeted newsletters with product updates, industry news, and special offers.
- ✓ Exhibiting at medical conferences and trade shows in Algeria.
- ✓ Media outreach through TV channels and radio stations interviews to gain trust and spread.

Platform Offers & Pricing:

To effectively attract and retain clients, our platform will implement a tiered pricing model offering flexible options to suit a range of needs and budgets. This strategy will leverage a combination of value-driven incentives and promotional offers to encourage adoption and build long-term relationships through:

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Strategic Promotional Offers:

To further encourage client acquisition and build long-term relationships, Rushita will implement a range of targeted promotional offers.

- ✓ Early Adopter Discount: To reward early adopters and build initial momentum
- ✓ Referral Program: that rewards existing customers for referring new clients to the platform.
- ✓ Free Trial: to experience the full range of features and benefits before committing to a subscription.
- ✓ Freemium Model: We will offer a basic version of the Rushita platform at no cost for pharmacies to serve as a powerful lead-generation tool.

Tiered Subscription Plans:

To cater to the diverse requirements of our target market, Rushita will offer three distinct subscription tiers:

- ✓ Basic (Essential): Designed for individual practitioners seeking to streamline their prescription workflow. This plan will include essential features and a limited number of prescriptions per month at a competitive price point.
- ✓ Standard (Professional): Targeted towards growing clinics and multi-doctor practices, the Standard plan will provide expanded functionalities, a higher prescription volume, and dedicated support to optimize efficiency.
- ✓ Premium (Enterprise): The Premium plan will cater to the needs of hospitals, large clinics. It will offer unlimited prescriptions, priority support, custom integrations, and advanced analytics.

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Feature	Basic (Essential)	Standard (Professional)	Premium (Enterprise)
Monthly Price (DZD)	2,500 DA	3,500 DA	4,500 DA
Annual Price (DZD) (Discounted)	27,500 DA (1 Month Free)	38,500 DA (1 Month Free)	49,500 DA (1 Month Free)
Number of Prescriptions	600/month	1000/month	Unlimited
Number of Users	1	3	10
Drug Interaction Alerts	No	No	Yes
Allergy Alerts	No	Yes	Yes
Patient Records Access	No	Yes	Yes + Analytics
Voice Prescribing	No	Yes	Yes
Mobile App Access	No	Yes	Yes

Table 4 Rushita platform offers

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Fourth axis: Organization plan

1. Platform Operation

Rushita is designed to be user-friendly for both doctors and pharmacists. The operation differs slightly based on the user type:

For Doctors:

▪Account Registration & Verification

- ✓ **Sign-Up:** Doctors create their accounts on the platform.
- ✓ **Verification:** The account is verified to ensure professional authenticity.

▪ Plan Selection & Payment

- ✓ **Plan Selection:** The doctor selects a plan that best suits their requirements.
- ✓ **Payment Processing:** The platform guides the doctor through a secure payment process to complete their subscription purchase. A receipt and plan confirmation are issued upon successful payment.

▪Access to Patient Records

- ✓ **Profile Setup:** Once logged in, doctors can view or update patient profiles.

▪Prescription Creation Process

- ✓ **Input Prescription:** Using either manual entry or voice dictation, doctors generate an electronic prescription.
- ✓ **Real-Time AI Checks:** Integrated AI technology reviews the prescription for drug interactions, allergies, and contraindications, alerting the doctor immediately.

▪Finalization & Secure Transmission

- ✓ **Review & Adjust:** Doctors make necessary adjustments based on the AI alerts.
- ✓ **Digital Signing:** The final prescription is digitally signed, ensuring authenticity and security.
- ✓ **Dispatch to Pharmacy:** The prescription is securely transmitted to the selected pharmacy.

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For Pharmacies:

▪Pharmacy Account Registration

- ✓ **Sign-Up:** Pharmacies register and verify their account to join the Rushita network.
- ✓ **Verification:** The account is verified to ensure professional authenticity.

▪Prescription Reception & Verification

- ✓ **Receive Prescription:** Digital prescriptions are received securely in real time, and their authenticity is verified automatically.
- ✓ **Check Details:** Pharmacies verify the prescription details and any associated alerts.

▪Medication Dispensation & Transaction Management

- ✓ **Dispense Medication:** Once verified, the pharmacy prepares and dispenses the medication.
- ✓ **Update:** The system is updated with transaction details.

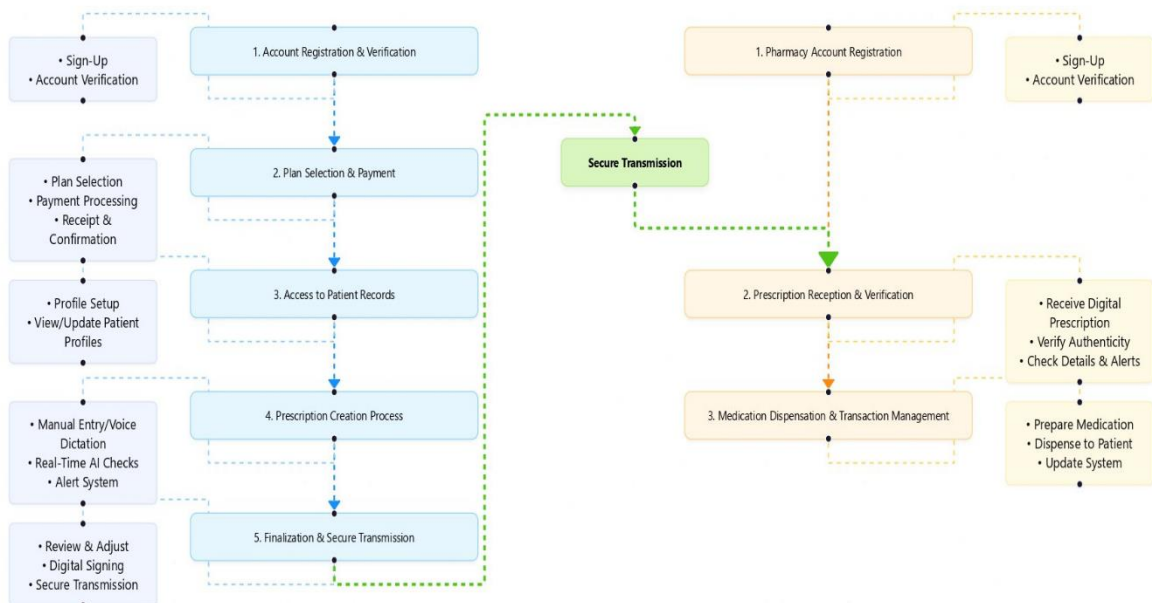


Figure 1 Rushita Workflow Diagram

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2. Human Resources

In the beginning, Rushita will operate with a small team, and some tasks will be outsourced, such as accounting and specific marketing tasks. As the platform grows and gains market share, we plan to build internal teams specializing in the following functions:

- ✓ **Technical Team (Development & IT):** Responsible for maintaining, updating, and securing the Rushita platform and continuously developing the AI model. This includes developing new features, ensuring platform stability, and implementing security protocols.
- ✓ **Marketing Team:** Responsible for designing and executing the marketing strategy to raise awareness and attract users. This includes digital advertising, content creation, social media management, public relations, and event participation.
- ✓ **Sales Team:** Responsible for direct outreach to clinics, hospitals, and pharmacies, demonstrating the platform, negotiating contracts, onboarding new clients, and managing client relationships to drive adoption.
- ✓ **Customer Support Team:** Responsible for assisting users, answering inquiries, troubleshooting technical issues, providing training materials, and gathering user feedback to improve the platform.
- ✓ **Administrative Team:** Responsible for managing finances, accounting, human resources tasks, procurement, and other essential administrative functions to ensure smooth operations.

