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Specialization: **Cyber security and Artificial Intelligence**

**Autonomous AI-Powered App for
Blind Users "URE"**

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Dedication

This work is dedicated to all blind and visually impaired individuals who bravely navigate the world with strength and dignity.

To our families, whose unwavering support has been our foundation, and to the quiet voices that inspired us to build a project rooted in hope and inclusion.

May this humble effort serve as a step toward a more accessible, compassionate, and inclusive society.

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1. Introduction

The advancement of artificial intelligence and mobile technologies has profoundly transformed the way individuals with visual impairments interact with their environment. As digital tools become increasingly integrated into daily life, innovative solutions are emerging to help reduce barriers and promote inclusion. The rapid growth of mobile accessibility tools has paved the way for more independence, autonomy, and social participation for blind and visually impaired users.

Technological accessibility is crucial for social equity in today's digital landscape. It refers to the ability of a tool or platform to be usable, efficient, and beneficial for all users, regardless of physical limitations. When well-designed, accessible technology can help people with disabilities regain control over daily tasks, improve their mobility, and foster meaningful communication.

The central question that guides our project is as follows:

To what extent can an AI-powered mobile application respond to the daily challenges of visually impaired individuals and promote their social inclusion in Algeria?

To address this question, we will explore the following research points:

- What are the specific barriers that blind users face in their daily lives?
- How can artificial intelligence be used to assist in navigation, reading, and human interaction?
- What role does offline functionality play in ensuring consistent accessibility?
- Can a localized, affordable app like URE offer real and sustainable value?

To address our research question, we propose the following hypotheses:

H1: A mobile application designed specifically for blind users can significantly enhance their autonomy and daily independence.

H2: Integrating artificial intelligence for object detection, text-to-speech, and emotion recognition improves the accessibility and quality of interaction for visually impaired individuals.

H3: Offline functionality and an Arabic-language interface tailored to local needs can increase user adoption and ensure inclusivity in the Algerian context.

This report is structured around several key axes designed to comprehensively demonstrate the relevance and impact of our project. The first axis presents in detail the foundational idea, core values, and targeted objectives of our solution. The second axis highlights the innovative aspects of the project, especially in terms of mobile technology and locally adapted artificial intelligence. The third axis provides a strategic market analysis, covering segmentation, competition, and marketing strategy. The fourth axis describes the internal organization of the project, clearly explaining how the application functions, the mobilized human resources, and key partnerships. The fifth axis outlines a rigorous financial plan, detailing anticipated costs,

revenue streams, and multi-year financial projections. Lastly, the sixth axis introduces the developed prototype, detailing the technical methodology and preliminary test results to ensure its effectiveness and reliability. Before presenting the core of our project, we will first introduce a few key concepts related to assistive technologies, artificial intelligence in accessibility, and the role of inclusive digital design in promoting social integration.

1.1. The Foundations of Assistive Technology and AI-Based Mobile Accessibility

Assistive technologies and AI¹-driven mobile applications are built on key principles that have emerged alongside the rapid evolution of information and communication technologies. These innovations aim to reduce barriers for people with disabilities, particularly those with visual impairments, by enhancing their autonomy, safety, and access to information.

Assistive technology is defined as “any item, piece of equipment, or product system... used to increase, maintain, or improve the functional capabilities of individuals with disabilities”² (Congress 1998) traditionally reliant on specialized hardware, the sector has undergone a major transformation with the integration of artificial intelligence and mobile computing.³ (Organization, Assistive technology 2024)

AI is changing the game of app development, especially in the field of accessibility. Features such as real-time object recognition, OCR⁴-based text-to-speech, and facial emotion detection, once reserved for high-end devices, are now being embedded in smartphones⁵ (Al-Muhtadi 2021). This shift allows blind and visually impaired users to benefit from intelligent support systems that operate even without internet connectivity, and in local languages.

Major tech players like Microsoft (Seeing AI)⁶ (Garage 2023) and Google (Lookout)⁷ (Inc 2023) have introduced ground-breaking tools, but they often fall short in regional adaptation highlighting the urgent need for localized, offline-capable, and culturally aware solutions in countries like Algeria. In this context, AI-powered mobile apps such as URE⁸ represent a new frontier for inclusive innovation empowering users with independence in daily activities such as navigation, communication, and reading.³ (Al-Muhtadi 2021)

1.2. Digital Visibility and Its Opportunities

With the rise of the internet and the growth of digital platforms, digital visibility has become a key factor in personal development, organizational success, and social inclusion in the era of digital transformation. Establishing a strong and accessible online presence is essential to take full advantage of the opportunities offered by digital technology, especially for underrepresented or marginalized communities.

¹Artificial intelligence

² U.S. Congress, *Assistive Technology Act*, 1998.

³ World Health Organization, “Assistive Technology,” 2023.

⁴OCR: Optical Character Recognition

⁵ Al-Muhtadi, J., et al., “Intelligent Assistive Technologies: A Systematic Review,” *Journal of Disability and Rehabilitation: Assistive Technology*, 2021.

⁶Microsoft Corporation, *Seeing AI*, 2023.

⁷ Google Inc., *Lookout App for Android*, 2023

⁸ URE : UR Eyes

In the context of assistive technologies, digital visibility does not only mean being seen but being understood, included, and reachable. For individuals with visual impairments, digital platforms can become gateways to independence, education, and engagement. Inclusive apps and accessible interfaces especially those using artificial intelligence create new opportunities for blind individuals to participate more fully in social and professional life⁹ (Organization, World report on vision 2019)¹⁰ (W3C 2018).

From the perspective of visibility, this project aims to provide visually impaired users with a voice in the digital world. By enabling object recognition, emotion detection, and text reading, the app gives users access to real-time environmental understanding, increasing their digital and social presence.

This also empowers them to share experiences, communicate more effectively, and connect with digital content just like sighted individuals.

Likewise, institutions and governments can leverage digital tools to highlight inclusive efforts, support accessible innovations, and improve public services. The presence of assistive applications on digital platforms contributes to stronger visibility for inclusive technology projects and raises awareness about accessibility needs¹¹ (UNICEF 2022)¹² (Statista, MENA smartphone penetration rate – forecast n.d.).

In summary, digital visibility plays a powerful role in empowerment and inclusion. For our project, it offers the possibility not only to serve as a tool of independence, but also to place visually impaired individuals at the heart of digital progress turning access into impact.

1.3. The Advantages of Using Digital Platforms and Social Media for Assistive Technology Projects

In today's digital environment, the use of digital platforms and social media offers numerous benefits for projects focused on assistive technologies. First, launching an application through online platforms such as app stores or dedicated websites allows developers to reach users across a wide geographic range, without the limitations of physical distribution. This enables inclusive technologies such as our AI-powered app for the visually impaired to be made available in remote or underserved regions, including areas with limited infrastructure⁸ (UNICEF 2022).

Additionally, digital distribution provides flexibility beyond traditional service hours. Users can download and access the application at any time, according to their own schedules and needs. For visually impaired individuals, this kind of on-demand access is essential for daily independence and convenience¹³ (Organization, World Report on Vision 2019).

⁹World Health Organization (2019). *World Report on Vision*.

¹⁰Web Accessibility Initiative (WAI), W3C. *Web Content Accessibility Guidelines (WCAG) 2.1*.

¹¹ UNICEF (2022). *Digital Accessibility for Inclusive Development*.

¹²Statista (n.d.). *Smartphone Penetration and Accessibility Trends in North Africa*.

¹³ World Health Organization (2019). *World Report on Vision*.