3. Key partners

- ✓ **ASF (Algerian Startup Fund):** Our primary partner, whose critical funding enables us to bring Rushita to life and accelerate its market launch.
- ✓ **SATIM (Société d'Automatisation des Transactions Interbancaires et de Monétique):** Provide a secure online payment system for our subscription plans payment process through their API. [5]
- ✓ **University Business Incubator:** Will be a crucial partner providing mentorship, resources, networking, and strategic support essential for our startup's growth and development.
- ✓ **CNAS (Chifa-2 System):** A critical technical partnership required for seamless integration, enabling prescriptions to be processed within the national social security system.

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Fifth axis: The financial plan

1. Costs and charges

Item	Description	Total Cost
Infrastructure & Hosting	Cloud servers, domain, SSL certificate, annual support	150 000 da
Market Research	Advanced market study	40 000 da
UX/UI Design	Improving the user interface	
Front-End Development	HTML/CSS/JavaScript implementation with the React framework	
Back-End Development	API development, database design, server setup	
Mobile App Development	With (React Native)	
Training AI model	Model training, API integration	
Security & Encryption Audit	External security audit and encryption implementation	

Table 5 The platform costs

By leveraging the founding team's background in AI, cybersecurity, and software engineering, we can significantly reduce the platform's implementation costs and make it almost only represented in infrastructure and hosting

Total platform's implementation costs = 190,000

Item	Amount
Establishment fees	100,000 da
Notary and lawyer fees	60,000 da
Meter opening fees (water-gas-...)	
Office equipment	300,000 da
Various supplies	

Table 6 Launch costs

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Item	Amount
Rental rights	260,000 da annually
Trademark and patent registration	
Insurance	20,000 da annually
Telephone, internet	55,200 da annually
Fuel, transport	200,000 da annually
Travel and accommodation expenses	200,000 da annually
Water, electricity and gas	12,000 da annually
Marketing budget	1,000,000 da annually
Initial cash reserve	1,000,000
Total	2,747,200 DZD

Table 7 Annually costs

As the founders of startup Rushita, we don't plan to hire full-time employees, but we do plan to outsource tasks when needed, for better performance and lower costs.

Employees' salaries	Per year
Net executive remuneration	1620,000 da annually

Table 8 Employee and manager salaries

This project will be fully financed through venture capital from ASF in the amount of:

Source	Amount (DZD)
Personal Contribution	0 DZD
ASF (Algerian Startup Fund)	5,000,000 DZD
Total	5,000,000 DZD

Table 9 Source of funding

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Before calculating the turnover, we first explain how we calculated the unit costs and the selling price:

- Direct Costs:
 - Travel, accommodation, and transportation: 400,000 DZD annually
 - Internet and phone: 55,200 DZD annually
 - Utility bills (water, gas, electricity): 12,000 DZD annually
 - Insurance: 20,000 DZD annually
- Indirect Costs:
 - Marketing and administrative expenses: 1000,000 DZD annually
 - Rent: 260,000 DZD annually
 - Management remuneration: 1,620,000 DZD annually

We will calculate the unit cost assuming we got 175 clients in the first year:

Direct costs: Travel, accommodation, and transport + Internet and telephone + Water, gas, and electricity bills + Insurance + hosting

Direct costs= 400,000+ 55,200 + 12,000+ 20,000 + 150,000 = 637,200 da

Indirect costs = Marketing & administrative expenses + Rent + management remuneration

Indirect costs = 1000,000 + 260,000 + 1,620,000 = 2,880,000 da

Direct customer acquisition costs: direct costs/number of customers

$637,200 / 175 = 3,642$ da

Indirect customer acquisition costs: indirect costs/number of customers

$2,880,000 / 175 = 16,457$ da

Total unit costs = 3,642 + 16,457= 20,099

Margin (10%): $20,099 \times 0.10 = 2,009.9$

Selling price= $20,099 + 2,009.9 = 22,109$

Final selling price = 23,000da

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2. Sales figures

To calculate the size of our potential business, we start by determining the size of our target market in the first year of doctors in Algeria, with an initial focus on the private sector. Reports reveal significant growth in the number of health practitioners year on year; in the private sector, the total number of practitioners (including specialists and general practitioners) increased from 43,990 in 2019 to 49,477 in 2022. [6]

This represents an increase of 5,487 practitioners in three years, reflecting a compound annual growth rate (CAGR) of approximately 3.99%. Using this rate as an estimate of future growth, we can expect the number of practitioners in the private sector to reach around 55,600 by 2025 (accounting for three additional years of growth from the end of 2022).

In the first phase, we will focus our efforts on this private market, temporarily excluding the public sector until the platform proves its worth and gains the necessary confidence to enter the public market later.

Assuming that only 1% of these private practitioners will subscribe to the platform in the first year, we assume 550 potential subscribers in the first year.

Assuming a 5% increase each year, we obtain the following sales figures for the optimistic, pessimistic, and average cases:

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	REALIZATION			PREVISION				
Customer product	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Number of software sales			550					
Price incl. VAT			23.000 da					
Sales figures for software			12,650,000 da	13,282,500 da	13,946,625 da	14,643,956 da	15,376,154 da	16,144,962 da
Number of basic Clients			350					
Price incl. VAT			2500 da					
Sales of basic subscription			9,625,000 da	16,843,750 da	22,402,188 da	26,823,672 da	30,475,818 da	33,617,283 da
Number of standard Clients			150					
Price incl. VAT			3500 da					
Sales of the standard subscription			5,775,000 da	10,106,250 da	13,441,313 da	16,094,203 da	18,285,491 da	20,170,370 da
Number of premium Clients			50					
Price incl. VAT			4500 da					
Sales of premium subscription			2,475,000 da	4,331,250 da	5,760,563 da	6,897,516 da	7,836,639 da	8,644,444 da
GLOBAL SALES			30,525,000 da	44,563,750 da	55,550,688 da	64,459,347 da	71,974,102 da	78,577,058 da

Table 10 Optimistic sales figures

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	REALIZATION			PREVISION				
Customer product	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Number of software sales			100					
Price incl. VAT			23.000 da					
Sales figures for software			2,300,000 da	2,415,000 da	2,535,750 da	2,662,538 da	2,795,664 da	2,935,448 da
Number of basic Clients			60					
Price incl. VAT			2500 da					
Sales of basic subscription			1,650,000 da	2,887,500 da	3,840,375 da	4,598,344 da	5,224,426 da	5,762,963 da
Number of standard Clients			25					
Price incl. VAT			3500 da					
Sales of the standard subscription			962,500 da	1,684,375 da	2,240,219 da	2,682,367 da	3,047,582 da	3,361,728 da
Number of premium Clients			15					
Price incl. VAT			4500 da					
Sales of premium subscription			742,500 da	1,299,375 da	1,728,169 da	2,069,255 da	2,350,992 da	2,593,333 da
GLOBAL SALES			5,655,000 da	8,286,250 da	10,344,513 da	12,012,503 da	13,418,664 da	14,653,472 da

Table 11 Pessimistic sales figures

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To calculate the balance sheet, income statement, and cash flow, we will first calculate the average sales between the optimist and the pessimist:

	REALIZATION			PREVISION				
Customer product	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Optimistic sales figures			30,525,000 da	44,563,750 da	55,550,688 da	64,459,347 da	71,974,102 da	78,577,058 da
pessimistic sales figures			5,655,000 da	8,286,250 da	10,344,513 da	12,012,503 da	13,418,664 da	14,653,472 da
Average sales figures			18,090,000 da	26,425,000 da	32,947,601 da	38,235,925 da	42,696,383 da	46,615,265 da