Social media platforms also play a vital role in promoting and expanding the reach of inclusive technologies. Networks like Facebook, Instagram, YouTube, and TikTok enable targeted outreach by allowing content to be tailored based on users' interests, locations, and behaviors. This improves the efficiency of awareness campaigns and ensures that the message reaches people who can benefit directly such as caregivers, disability associations, NGOs¹⁴, and educational institutions¹⁵ (Statista, Share of youth with social media addiction MENA 2023 2024).

Moreover, these platforms support real-time interaction with users. Project teams can answer questions, offer support, and receive immediate feedback from the community. This direct communication not only strengthens user trust and engagement but also helps improve the product based on real user experiences¹⁶ (Microsoft 2022). Social media also amplifies the voices of visually impaired users themselves, as they can share their stories, reviews, and testimonials publicly boosting the app's credibility and inspiring other users¹⁷ (Forum 2021).

In summary, integrating e-distribution and social media into our visibility strategy offers key advantages: global reach, flexible accessibility, targeted promotion, and direct engagement.

These tools are essential for building a strong digital presence and delivering real impact in the field of inclusive technology.

¹⁴Non-Governmental Organization

¹⁵Statista (2024). *Social Media Usage in the MENA Region*.

¹⁶Microsoft Accessibility (2022). *Designing Inclusive Technology*.

¹⁷European Disability Forum (2021). *Empowering Disabled Voices through Digital Platforms*.

First Axis: Project Presentation

2. Project Presentation

2.1. Project Idea

Visually impaired and blind individuals represent a significant portion of the population in Algeria and face major challenges in their daily activities. Their constant reliance on external assistance limits their independence and reduces their ability to participate fully in society.

In response to this need, we have developed URE, an AI-powered mobile application designed to strengthen the autonomy of visually impaired users. Leveraging artificial intelligence and the smartphone's camera, the app enables users to:

- Recognize everyday objects.
- Read text aloud in real time using OCR (optical character recognition).
- Identify human emotions through facial expression analysis.

The goal is to provide a smart, self-sufficient digital assistant that is accessible, lightweight, and directly integrated into users' smartphones, without the need for expensive external devices or constant internet access.

2.2. Core Values

Our application is founded on several key values aimed at transforming the daily lives of blind and visually impaired individuals:

- **Autonomy & Social Inclusion:**

URE empowers users to interact independently with their environment, reducing reliance on others. It helps break the isolation barrier and fosters real inclusion by enabling active participation in social, educational, and professional settings.

- **Technological Modernity:**

With embedded AI, URE allows real-time object detection, text reading, and emotion recognition capabilities that are rarely combined in a single, user-friendly tool. These innovative features respond to real, unmet needs in the current assistive tech market.

- **Simplicity & Accessibility:**

The application's interface is intuitive, fully voice-controlled, and designed in compliance with international accessibility standards (such as WCAG¹⁸ (W3C 2018)). Even users with limited technological experience can easily navigate and interact with URE.

- **Cost Efficiency:**

¹⁸ web Accessibility Initiative (WAI), W3C. Web Content Accessibility Guidelines (WCAG) 2.1.

By using open-source libraries and on-device AI processing, we significantly reduce development and operational costs. This makes the app not only high-performing but also affordable and scalable, ensuring long-term sustainability.

- **Risk Reduction & Safety:**

URE provides reliable, real-time assistance in critical everyday situations such as navigating streets, shopping, reading labels, or interpreting social cues. This dramatically reduces risks of accidents or misunderstandings linked to visual impairment.

2.3. Project Team

- **Khedidja Berrouayen** – *AI Engineer & Full-Stack Developer*

Khedidja is a computer engineer specialized in artificial intelligence. She is responsible for the development of AI models, as well as the implementation of both the back-end and front-end of the mobile application. Her skills ensure the core functionalities of the app operate smoothly and efficiently.

- **Insaf Fatiha Djelil** – *AI Engineer & Full-Stack Developer*

Also a computer engineer with a specialization in artificial intelligence, Insaf shares responsibility for the AI system coding, as well as the implementation of both the back-end and front-end of the mobile application. Her collaboration with Khedidja guarantees scalability and robustness of the application.

- **Iman Nafissa Djelil** – *Project Manager & Marketing Lead*

Iman oversees the strategic planning and execution of the project. She is responsible for managing the development timeline, coordinating team efforts, and leading the marketing strategy to ensure effective outreach and user engagement. She also facilitates communication with partners and stakeholders.

- **Dr. Mohammed Hakim BENDIABDALLAH** – *Scientific and Technical Advisor*

Dr. Mohammed Hakim BENDIABDALLAH obtained his PhD in Computer Science from the University of Oran 1 (Algeria) in 2017. Throughout his doctoral studies and afterward, he gained extensive practical experience by working for a company specializing in software and web application development. He is currently an associate professor in the Department of Mathematics and Computer Science at the University of Ain Temouchent, Algeria. His main research areas are machine learning and deep learning. Dr. BENDIABDALLAH provides expert guidance on project methodology, artificial intelligence techniques, and technical validation, thus making a significant contribution to the robustness and scientific rigor of our work.

2.4. Project Objectives

The URE project aims to become a national reference in technological assistance for blind and visually impaired individuals by providing a concrete, intuitive, and accessible solution that empowers users in their daily lives.

Our objectives are structured as follows:

- **Short-Term Goals:**

Develop a fully functional prototype that includes the core features object recognition, real-time text reading, and emotion detection. This version will be tested with a panel of visually impaired users to gather feedback and refine the user experience, ensuring it is truly adapted to their needs.

- **Mid-Term Goals:**

Launch and scale the application across Algeria, making it accessible to all social categories, including individuals with low income. This will be achieved through an inclusive pricing strategy and strategic partnerships with NGOs¹⁹, accessibility organizations, and government programs that support people with disabilities.

- **Long-Term Goals:**

Establish URE as an essential everyday tool for blind and visually impaired individuals in Algeria. Once local deployment is stabilized, the project aims to expand into other countries with high social demand, customizing the app to suit local languages, cultures, and accessibility norms, while maintaining its core values of autonomy, simplicity, and inclusion.

2.5. Project Implementation Timeline

The implementation of the URE project will be carried out in several key phases to ensure both technical quality and user-centered development. The timeline is structured as follows:

¹⁹National Governmental Organization

Table 1 : Production schedule

Initiative	January	February	March	April	May	June	July	August	September	October	November	December
Research & Needs Analysis												
Prototype Development												
User Testing& Feedback												
Final Development & Optimization												
Marketing												
Launch												

Second Axis: Innovative Aspects

3. Innovative Aspects

3.1. The Nature of Innovations

➤ **Market Innovation:**

The market innovation behind our project lies in its ability to transform the accessibility landscape in Algeria by introducing a unique mobile application designed specifically for blind and visually impaired individuals. Unlike existing global tools that are often expensive or not adapted to local contexts, this application offers an offline, Arabic-language, AI-powered solution tailored to the daily needs of users. By addressing a gap in the local market where assistive technologies remain rare and underdeveloped our app creates demand where it previously didn't exist. It facilitates independent navigation, reading, and social interaction, empowering users to become more active members of their communities.

➤ **Continuous Innovation:**

Our team is committed to constant improvement based on user feedback and evolving accessibility standards. We work closely with visually impaired users, accessibility experts, and institutions to ensure the app continues to meet real-world needs. This user-centered approach allows us to continuously update features, enhance performance, and provide personalized services that deliver long-term value. With each iteration, we strive to integrate the latest AI developments to make the app smarter, more intuitive, and more responsive to the everyday challenges of visually impaired individuals.