Table 12 Average sales figures

3. Balance sheet

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ASSETS								
	REALIZATION			PREVISION				
In DZD	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Intangible fixed assets								
Tangible fixed assets			300,000 da	300,000 da	300,000 da	300,000 da	300,000 da	300,000 da
Land								
Building								
Amortization			60,000	120,000	180,000	240,000	300,000	
Other Tangible Assets								
Concession assets								
Assets under construction								
Financial Assets								
Equity method investments								
Other equity interests and related receivables								

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Other non-current securities								
Loans and other non-current financial assets								
Deferred tax assets								
NON-CURRENT ASSETS			240,000	180,000	120,000	60,000	0	
Inventories and work in progress								
Receivables and similar assets								
Customers								
Other debtors								
Taxes and similar items								
Other receivables and similar assets								
Cash and cash equivalents								
Investments and other current financial assets								
Cash			18,090,000 da	26,425,000 da	32,947,601 da	38,235,925 da	42,696,383 da	46,615,265 da
CURRENT ASSETS			18,090,000 da	26,425,000 da	32,947,601 da	38,235,925 da	42,696,383 da	46,615,265 da
TOTAL ASSETS			18,330,000 da	27,305,000 da	33,067,601 da	38,295,925 da	42,696,383 da	46,615,265 da

Rushita Secure e-prescription platform powered by AI

LIABILITIES								
	REALIZATION			PREVISION				
In DZD	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
SHAREHOLDERS' EQUITY								
Issued capital			5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Uncalled capital								
Revaluation surplus								
Share premiums & consolidated reserves								
Net income - Group share								
Other equity – Retained earnings								
Net profit			13,330,000 da	22,305,000 da	28,067,601 da	33,295,925 da	37,696,383 da	41,615,265 da
TOTAL EQUITY			18,330,000 da	27,305,000 da	33,067,601 da	38,295,925 da	42,696,383 da	46,615,265 da
NON-CURRENT LIABILITIES								
Loans and financial borrowings								

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Deferred tax liabilities								
Other non-current liabilities								
Provisions & deferred income								
TOTAL NON-CURRENT LIABILITIES								
CURRENT LIABILITIES								
Trade payables & related accounts								
Taxes								
Other payables								
Cash liabilities								
TOTAL CURRENT LIABILITIES								
TOTAL LIABILITIES			18,330,000 da	27,305,000 da	33,067,601 da	38,295,925 da	42,696,383 da	46,615,265 da
Balance Check Assets /Liabilities			0	0	0	0	0	0

Table 13 Balance sheet table

Rushita Secure e-prescription platform powered by AI

4. Provisional income statements

	REALIZATION			PREVISION				
IN DZD	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Sales and other operating revenue			18,090,000 da	26,425,000 da	32,947,601 da	38,235,925 da	42,696,383 da	46,615,265 da
Change in finished goods & work-in-progress								
Own-account production								
Operating grants								
Production for the year			18,090,000 da	26,425,000 da	32,947,601 da	38,235,925 da	42,696,383 da	46,615,265 da
Purchases consumed								
External services & other consumption			1,087,200 da	1,195,920 da	1,315,512 da	1,447,063 da	1,591,770 da	1,750,946 da
Consumption for the year			1,087,200 da	1,195,920 da	1,315,512 da	1,447,063 da	1,591,770 da	1,750,946 da
Gross value added			17,002,800 da	25,229,080 da	31,632,089 da	36,788,862 da	41,104,613 da	44,864,319 da
Personnel expenses			1,620,000 da	1,782,000 da	1,960,200 da	2,156,220 da	2,371,842 da	2,609,026 da

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Taxes and similar levies								
Gross operating surplus			15,382,800 da	23,447,080 da	29,671,889 da	34,632,642 da	38,732,771 da	42,255,293 da
Other operating income								
Other operating expenses								
Depreciation & provisions			60,000 da	120,000 da	180,000 da	240,000 da	300,000 da	
Reversals of write-downs & provisions								
Operating result (EBIT)			15,322,800 da	23,327,080 da	29,491,889 da	34,392,642 da	38,432,771 da	42,255,293 da
Financial income								
Financial expenses								
Financial result								
Ordinary profit before tax			15,322,800 da	23,327,080 da	29,491,889 da	34,392,642 da	38,432,771 da	42,255,293 da
Current tax on ordinary profit								
Deferred tax on ordinary profit								
Total ordinary operating income								

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Total ordinary operating expenses								
Net ordinary result			15,322,800 da	23,327,080 da	29,491,889 da	34,392,642 da	38,432,771 da	42,255,293 da
Extraordinary income								
Extraordinary expenses								
Extraordinary result			15,322,800 da	23,327,080 da	29,491,889 da	34,392,642 da	38,432,771 da	42,255,293 da
Net profit for the year			15,322,800 da	23,327,080 da	29,491,889 da	34,392,642 da	38,432,771 da	42,255,293 da

Table 14. Provisional income statements table

5. Cash flow

	REALIZATION			PREVISION				
RUBRIQUES	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Cash flows from operating activities								
Net income for the year			15,322,800	23,327,080	29,491,889	34,392,642	38,432,771	42,255,293

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Adjustments for:								
– Depreciation and provisions			60,000	120,000	180,000	240,000	300,000	0
– Change in deferred taxes								
– Change in inventories								
– Change in receivables and other current assets								
– Change in suppliers and other payables								
– Gains or losses on disposal, net of tax								
Cash flows generated from operations (A)			15,322,800	23,327,080	29,491,889	34,392,642	38,432,771	42,255,293
Cash flows from investing activities			5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Disbursements for acquisition of fixed assets								
Proceeds from sale of fixed assets								
Impact of changes in scope of consolidation (1)								
Cash flows related to investing operations (B)								
Cash flows from financing operations								

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Dividends paid to shareholders								
Capital increase / ASF share								
Capital increase / Startup share								
Associate current account injection – ASF								
Repayment of ASF capital (at nominal value)								
Repayment of associate current account								
Cash flows related to financing operations (C)								
Cash variation for the period (A + B + C)								
Opening cash (Beginning of the period)			15,322,800	23,327,080	29,491,889	34,392,642	38,432,771	42,255,293
Closing cash (End of the period)			15,322,800	23,327,080	29,491,889	34,392,642	38,432,771	42,255,293
Cash variation			0	0	0	0	0	0

Table 15 Cash flow table

Sixth axis: The prototype

1. Frontend Technologies

The user interface layer is designed for responsiveness and consistency across different platforms, leveraging the React ecosystem extensively.

✓ **React (Web Application)**

React serves as the fundamental library for constructing the web application's user interface. Its component-based architecture is highly suitable for building complex interfaces like a clinic management dashboard, promoting code reuse and maintainability. As a Single Page Application (SPA) framework, it provides a fluid user experience, essential for interactive tasks like prescription creation, by efficiently updating the UI without full page reloads via its virtual DOM.

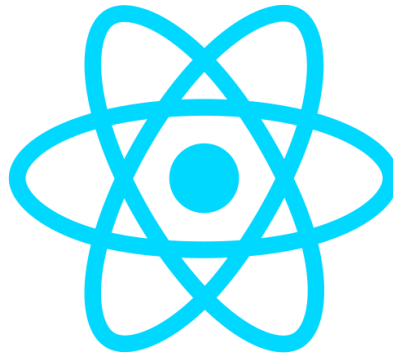


Figure 2 React logo

✓ **Tailwind CSS (Styling)**

For styling the application, Tailwind CSS is utilized. This utility-first framework allows for rapid development of custom designs directly within the HTML structure. It helps maintain visual consistency across components and reduces the need for extensive custom CSS files, streamlining the styling process.



Figure 3 Tailwind CSS logo

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✓ React Native (Mobile Application)

To deliver native mobile applications for both iOS and Android, React Native is employed. This framework was a strategic choice as it allows the development team to leverage their existing React knowledge and potentially reuse significant portions of the web application's logic and components. This approach accelerates mobile development while still providing access to native device features and performance.