3.2. Domains of Innovation

- This is the first mobile assistive technology in Algeria designed to support the independence of blind and visually impaired individuals through the integration of artificial intelligence, offline functionality, and a fully Arabic user interface. It promotes inclusive technology that is locally relevant, accessible, and adapted to real social needs.
- It is also the first solution in the region to combine AI-powered object detection, voice-guided navigation, text recognition, and emotion analysis in a single application specifically optimized for use without constant internet connectivity. This combination allows users to interpret and interact with their environment more naturally and safely.
- Additionally, the project includes a network of support services and institutional partnerships that go beyond traditional app functionality. Through collaboration with schools, NGOs, and government institutions, the app connects users with accessible education, training resources, and assistive networks. This ecosystem encourages collaboration, raises awareness, and strengthens inclusion across both public and private sectors.

Third axis: Strategic Market Analysis

4. Strategic Market Analysis

4.1. Market Segmentation

- **Potential Market:**

The potential market includes all individuals in Algeria living with visual impairments whether partially sighted or fully blind as well as those indirectly impacted, such as family members, caregivers, educators, and accessibility-focused organizations. This also extends to institutions such as special education schools, rehabilitation centers, NGOs, and public programs working to improve digital inclusion and independence for people with disabilities²⁰.

According to the World Health Organization, over 2.2 billion people worldwide suffer from some form of visual impairment, with many in developing countries lacking access to affordable assistive technologies²¹ (World Health Organization 2019). Algeria, with an estimated +250,000 visually impaired individuals, faces similar challenges in providing accessible and inclusive digital tools tailored to this population's needs²².

- **Target Market:**

Our core target market includes visually impaired individuals who already own smartphones but lack access to specialized assistive applications or technology. These users are most likely to benefit from a mobile-based, offline, Arabic-language solution. Additionally, we are targeting public institutions, NGOs, and local education centers that work with people with disabilities and may promote or implement our application within their programs.

This segment was chosen for its high social impact potential and because it remains significantly underserved in the Algerian tech ecosystem. By aligning with government-backed inclusion initiatives such as those encouraged through Ministerial Decree No. 1275, which supports local innovation and inclusive entrepreneurship we aim to create measurable impact and long-term value²³.

By positioning our application within this high-need and high-potential market, we intend to deliver a scalable, human-centered solution that promotes autonomy, strengthens digital participation, and fosters real inclusion in Algerian society.

4.2. Market Competition Analysis

Before positioning our solution in the market, it is essential to evaluate the landscape of existing assistive technologies designed for the visually impaired. This competitive analysis compares three notable projects Artha, BlindUp, and Dalil each offering different approaches to enhancing autonomy and navigation for blind users.

²⁰ Kotler, P. & Keller, K. (2016). *Marketing Management* (15th Ed.). Pearson

²¹ World Health Organization (2021). *World Report on Vision*.

²² UNICEF (2022). *Digital Accessibility for Inclusive Development in North Africa*.

²³ Ministère de l'Enseignement Supérieur – Algérie. *Arrêté ministériel n°1275*.

By examining their strengths and weaknesses, we can better understand the gaps in the market and demonstrate how our project provides a more accessible, flexible, and complete alternative adapted to the Algerian context.

Table 2 : Production schedule

	URL	Strengths	Weaknesses	Remarks
Artha	https://www.wedemain.fr/inventer/artha-une-innovation-unique-au-monde-pour-les-non-voyants/	-Offers a unique device combining a 3D recognition camera with a haptic feedback belt.	<ul style="list-style-type: none"> - Requires a physical cable connection between the camera and the belt. - Some users may need more time to adapt to haptic feedback. - Vulnerable to technical failures that may disrupt use. 	- Innovative hardware, but lacks portability and flexibility. Less practical than smartphone-based solutions.
Blind up	https://www.algerie360.com/france-un-algerien-developpe-des-lunettes-connectees-pour-rendre-les-non-voyants-plus-autonomes/	- Smart glasses equipped with dual wide-angle cameras, audio guidance, and GPS navigation.	- Still partially reliant on human assistance in complex or unfamiliar environments.	- High-tech and mobile, but not fully independent. Requires support in certain contexts.
Dalil	https://startupbrics.com/afri catech-dalil-startup-algeria-aveugles/	- Uses offline data-mining algorithms for navigation and object recognition.	- Limited to object detection and navigation; lacks real-time text reading and emotional recognition.	- Strong offline features, but fewer comprehensive functions than a fully AI-powered app.

Table 3 : SWOT Analysis

Strength	Weaknesses
<ul style="list-style-type: none"> ▪ All-in-one solution: Object detection, voice navigation, text reading, and emotion recognition. ▪ Fully offline + Arabic interface: Culturally and technically adapted to Algeria. ▪ Growing demand for inclusive technology in public and private sectors. 	<ul style="list-style-type: none"> ▪ Requires a compatible smartphone – limits access for users without modern devices. ▪ Technical issues may affect performance; requires continuous maintenance and updates. ▪ Low awareness among target users may require outreach and training.

Opportunities	Threats
<ul style="list-style-type: none"> ▪ National programs (e.g. Decree 1275) support inclusive innovation and tech start-ups. ▪ Increasing smartphone penetration and shift to digital accessibility services. ▪ Potential partnerships with schools, NGOs, and accessibility centers. 	<ul style="list-style-type: none"> ▪ Social stigma or resistance toward assistive technologies in some communities. ▪ Growing competition from local and international assistive solutions. ▪ Economic limitations may affect adoption without institutional support.

4.3. Marketing Strategy

4.3.1. Product

Our solution is a mobile application designed to enhance independence and daily accessibility for blind and visually impaired individuals. The app offers multiple integrated features, including object detection, real-time voice guidance, text reading, and emotion recognition. It works offline and is fully available in Arabic, making it locally adapted and user-friendly. Beyond individual use, the app can also be offered to institutions (such as schools, NGOs, and health centres) as part of inclusive technology programs. In addition, an online support space and community forum will be developed to provide resources, updates, and user engagement.

4.3.2. Pricing

Institutions and users can subscribe monthly or annually, with pricing tailored based on user type and service needs.

Table 4 : Subscription & Licensing Packages

Client type	Plan type	Monthly price (DZD)	Annual price (DZD)
Individual users B2C	Basic (free)	0	0
	Premium access	500	5000
	Lifetime license	—	10,000(one time for VIP clients)
Institution B2G(NGOs , schools , centers)	Assistive Services License	13,000	130,000
	Education Package	11,000	110,000
	Mobility& Navigation Suite	15,000	150,000

Fourth Axis: Organizational Plan

5. Organizational Plan

5.1. Application Workflow

As mentioned, our application is designed specifically for blind and visually impaired individuals to help them manage daily life independently through a range of intelligent voice-guided features. The app functions as a **virtual assistant** and operates as follows:

a) Account Creation Process :

We have developed a unique, inclusive method that allows blind users to create or access an account **without assistance from sighted individuals**.

- The app functions as a **voice assistant**: it reads aloud what appears on the screen and tells the user exactly what to say in order to register or log in.
- Once the user gives a voice command (e.g., "Create account" or "Log in"), the assistant **repeats the command back** to confirm before proceeding.
- This ensures a secure, hands-free process that is fully accessible from the start.

b) Navigation Within the App :

The app uses **voice interaction** to guide the user throughout their experience. It suggests **keywords** the user can speak to access the different features:

- Detection Feature:
 - When the user says “camera,” “detect,” or “open camera,” the app activates the camera to identify nearby objects. The app then verbally describes what it detects in real time, helping the user understand their surroundings.
- Text Scanning & Reading Feature:
 - By saying “scan,” “text,” or “read text,” the app launches a scanning mode. It captures the document using the phone camera, then reads it aloud to the user using built-in OCR and text-to-speech.

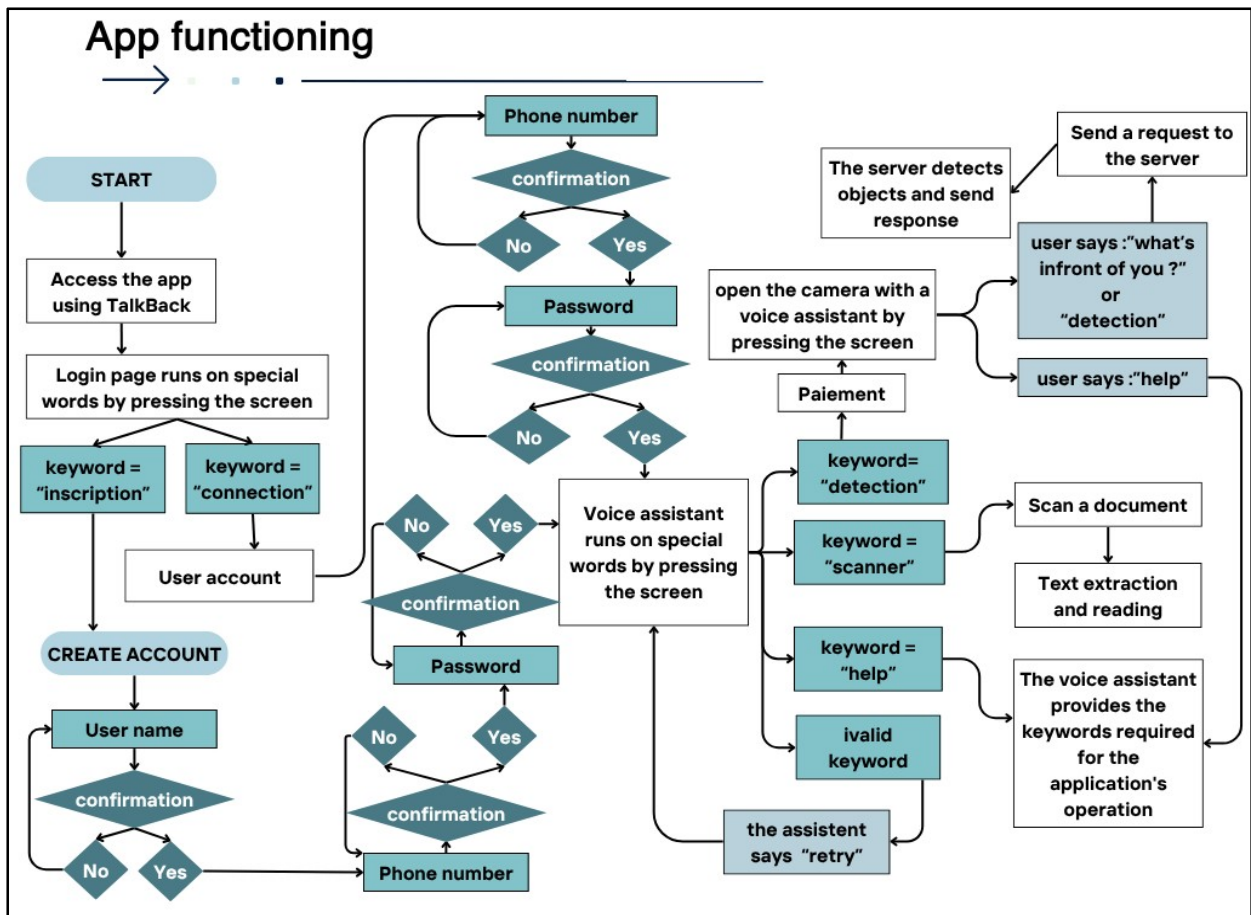


Figure 1: URE Mobile App Functionality

5.2. Team structure and human resource plan

At the early stage of our project, we will not require full time employees, Key tasks as marketing and accounting will be outsourced to reduce costs and maintain flexibility .However, as a startup grows, we anticipate the need to establish the following dedicated teams:

- **Marketing team :**

They are responsible for creating and executing the marketing strategy, including digital advertising, social media campaigns, influencer partnerships, public relations community outreach, email marketing and visibility in inclusion- focused network.

- **Outreach and partnership team:**

Focused on building relationships with NGO's (non-government organizations), schools, accessibility centers and government institutions. This team will handle outreach, on boarding, grant applications, contact negotiations and long -term partner support.

- **Research and development(R&D) team :**

In charge of developing new features for the application, ensuring continuous

improvements in AI performance and integrating user feedback. The team will also monitor trends in assistive technologies to keep the app relevant and competitive.

- **Administrative and finance team:**

Handles internal operations, financial planning, book keeping, payroll, and compliance. This team ensures transparency, proper resource management, and reporting especially important for potential public or NGO funding.

- **Customer support team :**

Provides responsive, accessible assistance to users, including app guidance, technical help, feedback collection, and complaint resolution. This team will be trained to serve visually impaired users with empathy and clarity, possibly using voice-based communication tools.

5.3. Key partners

- ❖ Algerian Start-up Fund (ASF) is one of our most critical partners, as their financial support will help us bring the project to life and scale it effectively. Their backing allows us to invest in development, accessibility research, and outreach.
- ❖ SATIM (Interbank Transaction and Electronic Payment Automation Company) will play a key role in enabling secure in-app payments and subscriptions through their API, ensuring our platform supports local and reliable online transactions.
- ❖ Government and Accessibility-Focused NGOs will be strategic partners in reaching our target users and distributing the application within educational institutions, centers for the visually impaired, and public health programs.
- ❖ Logistics & Hardware Providers (optional): While the app functions independently on smartphones, future collaboration with local electronics suppliers or mobility aid companies may support bundled offerings or hardware integrations (e.g., smart glasses, Bluetooth guides).

Fifth Axis: The Financial Plan

6. The Financial Plan

6.1. Costs and Expenses

Table 5 : Project start-up costs

Establishment fees	120 000
Utility connection fees (water, gas, etc.)	
Software, training	
Trademark, patent, or design registration	
Membership/entry fees	
Purchase of a business or shares	
Leasehold rights	
Security deposit	
Administrative fees	
Notary or lawyer fees	80 000
Signage and communication elements	
Real estate purchase	
Renovation and fitting-out	
Equipment	
Office supplies	
Initial stock of materials and products	
Starting cash reserve	800 000

Total cost: 1 000 000

Table 6 : Project start-up costs continued

Insurance	20 000
Phone & Internet	30 000
Other subscriptions	
Fuel & Transportation	
Travel & Accommodation Expenses	
Water, Electricity, Gas	
Health Insurance	
Miscellaneous Supplies	
Equipment & Uniform Maintenance	300 000
Premises Cleaning	
Advertising & Communication Budget	100 000

Total cost: 225.000

We do not plan to hire any full-time staff at first, we are going to contract out some major responsibilities to save time and money.

This allows us to allocate our resources heavily towards development, user support and accessibility testing.