✓ Electron.js (Desktop Application)

Electron.js enables the creation of cross-platform desktop applications using familiar web technologies. The existing React web application codebase forms the foundation for the desktop version, allowing for deployment on Windows, macOS, and Linux. This provides users with an installable application option that can potentially offer offline capabilities or deeper integration with the host operating system.

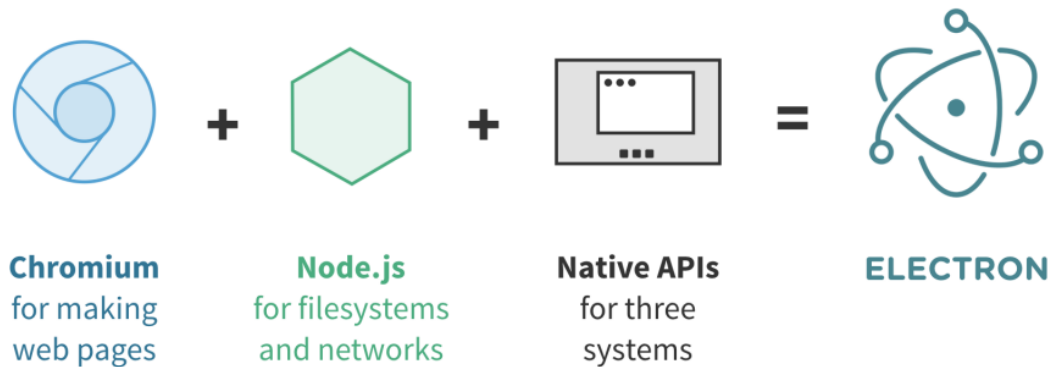


Figure 4 Electron.js Architecture Diagram

2. Backend Technologies

The backend is built using Python and the Django framework, providing the necessary business logic, API endpoints, and data management capabilities.

✓ Django (Core Framework)

Django provides the high-level structure for the backend server. As a "batteries-included" framework, it offers many built-in components crucial for this application, such as security features, an administrative interface, and a robust request-handling cycle. Its maturity and scalability make it well-suited for handling sensitive medical data and complex clinic workflows.



Figure 5 Django logo

✓ **Django REST Framework (RestfulAPI)**

To facilitate communication between the frontend clients (Web, Mobile, Desktop) and the backend, Django REST Framework (DRF) is used. DRF significantly simplifies the creation of secure and browsable RESTful APIs, handling tasks like data serialization (converting database objects to JSON), request validation, and API endpoint definition.

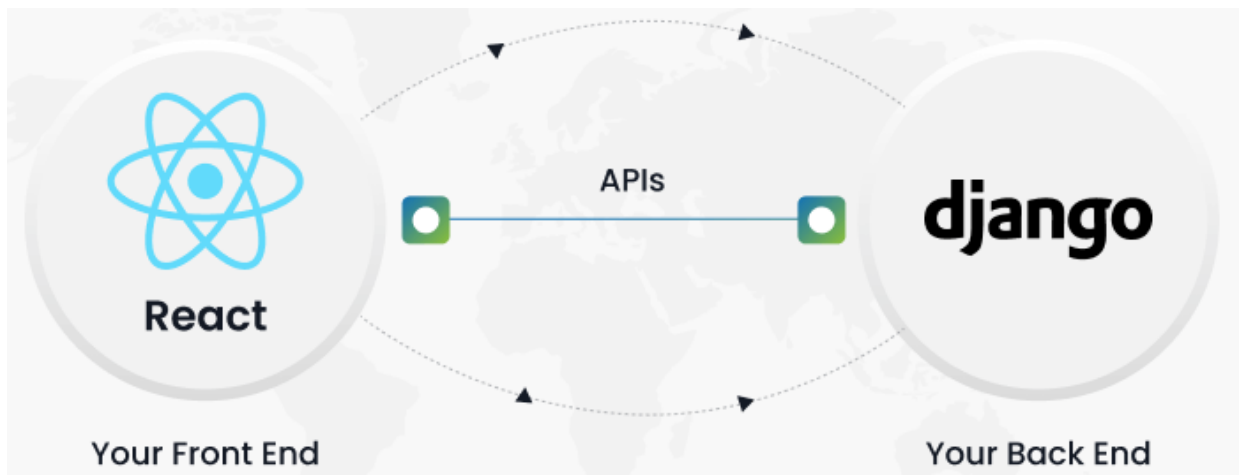


Figure 6 Rushita Client-Server Architecture.

✓ **Authentication, Authorization, and CORS Middleware**

Essential security and communication mechanisms are integrated within Django. This includes robust **Authentication** to verify user identities (doctors, staff), potentially using token-based methods like JWT suitable for SPAs and APIs. **Authorization** controls access, ensuring users can only perform actions permitted by their roles (e.g., only doctors create prescriptions). **CORS Middleware** (like django-cors-headers) is configured to securely allow the frontend applications, running on different origins, to make requests to the backend API.

✓ **Django ORM (Object-Relational Mapper)**

Interaction with the database is managed through Django's built-in ORM. This allows developers to work with database tables using Python objects (Models) instead of writing raw SQL queries. This abstraction improves developer productivity, enhances security by reducing the risk of SQL injection, and simplifies database schema migrations.

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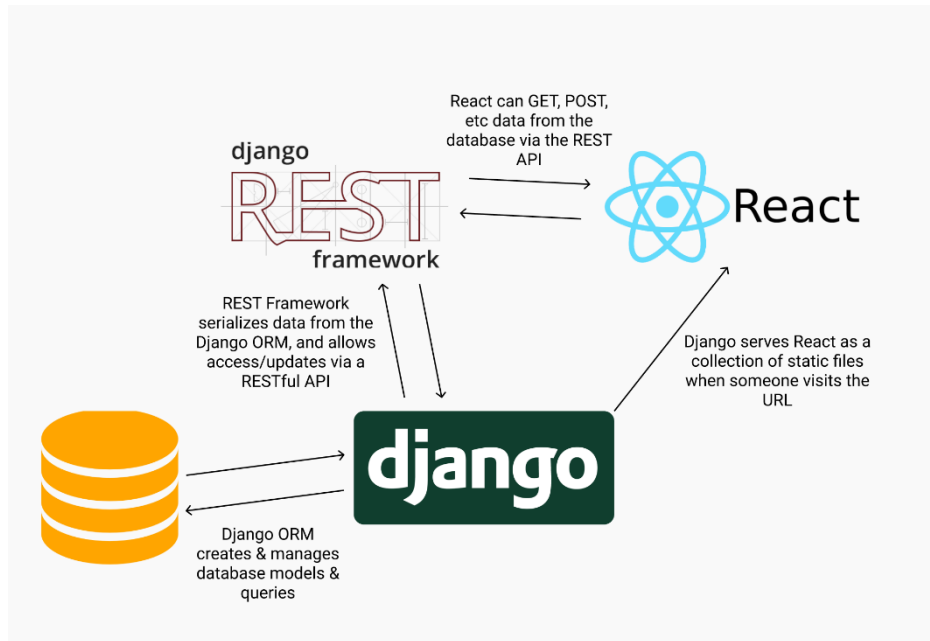


Figure 7 Rushita DATA flow diagram

3. Database

Persistent storage for all application data is handled by PostgreSQL.

✓ PostgreSQL

was selected as the primary relational database management system (RDBMS). It is renowned for its reliability, data integrity features, and robust performance, making it suitable for storing sensitive patient and prescription information.

Key Advantages of PostgreSQL: Its strengths include strict ACID compliance for reliable transactions, support for advanced data types and indexing, efficient handling of concurrent users (MVCC), and strong extensibility.

4. Encryption and Security

Protecting sensitive medical data is a top priority, addressed through multiple layers of encryption and security protocols.