Table 7 : Salaries for Employees & Managers

Employee Salaries	
Net Compensation for Managers	1 080 000

This project will be fully financed through venture capital from ASF, amounting to:

Table 8 : Funding Sources

Source	Amount	Percentage
Personal Contribution	0 DA	0%
ASF	4 000 000	5-7%
Total	4 000 000	5-7%

Before calculating the revenue, we first want to explain how we determined the unit costs and selling price:

Direct Costs

- Internet & phone: 30 000
- Insurance: 20 000

Indirect Costs

- Marketing & administrative expenses: 100 000
- Management compensation: 1 080 000

Unit Cost Calculation Based on 250 clients in the first year:

Total Direct Costs: Internet & phone + Insurance

$$= 30\,000 + 20\,000$$

$$= 50\,000$$

Total Indirect Costs: Marketing & administrative expenses + Management compensation

$$= 100\,000 + 1\,080\,000$$

$$= 1\,180\,000$$

Direct Customer Acquisition Cost: Direct Costs / Number of Clients

$$= 50\,000 / 250$$

$$= 200 \text{ DA per client}$$

Indirect Customer Acquisition Cost: Indirect Costs / Number of Clients

$$= 1\,180\,000 / 250$$

=4720Da per client

Total Unit Cost: 200+ 5440

= 4920 DA

Profit Margin (10%) =4920 × 0, 10

=492

Selling Price= 4920+ 492

= 5 412DA

Final Selling Price: 6 000DA

6.2. Revenue Forecast

In our first year of operation, we are projecting revenue primarily from monthly user subscriptions. Based on the size of our addressable market over 250 000 visually impaired individuals in Algeria we are adopting a moderately optimistic approach.

We estimate reaching 250 paying users in one year, each subscribing at a rate of 500 DA per month, or 6,000 DA per year.

The average subscription for our application is:

Table 9 : Average price for application creation

B2C	500 DA per month	6 000 DA per year
B2G	13 000 DA per month	156 000 DA per year

In this forecast, we assume that most clients will choose the monthly plan for flexibility. We will calculate revenue from individual users (B2C) and institutional clients (B2G) separately, using an initial base of 150 users in each segment, and projecting a 10% increase per year.

Table 10 : Optimistic sales

	Achieved			Projected				
Product A for Client Type	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Number of clients			150					
Price TTC			6 000					
B2C REVENUE			900 000					
Number of clients			150					
Price TTC			156 000					
B2G REVENUE			23 400 000					
TOTAL REVENUE (B2C+B2G)			24 300 000	26 730 000	29 403 000	32 343 300	35 577 630	39 135 393

To calculate a pessimistic revenue forecast, we will base our assumption on having only 60 clients during the first year, with a 5% increase each following year:

Table 11 : Pessimistic sales

	Achieved			Projected				
Product A for Client Type	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Number of clients			60					
Price TTC			6 000					
B2C REVENUE			360 000					
Number of clients			60					
Price TTC			156 000					
B2G REVENUE			9 360 000					
TOTAL REVENUE (B2C+B2G)			9 720 000	10 206 000	10 716 300	11 252 115	11 814 720.75	12 405 456.79

To calculate the balance sheet, income statement, and cash flow, we will first determine the average revenue between the optimistic and pessimistic scenarios:

Table 12: Average sales figures

	ACTUAL			Projected				
Product A for Client Type	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Optimistic Revenue Forecast			24 300 000	26 730 000	29 403 000	32 343 300	35 577 630	39 135 393
Pessimistic Revenue Forecast			9 720 000	10 206 000	10 716 300	11 252 115	11 814 720.75	12 405 456.79
Average Revenue Forecast			17 010 000	18 468 000	20 059 650	21 797 707.5	23 696 175.38	25 770 424.9

6.3. Forecasted Balance Sheet

Table 13 : Balance sheet

ASSETS								
	ACTUAL			PROJECTED				
In thousands of DZD	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Intangible Assets								
Tangible Assets			300000	300000	300000	300000	300000	300000
Land								
Building								
Depreciation			60000	120000	180000	240000	300000	
Other Tangible Fixed Assets								
Concession Assets								
Assets in Progress								
Financial Fixed Assets								
Equity								

Investments								
Other Equity Investments and Loans								
Other Fixed Securities								
Loans and Other Non-Current Financial Assets								
Deferred Tax Assets								
NON-CURRENT ASSETS			240000	180000	120000	60000	0	
Inventory and Work-in-Progress								
Receivables and Related Assets								
Client								
Other Debtors								
Taxes and Related Assets								
Other Receivables and Related Assets								
Cash and Cash Equivalents								
Marketable Securities and Other Current								

Financial Assets								
Treasury / Cash			17010000	18 468000	20 059650	21 797707.5	23 696175.38	25 770424.9
CURRENT ASSETS			17 070000	18 648000	20179650	21857707.5	23696175.38	25770424.9
TOTAL ASSETS			17250000	18828000	20 299650	21 917707.5	23 696175.38	25 770424.9

LIABILITIES								
	ACTUAL			FORECAST				
In thousands of DZD	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
EQUITY								
Issued Capital			4 000 000	4 000 000	4 000 000	4 000 000	4 000 000	4 000 000
Uncalled Capital								
Revaluation Surplus								
Premiums and Consolidated Reserves								
Net Income – Group Share								
Other Equity – Retained Earnings								
Net Income			13 250 000	14 828 000	16 299 650	17 917 707.5	19 696 175.38	21 770 424.9
EQUITY			17 250 000	18 828 000	20 299 650	21 917 707.5	23 696 175.38	25 770 424.9
NON-CURRENT LIABILITIES								

Loans and Financial Liabilities								
Deferred Tax Liabilities								
Other Non-Current Liabilities								
Provisions and Deferred Revenues								
NON-CURRENT LIABILITIES								
CURRENT LIABILITIES								
Suppliers and Related Accounts								
Taxes								
Other Liabilities								
Cash Liabilities / Bank Overdraft								
CURRENT LIABILITIES								
TOTAL LIABILITIES			17 250 000	18 828 000	20 299 650	21 917 707.5	23 696 175.38	25 770 424.9
Balance Check: Assets =Liabilities + Equity			0	0	0	0	0	0

6.4. Projected Income Statement

Table 14 : Income statements

In Thousands of DZD	Actual		FORECAST					
	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Sales and Related Revenue			17 010 000	18 468 000	20 059 650	21 797 707.5	23 696 175.38	25 770 424.9
Change in Finished Goods & WIP Inventory								
Capitalized Production								
Operating Grants/Subsidies								
Total Annual Production			17 010 000	18 468 000	20 059 650	21 797 707.5	23 696 175.38	25 770 424.9
Purchases Consumed								
External Services and Other Consumables			650 000	715 000	1 430 000	1 573 000	1 730 300	1 903 330
Annual Consumption			650 000	715 000	1 430 000	1 573 000	1 730 300	1 903 330
Operating Value Added			16 360 000	17 753 000	18 629 650	20 224 707.5	21 965 875.38	23 867 094.9
Personnel Expenses			1 080 000	1 188 000	1 296 000	1 425 600	1 568 160	1 724 976

Taxes and Related Payments								
Gross Operating Surplus (EBITDA)			15 280 000	16 565 000	17 333 650	18 799 107.5	20 397 715.38	22 142 118.9
Other Operating Income								
Other Operating Expenses								
Depreciation Charges			60 000	120 000	180 000	240 000	300 000	
Reversal on Impairments and Provisions								
Operating Result			15 220 000	16 445 000	17 153 650	18 559 107.5	20 097 715.38	22 142 118.9
Financial Income								
Financial Expenses								
Financial Result								
Ordinary Result Before Tax			15 220 000	16 445 000	17 153 650	18 559 107.5	20 097 715.38	22 142 118.9
Payable Tax on Ordinary Result								
Deferred Tax on Ordinary Result								
Total Ordinary Operating Revenue								