✓ SSL/TLS (Secure Sockets Layer/Transport Layer Security)

All communication between client applications and the backend server is encrypted using SSL/TLS (HTTPS). This ensures that data transmitted over the network, such as login credentials or patient details, is protected from eavesdropping and tampering.

✓ AES (Advanced Encryption Standard)

For encrypting sensitive data *at rest* within the database (e.g., specific patient identifier fields) or potentially stored documents, the AES symmetric encryption algorithm is used. This adds a crucial layer of protection should the underlying storage be compromised. Effective key management practices are essential for this implementation.

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✓ EdDSA (Edwards-curve Digital Signature Algorithm)

EdDSA is employed for digitally signing critical internal data payloads, API keys, or authentication tokens. This ensures data integrity (proving it hasn't been altered) and authenticity (proving it came from the expected source). EdDSA is chosen for its strong security guarantees and performance characteristics in these scenarios.

✓ RSA (Rivest–Shamir–Adleman)

Specifically, for digitally signing the generated PDF prescription documents, the RSA algorithm is utilized. RSA is a widely supported standard for PDF digital signatures, ensuring compatibility with common PDF viewers and providing legal non-repudiation for the prescriptions issued through the system.

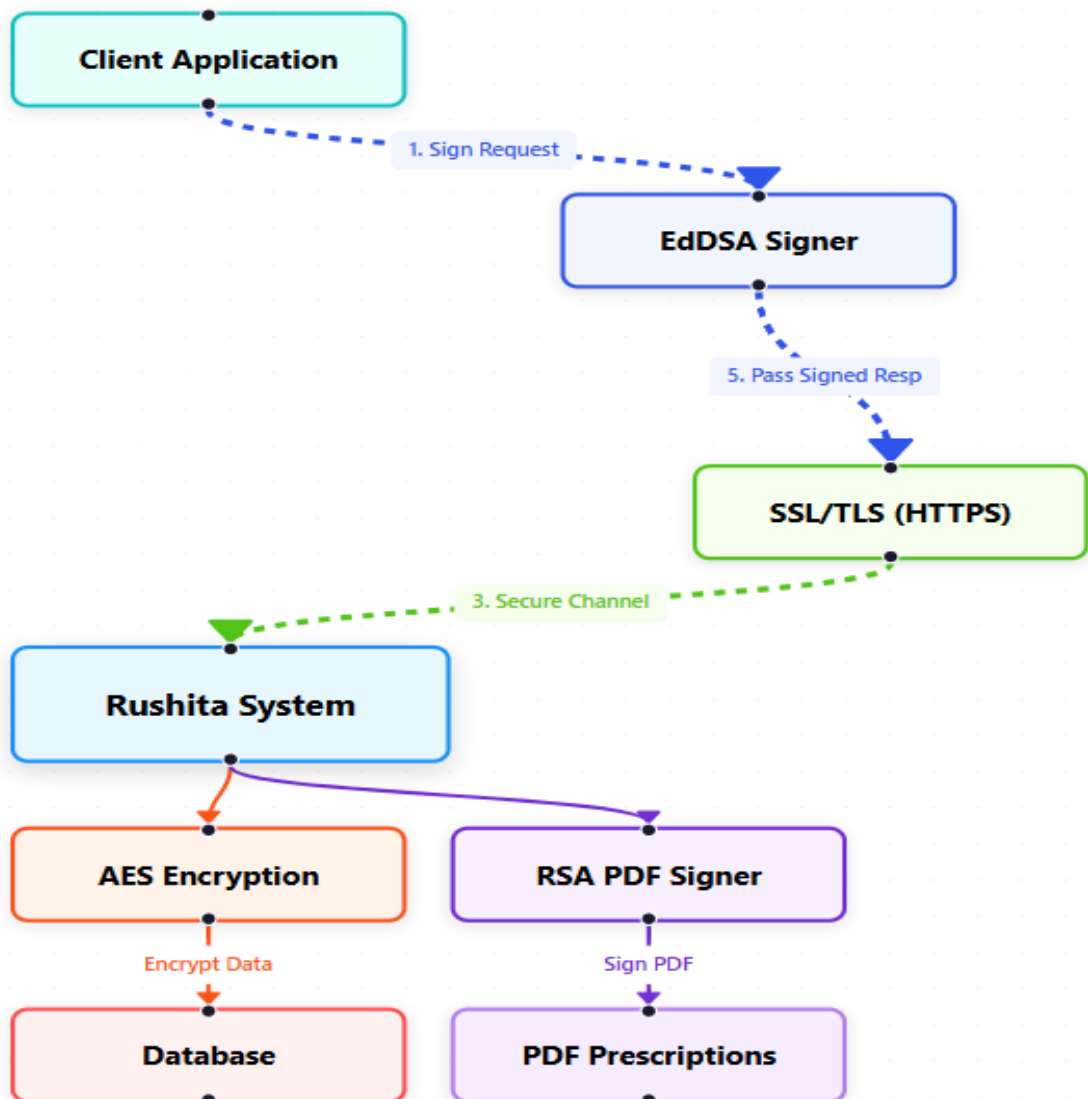


Figure 8 Rushita Security Architecture.

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5. Artificial Intelligence (AI) Integration

Beyond the core functionalities, the system incorporates Artificial Intelligence models to enhance clinical decision support, improve patient safety, and streamline the prescription process. These AI components act as intelligent assistants to the healthcare professionals using the application.

➤ **Importance of AI in Healthcare (Prescription Context):**

Artificial Intelligence offers significant potential within healthcare, particularly in the realm of digital prescriptions. It can analyze vast amounts of data far quicker than humans, identifying patterns, potential risks, and insights that support clinical decision-making. For this project, AI focuses on enhancing prescription safety and efficacy by providing real-time checks and alerts based on patient data and pharmacological knowledge.

➤ **AI Models Employed:**

Specific machine learning models have been developed or integrated to provide targeted decision support during the prescription workflow:

➤ **Drug Interaction Model:**

This model analyzes a patient's current medication list (including the newly proposed prescription) against a comprehensive database of known drug interactions. It flags potential adverse interactions, ranging from minor side effects to severe contraindications, providing alerts directly within the prescription interface. This helps doctors avoid potentially harmful drug combinations.

➤ **Drug Overdose / Dosage Check Model:**

This model assesses the prescribed dosage of a medication against the patient's profile and established dosing guidelines. It identifies potential overdoses or suboptimal dosages, alerting the prescribing physician to review the amount before finalizing the prescription. This serves as a critical safety check, especially for potent medications or vulnerable patient populations.

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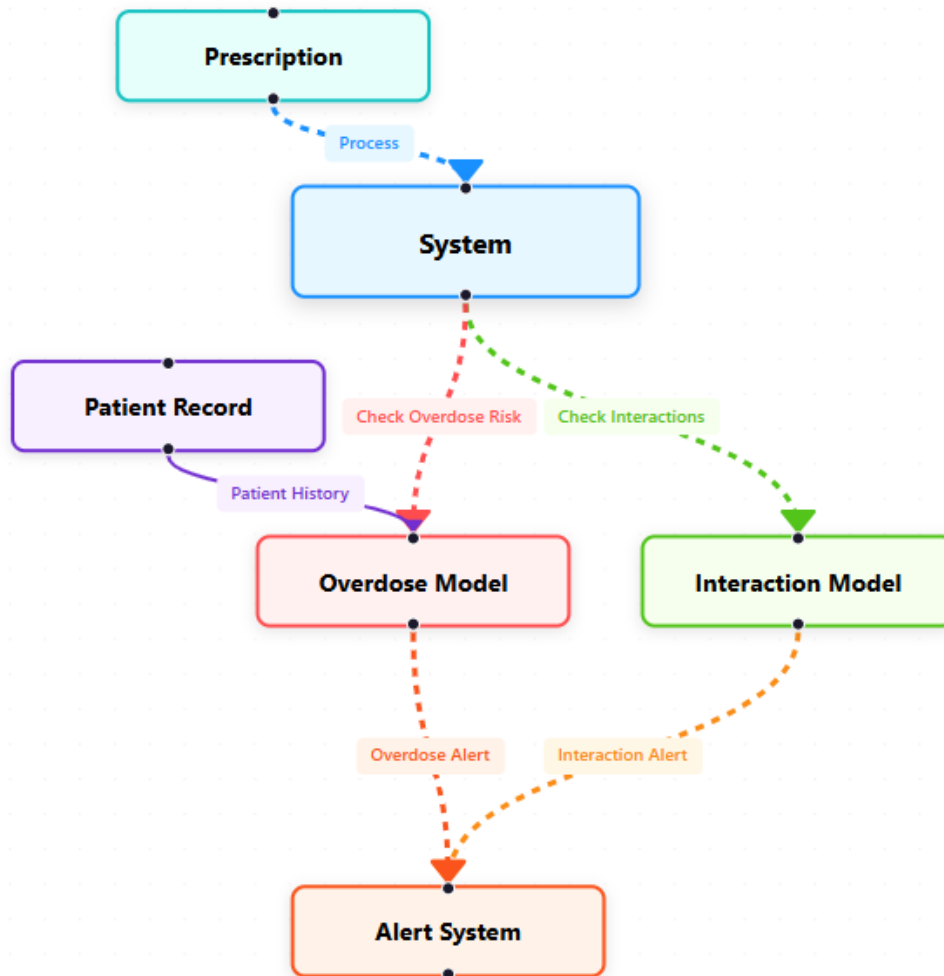


Figure 9 Rushita AI Decision Support Workflow.

6. Future Enhancements

To further increase the value and utility of the Digital Prescription and Clinic Management System, several key enhancements are planned for future development phases. These additions focus on improving communication, expanding patient care capabilities, and leveraging AI for more advanced predictive insights.

Communication and Patient Follow-up Features

➤ Integrated Pharmacist-Doctor Chat:

A secure, real-time chat feature will be added to facilitate direct communication between prescribing doctors and pharmacists. This will allow for quick clarification on prescriptions, discussion of potential substitutions, or addressing any queries related to dispensing, streamlining the workflow and reducing potential errors.

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➤ **Secure Doctor-to-Doctor Consultation:**

A dedicated chat or messaging system will enable doctors within the same clinic or network to consult with each other securely. This feature supports collaborative care, allowing physicians to easily seek second opinions, share relevant (anonymized where appropriate) case details, or coordinate patient management strategies.

➤ **Remote Patient Follow-up System:**

This module will allow doctors to monitor patient progress remotely after a prescription has been issued. It could include features like scheduled check-in prompts for patients, secure messaging for reporting side effects or progress, and potentially integration with wearable devices for data collection (subject to patient consent and data privacy regulations). This enhances continuity of care beyond the clinic visit.

Artificial Intelligence Advancements

Building upon the initial AI integration, future plans involve developing more sophisticated predictive models:

➤ **Treatment Prediction Model:**

This advanced AI model will analyze historical sequences of prescriptions given to patients with similar conditions. By identifying successful treatment pathways (sequences of medications that led to positive outcomes), the model could suggest potentially effective next-step treatments for new patients, assisting doctors in optimizing therapeutic strategies.

➤ **Malignant Disease Prediction Model:**

Leveraging longitudinal prescription data, this model aims to identify subtle patterns in medication usage over time that might correlate with an elevated risk of developing certain malignant diseases *before* a formal diagnosis. Early warnings based on these predictive patterns could prompt physicians to recommend targeted screening or further investigation for at-risk patients.

➤ **Epidemic Prediction Model (Based on Anomaly Detection):**

By analyzing aggregated, anonymized prescription data across a region or population served by the system, this AI model will look for unusual spikes or patterns in prescriptions for specific types of medications (e.g., antivirals, flu treatments, specific antibiotics). Detecting such anomalies early could provide public health insights or act as an early warning system for potential outbreaks or epidemics.

***Rushita* Secure e-prescription platform powered by AI**

General conclusion:

In conclusion, the Rushita platform represents a comprehensive and strategically planned initiative designed to address significant inefficiencies and safety concerns within Algeria's current prescription system. By integrating advanced AI capabilities, robust security measures, and user-friendly interfaces across web, mobile, and desktop applications, Rushita offers a compelling value proposition focused on enhancing patient safety, improving economic efficiency, promoting environmental sustainability, and fostering inter-institutional collaboration. The detailed analysis covering market needs, competitive landscape, technological framework, operational plan, and financial projections provides a solid foundation for its implementation and future growth. With a clear vision, a capable team, and alignment with national digital health objectives, Rushita is poised to become a cornerstone of healthcare modernization in Algeria, promising tangible benefits for patients, healthcare professionals, and the overall health system.

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Annexes

Rushita Business Model Canvas



Figure 10 Rushita Business Model Canvas

- [Dashboard](#)
- [Prescription](#)
- [Repport](#)
- [Analytics](#)
- [Rx History](#)
- [Patients](#)
- [Medications](#)
- [Appointments](#)

Welcome back Dr .KADDACHE M.A

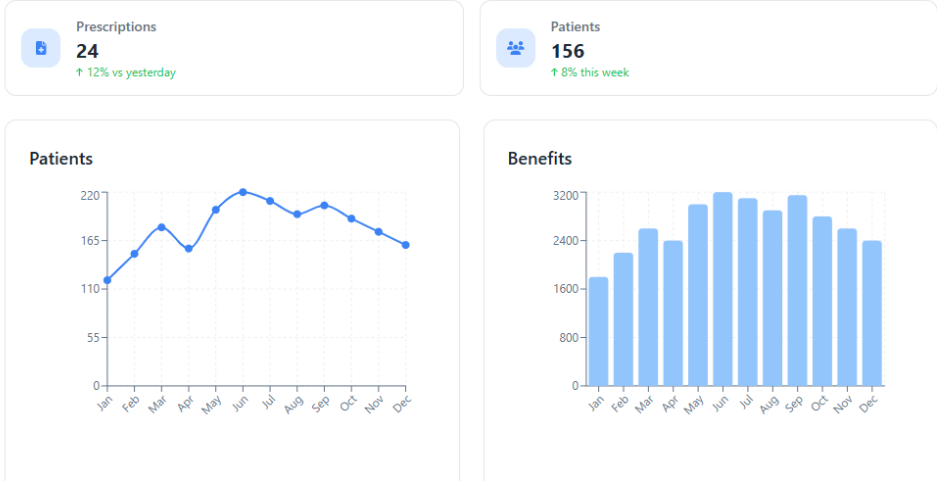


Figure 11 Rushita web version dashboard

- [Dashboard](#)
- [Prescription](#)
- [Repport](#)
- [Analytics](#)
- [Rx History](#)
- [Patients](#)
- [Medications](#)
- [Appointments](#)

Medical Appointments

Manage your patient appointments

[+ New Appointment](#)

Search by patient name or reason...