Total Ordinary Operating Expenses								
Net Result from Ordinary Activities			15 220 000	16 445 000	17 153 650	18 559 107.5	20 097 715.38	22 142 118.9
Extraordinary Items (Income)								
Extraordinary Items (Expenses)								
Extraordinary Result			15 220 000	16 445 000	17 153 650	18 559 107.5	20 097 715.38	22 142 118.9
Net Income for the Year			15 220 000	16 445 000	17 153 650	18 559 107.5	20 097 715.38	22 142 118.9

6.5. Cash-Flow Statement

Table 15 : Cash-flow

In Thousands of DZD	ACTUAL			FORECAST				
CATEGORIES	N-2	N-1	N	N+1	N+2	N+3	N+4	N+5
Cash flow from operating activities								
Net income for the year			15 220 000	16 445 000	17 153 650	18 559 107.5	20 097 715.38	22 142 118.9
Adjustments for:								
Depreciation and provisions			60 000	120 000	180 000	240 000	300 000	
Change in deferred taxes								
Change in inventory								
Change in receivables (clients and other accounts)								
Change in payables (suppliers and other liabilities)								
Gains or losses on disposals, net of taxes								

Cash flow generated by operating activities (A)			15 160 000	16 325 000	16 973 650	18 319 107.5	19 797 715.38	22 142 118.9
Cash flow from investing activities			4 000 000	4 000 000	4 000 000	4 000 000	4 000 000	4 000 000
Cash outflows for acquisition of fixed assets								
Cash inflows from disposals of fixed assets								
Impact of changes in the scope of consolidation								
Cash flow from investing activities (B)								
Cash flow from financing activities								
Dividends paid to shareholders								
Capital increase / ASF's share								
Capital increase / Startup founder's share								
Injection into shareholder current account (ASF)								

Repayment of ASF capital (at nominal value)								
Repayment of shareholder current account (ASF)								
Cash flow from financing activities (C)								
Change in cash for the period (A + B + C)								
Opening cash balance (beginning of the period)			15 160 000	16 325 000	16 973 650	18 319 107.5	19 797 715.38	22 142 118.9
Closing cash balance (end of the period)			15 160 000	16 325 000	16 973 650	18 319 107.5	19 797 715.38	22 142 118.9
Cash variation or Change in cash			0	0	0	0	0	0

Sixth Axis: The Prototype

7. The Prototype

7.1. Overview

URE's prototype was meticulously designed to provide a service for blind and visually impaired people to facilitate their daily activities, such as identifying objects and reading text without the help of another person. The prototype embodies various basic functions and ensures ease of use.

7.1.1. Development path

Our journey in developing URE was full of challenges and innovation. Building the URE application required us to have a deep understanding of the lives of blind and visually impaired people from their daily needs to the difficulties they face which in turn require practical solutions to make their lives easier. We translated these solutions into a smart application after a long research phase on the appropriate technologies. This enabled us to understand the real needs of blind people and how we can help them manage their lives more smoothly. After that, we chose the basic technologies to work with as the cornerstone of building the prototype. The development phase was divided into back-end and front-end development. Each stage required great attention to detail and adherence to the basic needs of blind people.

Throughout this period, we turned to our users to incorporate their feedback on every part we built, ensuring better quality of use and improved services.

7.2. Back-End development

The backend forms the foundation of our application. Though it operates behind the scenes, it plays a vital role in managing business logic, processing user requests, and ensuring smooth interaction with the database. It also handles essential operations like user authentication, server-side computations, and the integration of APIs that power the frontend experience (Builder.ai, n.d.). In this component, we leveraged artificial intelligence specifically, deep learning through YOLO technology to enhance functionality. This allowed us to implement real-time object detection, a core feature of our system design.

7.2.1. Object Detection & Deep Learning Choices

An object detector is a device or algorithm capable of identifying the presence and location of an object or class of objects in an image or environment (Belblidia 2024), often powered by deep learning techniques such as YOLO¹⁹ for fast and accurate detection.

Deep learning, a powerful branch of artificial intelligence, has become essential in pushing the limits of what machines can achieve. By using neural networks that learn

from large volumes of data, deep learning enables accurate and intelligent decision-making. Its ability to handle complex tasks makes it an ideal choice for modern applications. In our project, deep learning stood out for its performance, adaptability, and relevance to real-time visual analysis (Group n.d.).

7.2.2. YOLO Model

YOLO²⁴ has established itself as a leading deep learning model for object detection thanks to its remarkable speed, high accuracy, and strong generalization across diverse environments. Unlike traditional models, YOLO²⁰ processes entire images in a single pass, enabling real-time detection at over 45 frames per second. Its precision and minimal background errors make it ideal for real-world applications (Zoumana Keita 2024). Being open-source, it also benefits from continuous improvements by the research community making YOLO²⁰ a natural choice for our project, where fast and reliable detection is essential.

7.2.3. Database and data preparation

To build our dataset, we began by manually collecting images for each of the 36 predefined categories: all denominations of Algerian currency, key, bed, door, apple, banana, pepper, guava, lemon, mango, orange, pomegranate, strawberry, tomato, keyboard, clothes, mouse, red traffic light, green traffic light, yellow traffic light, stop sign, table, and potato. Each category includes approximately 150 images, resulting in a total of 5,070 images.

The images were sourced from publicly available platforms such as Google Images, Kaggle, and Roboflow, in addition to photographs we captured ourselves to ensure diversity and real-world relevance. After collection, data augmentation techniques were applied to enhance the variability of the dataset.

For annotation, we used the LabelImg tool to manually label each image according to its class. The annotated dataset was then divided into three subsets: training, validation, and testing, ensuring a balanced distribution across all classes.

7.2.4. Data Augmentation

Data augmentation refers to the process of increasing the size of a training dataset by creating new samples from existing ones or generating them artificially using different techniques (Lakas 2024).

7.2.5. Google Colab Setup

Google Colab is a free cloud environment from Google that lets you run notebooks in a similar way to Google Docs. It supports the main deep learning libraries and offers three types of resources: CPU²⁵, GPU²⁶ and TPU²⁷ (MESBAH 2021).

²⁴You Only Live Once

²⁵Central Processing Unit

²⁶Graphics processing unit

²⁷Tensor Processing Unit



Figure 2: Google Colab

7.2.6. Python Implementation

Python is a versatile and powerful high-level programming language, widely recognized for its ease of learning and efficiency. Thanks to its clear syntax, dynamic typing and built-in interpreter, it lends itself perfectly to rapid application development and scripting, as well as to advanced fields such as web development, artificial intelligence and data science (Foundation n.d.)



Figure 3: Python

7.2.7. FastAPI design

FastAPI²⁸ is a modern, high-performance framework for building APIs with Python. It is known for its speed, user-friendly design, and built-in support for interactive documentation (Ramírez n.d.).

In our application, FastAPI²⁴ played a key role in the server-side architecture. Its RESTful design allowed us to clearly define API routes and efficiently handle CRUD²⁹ operations. Moreover, FastAPI²⁴ facilitated seamless communication between the front-end and back-end, while delivering strong performance and easy integration with the deep learning tools we used.

²⁸Fast Application Programming Interface

²⁹Create, Read, Update, and Delete



Figure 4:FastAPI

7.3. Front-End development

The front-end development of the URE application focused on designing a user-friendly interface tailored to meet the needs of visually impaired users, by providing features that facilitate interaction.