[All Appointments](#) [Today](#)

Patient	Schedule	Reason	Status	Actions
kaddache	Tue, Apr 22, 2025, 12:07 PM	test	Past	Edit Delete

Figure 12 Rushita web version appointments page

- Dashboard
- Prescription**
- Report
- Analytics
- Rx History
- Patients
- Medications
- Appointments

Dr. KADDACHE M.A

kaddache@gmail.com
+213 600 00 00 00
HBH

Patient Information

Name: **Age:**

Date: 2025-05-23

Description:

Prescription

Medicine	Duration	Frequency
<input type="text" value="AKARYD 10MG"/>	<input type="text" value="7 day"/>	<input type="text" value="X2/24h"/>
<input type="text" value="Note"/>		

Rushita

Print Send

- Dashboard
- Prescription**
- Report
- Analytics
- Rx History
- Patients
- Medications
- Appointments

Prescription

Medicine	Duration	Frequency
<input type="text" value="AKARYD 10MG"/>	<input type="text" value="23 day"/>	<input type="text" value="X2/24h"/>
<input type="text" value="test note"/>		
<input type="text" value="XYCARE 0"/>	<input type="text" value="day"/>	<input type="text" value="X3/24h"/>
<input type="text" value="after food"/>		

Send Prescription

Email :

Confirm Send

Rushita

Print Send

Figure 13 Rushita web version prescription page

- Dashboard
- Prescription
- Repport
- Analytics**
- Rx History
- Patients
- Medications
- Appointments

Hématologie

- NFS (Numération Formule Sanguine)
- Frottis sanguin
- TP - TCK (Bilan de coagulation)
- D-Dimères
- Vitesse de sédimentation
- Réticulocytes
- Groupage sanguin ABO/Rhésus
- Fibrinogène
- Electrophorèse de l'hémoglobine

Biochimie

- Glycémie à jeun
- Bilan lipidique (Cholestérol, HDL, LDL, Triglycérides)
- Calcium
- Magnésium
- Créatinine
- Bilirubine (totale, conjuguée)
- Gamma GT
- Hémoglobine glyquée (HbA1c)
- Ionogramme sanguin (Na+, K+, Cl-)
- Phosphore
- Urée
- Acide urique
- Transaminases (ASAT, ALAT)
- Phosphatase alcaline

Figure 14 Rushita web version analytics page

- Dashboard
- Prescription
- Repport
- Analytics
- Rx History**
- Patients
- Medications
- Appointments

Prescription Records [New Search](#)

Patient: Ahmed Mohamed • DOB: March 24, 1992

- April 15, 2025**
 - Amoxicillin 500mg - 1 tablet three times daily for 7 days
 - Ibuprofen 400mg - 1 tablet every 6 hours as needed for pain
- March 22, 2025**
 - Loratadine 10mg - 1 tablet daily
 - Fluticasone Nasal Spray - 1 spray in each nostril daily
- February 10, 2025**
 - Ciprofloxacin 500mg - 1 tablet twice daily for 10 days

Figure 15 Rushita web version Rx history page

- Dashboard
- Prescription
- Report
- Analytics
- Rx History
- Patients**
- Medications
- Appointments

Patient Registry

+ New Patient

ID	Last Name	First Name	Date of Birth	Address	Gender	Phone	Chronic	Actions
1	kaddache	nabil	2025-04-15	oulad el kihal	Male	06 00 00 00 00	No	

Figure 16 Rushita web version patients page

Download

< Previous Page 1 / 1 Next >

Dr. KADDACHE M.A
Cardiology
+213 600 00 00 00

ben Zerdjeb
Ain Temouchent hamam
bouhdjar
sidi aaid

Patient Information

Name: kaddache mohammed Age: 23 years

Date: 2025-04-30

Rx

DOLYC 500MG

Duration: 27 jour Frequency: 1X

apres

Dr. KADDACHE

Prescription Information

Document ID
prescription_rx_20250430_090521

Date Issued
April 30, 2025

Status
Active

Figure 17 A prescription sent via Rushita

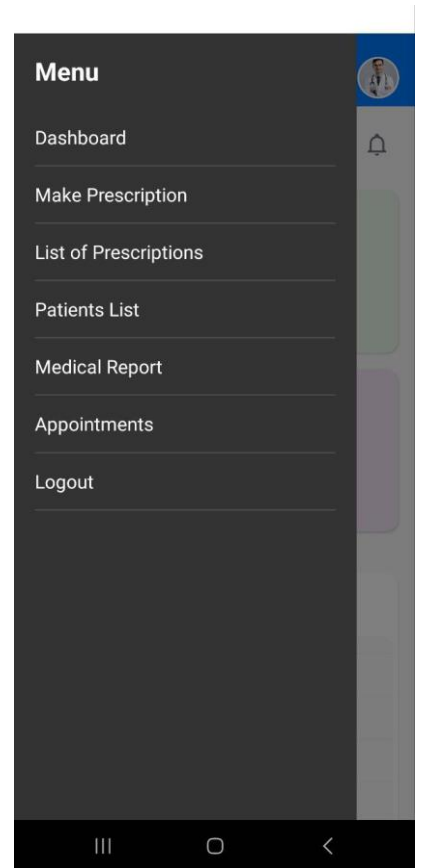
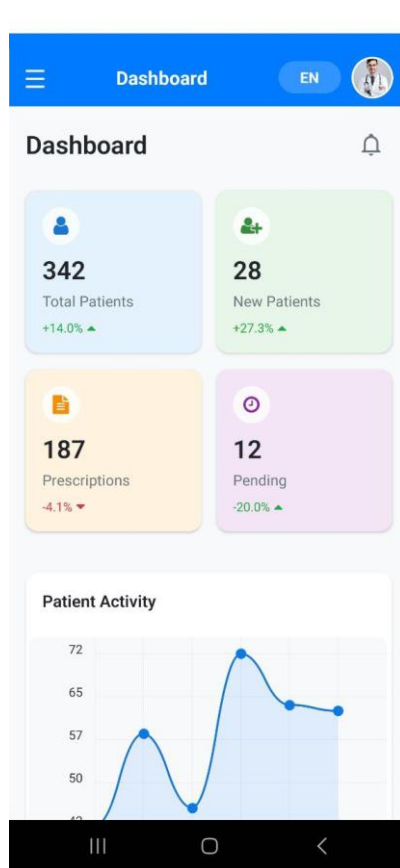
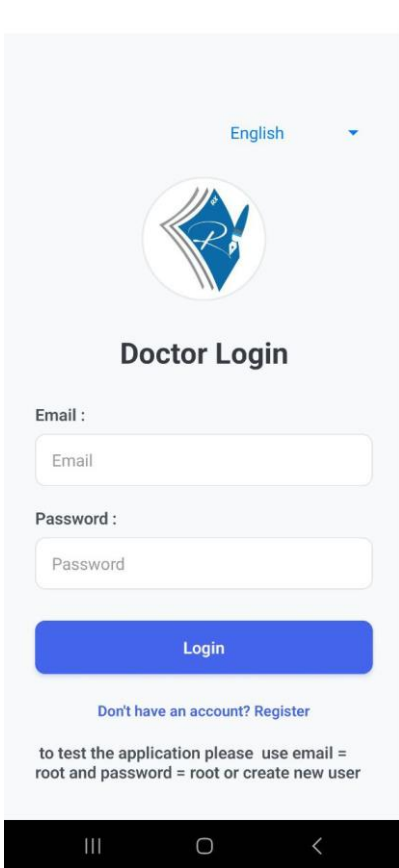
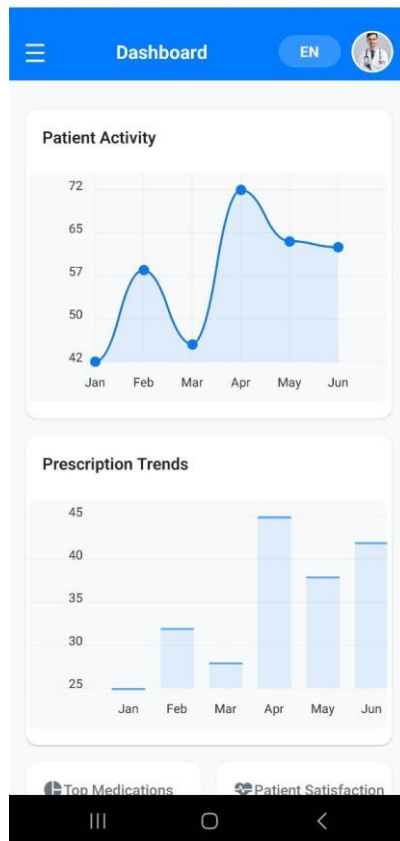