The front-end represents the part of the application that users interact with directly through buttons, images, menus, and other interactive elements, which made it essential to ensure it is intuitive and smooth (Hewlett Packard Enterprise n.d.). To achieve this, Android Studio was chosen—an integrated development environment (IDE³⁰) used to build Android applications using languages like Java or Kotlin. It is a comprehensive platform that includes a code editor, emulation tools, and a testing environment to enable efficient app development.

7.3.1. Android Studio

We chose Android Studio for its native compatibility with Android devices and its robust set of tools tailored for mobile app development.

This environment allowed us to seamlessly integrate essential libraries, particularly for real-time camera management and object detection.

While it did require solid programming skills, Android Studio offered us significant flexibility in designing the user interface and optimizing the overall performance of the application.



Figure 5:Android Studio

7.3.2. Kotlin Language

Kotlin is a modern, concise, and efficient language that simplifies front-end development with cleaner code, built-in null safety, and seamless Java integration. Its

³⁰Integrated Development Environment

support for functional programming and coroutines makes it ideal for building responsive and reliable applications, while its growing ecosystem and community ensure it remains a future-proof choice for developers (Crossover n.d.).



Figure 6:Kotlin

7.3.3. API Integration

Integrating the API developed with FastAPI was an essential step in ensuring smooth communication between the back-end and front-end of our application.

We ensured that all requests followed REST³¹ principles, with clear route structuring and efficient response processing.

This ensured fast and reliable data transmission, essential to guarantee real-time detection and an optimal user experience.

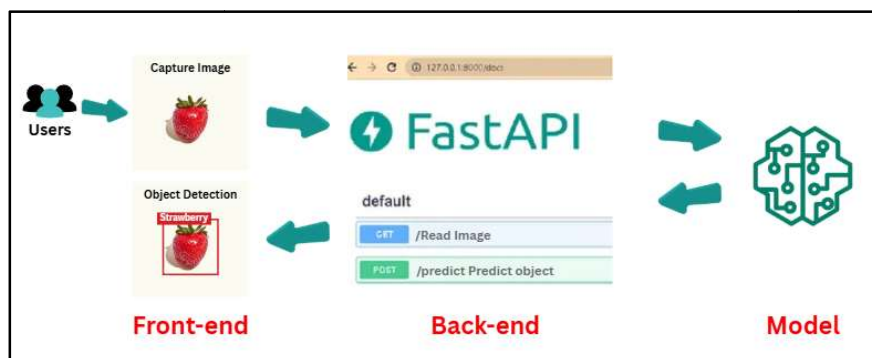


Figure 7: Object Detection Integration with FastAPI

7.4. Testing and Validation

The prototype was rigorously tested to detect and correct potential anomalies using different test methodologies such as unit testing, integration testing, system testing and model testing.

7.4.1. Unit Testing

Unit tests are made to check the functioning of each individual part of the code to confirm that each method and each class works well without errors for this we use JUnit (Kent Beck s.d.) and mockito (Szczezan Faber n.d.) for the front end.

³¹REpresentational State Transfer

7.4.2. Integration Testing

Integrity tests have been carried out to ensure that all parts of the application work together and to see if there are any problems that need to be fixed.

7.4.3. System Testing

This test was carried out to verify the overall behavior and stability of the application, and to validate its full functionality.

7.4.4. Model Testing

The performance of the model integrated into the application was rigorously evaluated via a series of specific tests, measuring its accuracy and robustness in the face of different data.

7.5. Future Developments

Our ambition to help visually impaired people doesn't stop when the application is in use by them. We also aim to continuously improve its security and add multilingual capabilities and recognize more things. And to develop other ways of supporting this community, to help them overcome the difficulties they face.

7.6. Prototype



Figure 8: Welcome page

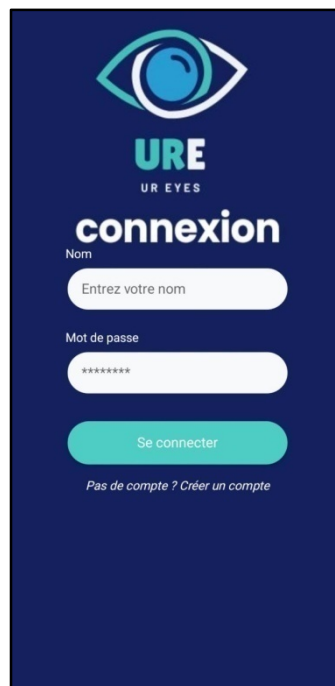


Figure 9: Login page



Figure 10: Sign-up page

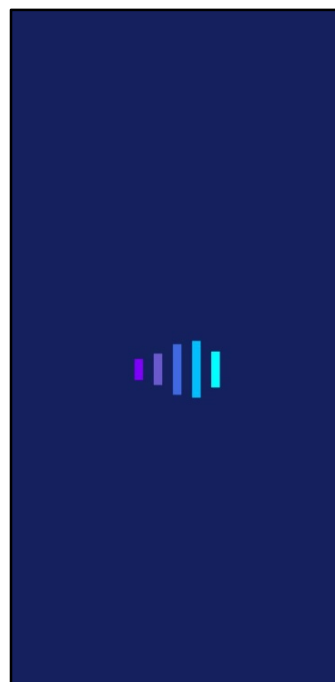


Figure 11: Home page

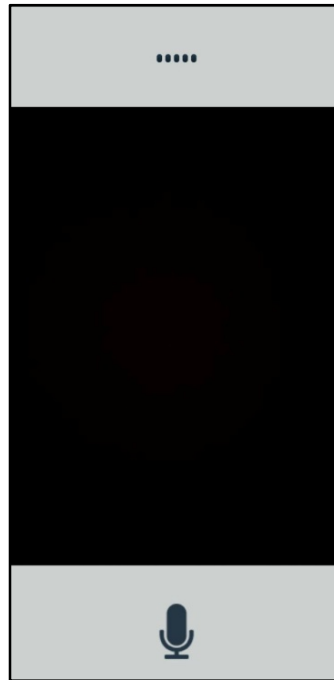


Figure 12:Detection page

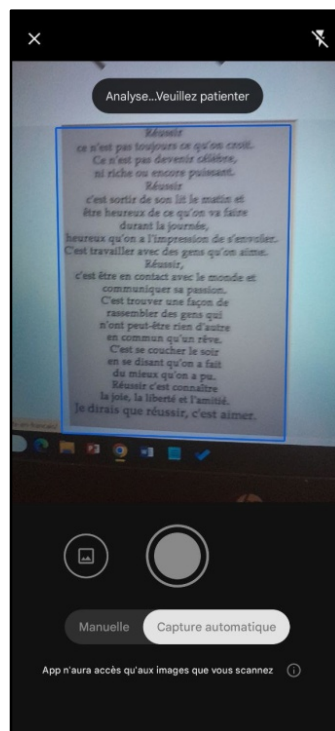


Figure 13:Scanner page

Réussir
ce n'est pas toujours ce qu'on croit.
Ce n'est pas devenir célèbre,
ni riche ou encore puissant.
Réussir
c'est sortir de son lit le matin et
être heureux de ce qu'on va faire
durant la journée,
heureux qu'on a l'impression de
s'envoler.
C'est travailler avec des gens qu'on
aime.
Réussir,
c'est être en contact avec le monde et
communiquer sa passion.
C'est trouver une façon de
rassembler des gens qui
n'ont peut-être rien d'autre
en commun qu'un rêve.
C'est se coucher le soir
en se disant qu'on a fait
du mieux qu'on a pu.
Réussir c'est connaître
la joie, la liberté et l'amitié.
Je dirais que réussir, c'est aimer.

Figure 14: Reading the scanning-text page

Numéro de carte

MM/AA

CVV

Payer

Figure 15: Payment page



Figure 16: Offers page

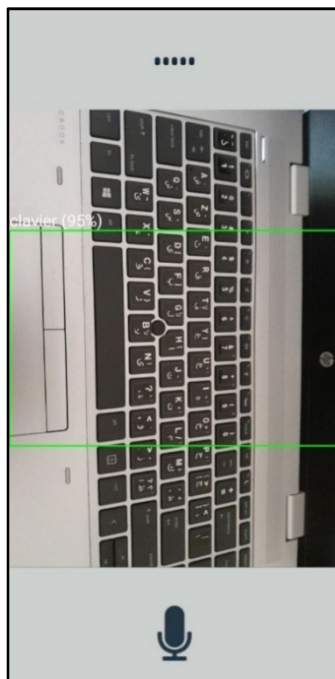


Figure 17: Keyboard detection



Figure 18: Detection of 2000DA and 500DA

8. General Conclusion

In conclusion, this study focused on the role of digital visibility and accessible digital spaces in enhancing the autonomy and social inclusion of visually impaired individuals in Algeria. With its focus on developing and rolling out URE, a mobile app powered by AI our research demonstrates that accessible digital technology can revolutionize lives.

We highlighted how online visibility is now an essential aspect of success both for businesses and for individuals with disabilities seeking integration into the digital space. Platforms like URE demonstrate that accessibility, visibility, and connectivity are not mere add-ons but essential empowerment tools. With intelligent features such as object detection, live text reading, and emotional recognition, our app provides users with practical, real-life solutions to today's challenges.

In our research, we also analyzed how digital tactics such as social media presence, mobile applications, platforms, and freemium business models can enhance outreach, visibility, and user interaction. These tactics are imperative for inclusive technologies to thrive in today's competitive environment. Our findings validate the proposition that inclusive digital platforms like URE are not only socially impactful but also economically viable by offering locally applicable, offline, and Arabic-supported solutions.

As a language solution, URE addresses a genuine need in Algeria's tech landscape. Moreover, by aligning with national initiatives like Decree 1275 and collaborating with NGOs and schools, the project makes meaningful contributions to Algeria's broader digital and entrepreneurial ecosystem.

Lastly, URE is not merely a technological innovation; it is a stride toward social justice, self-determination, and digital equality. By harnessing the potential of artificial intelligence and mobile accessibility, URE delivers tangible, sustainable change for underrepresented communities while fueling Algeria's inclusive innovation ecosystem.

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Annexes

10. Annexes

Key partners <ul style="list-style-type: none"> • ASF. • NGO's and Associations for the Visually Impaired. • Accessibility Centers & Special Schools. • Public Institutions. • Telecom & Hosting Providers. • DDASS • Play store. 	Key Activities <ul style="list-style-type: none"> • User Support & Feedback Handling. • App Monitoring & Maintenance. • Content & Data Updates. • Marketing & Community Engagement. 	Value proposition <ul style="list-style-type: none"> • All-in-one tool. • Offline functionality. • Trilingual support. • Affordable access. • Locally adapted. • Boosts independence. • Flexibility. • Mobility. 	Customer relationships <ul style="list-style-type: none"> • Supporting the visually impaired individuals by enhancing independence improving their life quality. • Exchanging trust. 	Customer segments <ul style="list-style-type: none"> • Visually impaired individuals. • Tech-savvy blind individuals seeking AI navigation tools. • NOGs. • Accessibility centers & special schools.
	Key Resources <ul style="list-style-type: none"> • Skilled development team. • Technology infrastructure. • Funding. 		Channels <ul style="list-style-type: none"> • NGOs. • Advertising campaigns. • Conferences. • Awareness campaigns. • Online platforms. 	
Cost structure <ul style="list-style-type: none"> • Developing. • Marketing and outreach 		Revenue streams <ul style="list-style-type: none"> • Partnerships with NGO's, Accessibility centers & special schools. • Users subscriptions. 		

11. Abstract

The aim of this research was to study the impact of digital technology and artificial intelligence on the social inclusion and autonomy of Algerian visually impaired individuals by developing the URE mobile application. URE offers a novel solution by enabling blind and visually impaired users to interact more independently with their environment through an AI-powered platform incorporating object recognition, text-to-speech reading, and emotion recognition. Running offline and in the local Arabic language, the application is tailored for domestic technology and cultural contexts, enhancing access and online visibility for an underprivileged segment of society.

This study was structured into six essential axes. First, we examined the genesis of the idea, objectives, marketing strategy, business strategy, strategic partnerships, and deployment resources. Second, a detailed examination of the project's financial profile was conducted, including income projections and cost estimation. Finally, the development of the application prototype was broken down into primary phases of design, backend and frontend coding, and implementation of AI technologies.

In short, URE offers an inclusive and comprehensive solution addressing real issues for blind individuals in Algeria. Through reinforcement of digital visibility and accessibility, the project contributes to building a fairer digital space while encouraging innovation, cooperation, and participation in social and institutional networks. With creative but localized functions, URE demonstrates the potential for assistive technology to shape society toward increased inclusivity.

Keywords: Assistive technology, artificial intelligence, digital visibility, social inclusion, Algeria, visually impaired.

ملخص

هدف هذا البحث هو دراسة تأثير التكنولوجيا الرقمية والذكاء الاصطناعي على الإدماج الاجتماعي والاستقلالية لدى الأفراد المكفوفين وضعاف البصر في الجزائر، وذلك من خلال تطوير تطبيق الهاتف المحمول. يقدم تطبيقنا قيمة مضافة جديدة من خلال تمكين المستخدمين المكفوفين وضعاف البصر من التفاعل بشكل أكثر استقلالية مع بيئتهم عبر منصة مدعومة بالذكاء الاصطناعي تتضمن تقنيات تعرف على الأشياء وتحويل النص إلى كلام والتعرف على المشاعر. التطبيق مصمم ليتناسب مع السياقات التكنولوجية والثقافية المحلية، مما يعزز الوصول لشريحة مهمشة من المجتمع.

تم تنظيم هذه الدراسة ضمن ستة محاور أساسية. أولاً، تم استعراض نشأة الفكرة، الأهداف، الإستراتيجية التجارية، الشراكات الإستراتيجية، و موارد التنفيذ. ثانياً، تم إجراء تحليل مفصل للملف المالي للمشروع، بما في ذلك توقعات الدخل وتقدير التكاليف. وأخيراً، تم تقسيم تطوير النموذج الأولي للتطبيق إلى مراحل رئيسية شملت التصميم، برمجة الواجهة الخلفية والأمامية، وتطبيق تقنيات الذكاء الاصطناعي.

و باختصار يقدم تطبيقنا حلاً شاملاً ومتكاملاً يعالج حقيقة يعاني منها المكفوفون في الجزائر. ومن خلال تعزيز الرؤية الرقمية وسهولة الوصول، يساهم المشروع في بناء فضاء رقمي أكثر عدلاً، كما يشجع على الابتكار، التعاون، والمشاركة في الشبكات الاجتماعية والمؤسسية. وبفضل وظائفه الإبداعية والمحلية في آن واحد، يظهر التطبيق إمكانيات التكنولوجيا المساعدة في تشكيل مجتمع أكثر شمولاً.

الكلمات المفتاحية: التكنولوجيا المساعدة، الذكاء الاصطناعي، الرؤية الرقمية، الإدماج الاجتماعي، المكفوفون، الجزائر.