Figure 18 Rushita mobile version

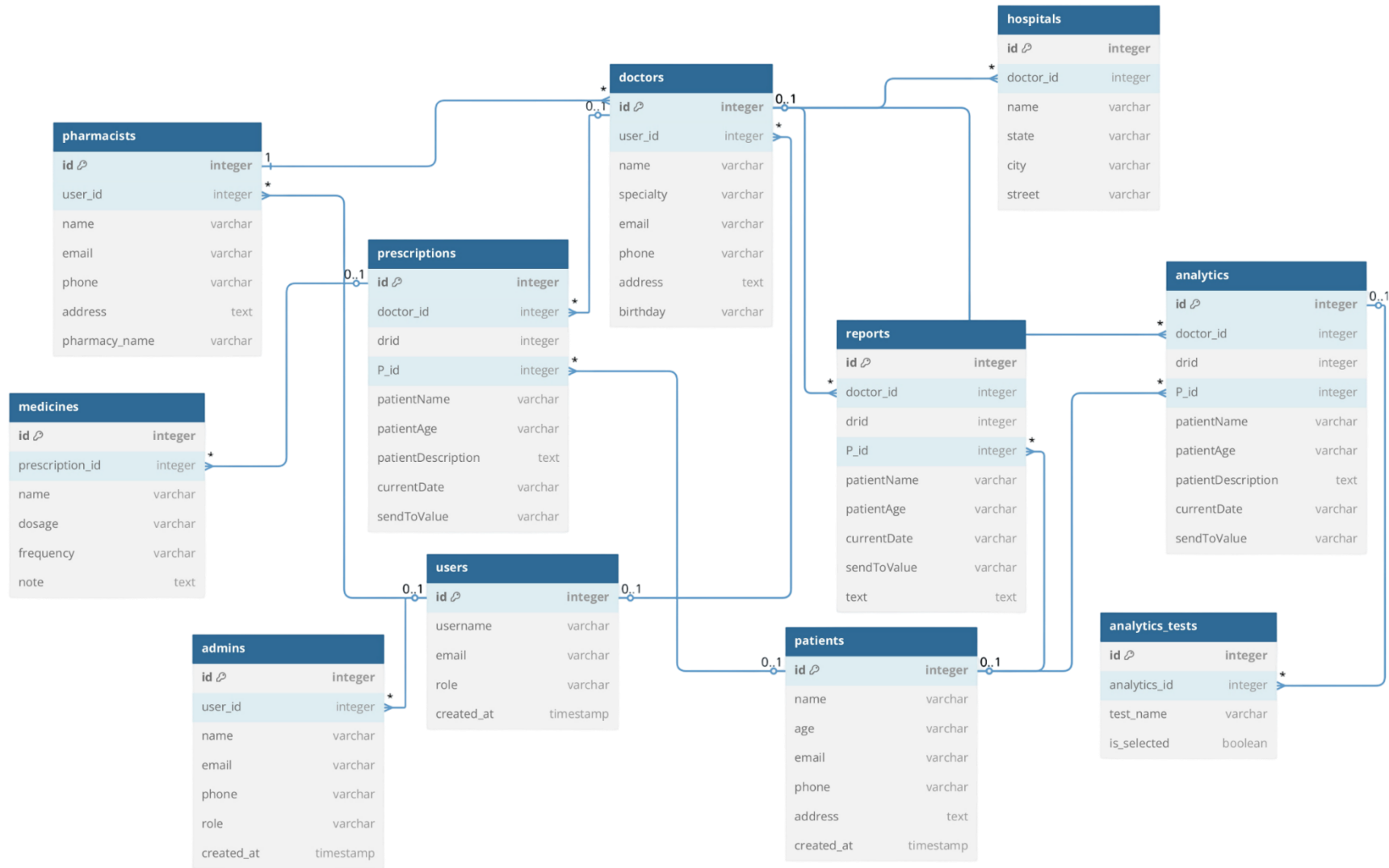


Figure 19 Rushita database structure

Abstract

The objective of this study was to design and evaluate the potential of "Rushita," a secure, AI-powered e-prescription platform, to address critical patient safety and efficiency issues within the Algerian healthcare system. Handwritten prescriptions in Algeria frequently lead to errors due to illegibility, posing risks such as incorrect dosages, drug interactions, and allergic reactions, while reliance on paper systems creates inefficiencies and costs. Rushita offers a unique value proposition by providing a fully digital, secure platform that leverages Artificial Intelligence to offer real-time decision support to clinicians, including alerts for interactions and allergies, and access to unified patient histories. The study was conducted across six distinct axes: project presentation, innovative aspects, strategic market analysis, organizational plan, financial viability, and prototype development. Rushita, as Algeria's potential first dedicated e-prescription platform, can significantly reduce medication errors, enhance diagnostic accuracy, improve inter-institutional collaboration, and promote economic and environmental sustainability. In conclusion, Rushita presents a robust and innovative solution aligned with national digital health goals, poised to enhance patient safety, optimize healthcare delivery, and contribute significantly to the modernization of Algeria's healthcare sector.

Keywords: E-prescription, Artificial Intelligence (AI), Patient Safety, Healthcare Digitization, Clinical Decision Support, Algeria, Health Informatics.

المخلص

هدف هذه الدراسة هو تصميم وتقييم منصة «Rushita»، وهي منصة للوصفات الطبية الإلكترونية آمنة وتعتمد على الذكاء الاصطناعي (IA)، من أجل الاستجابة للتحديات الحرجة المتعلقة بأمان المرضى وكفاءة النظام الصحي في الجزائر. ففي الجزائر، تؤدي الوصفات الطبية الورقية غالبًا إلى أخطاء ناجمة عن صعوبة قراءتها، مما يشكل مخاطر كبيرة مثل الجرعات غير الصحيحة، والتفاعلات الدوائية الخطيرة، وردود الفعل التحسسية. وفي الوقت ذاته، يساهم الاعتماد على الأنظمة الورقية في خلق عدم كفاءة وتكاليف مرتفعة. تقدم منصة روشيتا قيمة مضافة فريدة من نوعها من خلال توفير منصة رقمية وآمنة بالكامل، تستغل الذكاء الاصطناعي لتقديم دعم آني لاتخاذ القرار السريري، بما في ذلك التنبيهات المتعلقة بالتفاعلات والتحسسات الدوائية، بالإضافة إلى الوصول إلى السجلات الطبية الموحدة للمرضى. وقد أجريت الدراسة وفق ستة محاور رئيسية: عرض المشروع، الجوانب الابتكارية، التحليل الاستراتيجي للسوق، الخطة التنظيمية، الجدوى المالية، وتطوير النموذج الأولي. منصة روشيتا بصفتها أول منصة محتملة مخصصة للوصفات الطبية الإلكترونية في الجزائر، قادرة على تقليص أخطاء صرف الأدوية بشكل ملحوظ، وتحسين دقة التشخيص، وتعزيز التعاون بين المؤسسات الصحية، ودعم الاستدامة الاقتصادية والبيئية. وختامًا، تمثل منصة روشيتا حلاً مبتكرًا وقويًا، يتماشى مع الأهداف الوطنية للتحويل الرقمي في قطاع الصحة، وجاهزًا لتعزيز سلامة المرضى، وتحسين جودة الرعاية الصحية، والمساهمة الفعالة في تحديث النظام الصحي في الجزائر.

الكلمات المفتاحية:

الوصفة الطبية الإلكترونية، الذكاء الاصطناعي، سلامة المرضى، رقمنة الرعاية الصحية، دعم القرار السريري، الجزائر، المعلوماتية الصحية.