الجمهورية الجزائرية الديمقراطية الشعبية

People's Democratic Republic of Algeria

وزارة التعليم العالي والبحث العلمي

Ministry of Higher Education and Scientific Research

جامعة 8 ماي 1945 قالمة

University of Guelma 8 May 1945

Faculty of Natural and Life Sciences and Earth and Universe Sciences

Domain: Natural and Life Sciences

Sector: Biological Sciences

Department of Biology

Specialty/Option: Product quality and food safety

Master's Thesis
Start-up

Mobile application: quality monitoring and control

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2023- 2024

Acknowledgment

Praise be to **ALLAH**, the almighty who has granted us success, patience and above all good health in completing this work.

First and foremost, we would like to extend our heartfelt gratitude to everyone who supported us throughout our graduation project. We are especially thankful to our supervisor, **Pr SOUIKI Lynda**, for her unwavering encouragement, valuable insights, and guidance. Her continuous support and dedication in keeping us informed and providing us with the latest updates were instrumental in helping us improve and succeed in our project.

We would like to express my sincere gratitude to the members of the jury **Dr MERABET Rym** and **Dr TALEB Yassmine** for dedicating their time and expertise in reading and providing valuable critiques on our master's thesis.

Finally, we would like to thank all the people who, from near or far, have contributed to the development of this dissertation. We acknowledge our deepest feeling of gratitude to our loving parents for being a constant source of inspiration and motivation.

Dedication

*I thank our good Almighty **God** for guiding me, helping me, and given the faith and the courage to accomplish this work.*

*I thank the unseen hand that removed the thorns from my path and supported me in my weakness and frailty, to the one whose death taught me that life is a struggle and the meeting in paradise, God willing, to whom I dedicate my success, surrounded by prayers, hoping that the Almighty informs him of my gratitude, love, and success. To my **beloved father**, who was the inspiration for my success, who left before he could reap the fruits of his efforts, to whom I hoped to attain the honor of success by his side.*

*To my first example and the meaning of love and kind. To the smile of life and the secret of existence, to the one whose supplication was a secret, my success and her tenderness are a surgical balm... To the one who guided me and accompanied me in all the endeavors of my life and is still doing so until now, to the one whose heart saw me before her eyes, to my tree that does not wither, to the shade that I shelter in every time. May God protect her and grant her forgiveness and wellness, **My beloved mother.***

*Thank you, dear sisters **Khadidja** and **Selma** for picking me up every time I fell down, and thanks to my sister-in-law **Fatiha.***

*To my brothers **Nedjmou** and **Nasrou** our presence has been my strength and my motivation. And thanks to my brothers in law **Amine** & **Amir.***

*To my little angels **Sadjed, Jad**, **Ilyane**, **Youssri, Tadjou**, and **Ilyne** It is among the biggest joys of life, having watched you grow and learn with great curiosity about the world. Your passion for life keeps me going-pressing harder, dreaming bigger. Hopefully, this project acts as a reminder that no goal is too big, and no dream is out of reach if you pursue it with passion and determination.*

*To my friends, **Selma**, **Asma**, **Imane**, **Zayneb**, **Hayem**, **Khawla**, and **Youssra** your encouragement and friendship have carried me through the toughest moments. You have all been my greatest allies, and I am forever grateful for your unwavering support.*

Rania

First and foremost, I thank God, whose guidance and blessings have been my constant source of strength and perseverance throughout this journey.

To my previous teachers, your wisdom and support have shaped my path, and I am forever grateful for the knowledge you've imparted.

To my family, especially, thank you for your unwavering love, encouragement, and sacrifices. Your belief in me has made all the difference.

To everyone who has kept me in their thoughts and prayers, your support means more to me than words can express.

To my brothers, thank you for your constant support, standing by my side through every step of the way.

And finally, to Creativa Club, thank you for providing a space for creativity, growth, and inspiration. This achievement is as much yours as it is mine.

Wail

Abstract

A food quality control mobile application can significantly change the approach to the care of people's food. With the help of new technologies, it will be rather simple for users to read a code on the packing of food products and get detailed information regarding the quality of a product in a matter of seconds. On the use of the barcode system, all aspects of date of expiry and nutritive values shall be well indicated. It would also add clear and objective criteria to grant the consumer the ability to make an informed decision about what sort of food s/he wants to consume. It can also be connected to an actual-time database on food recalls, or contamination reports or any violation on standards regarding food safety then alerts are raised in real time whenever a user is almost selling or consuming a product that may be dangerous to his/her health. These features ensure that people are always alert any time there is a problem with a product being sold thus avoiding food borne diseases. With such an application, enterprises can also control the rate of freshness and safety of inventory with the aim of achieving health regulations and reduced wastage. On a basic and logical level, the mobile app of food quality can improve the food safety and provide clear information that awareness of an unsafe food product can be obtained just with a scan of a code.

Keywords : mobile application, food quality control, barre code, alert.

Résumé

Une application mobile de contrôle de la qualité des aliments peut changer de manière significative l'approche de la prise en charge de l'alimentation des gens. Avec l'aide des nouvelles technologies, il sera assez simple pour les utilisateurs de lire un code sur l'emballage des produits alimentaires et d'obtenir des informations détaillées sur la qualité d'un produit en quelques secondes. Concernant l'utilisation du système de code-barres, tous les aspects de la date d'expiration et des valeurs nutritives doivent être bien indiqués. Cela ajouterait également des critères clairs et objectifs pour permettre au consommateur de prendre une décision éclairée sur le type d'aliments qu'il souhaite consommer. Il peut également être connecté à une base de données en temps réel sur les rappels de produits alimentaires, les rapports de contamination ou toute violation des normes de sécurité alimentaire, puis des alertes sont déclenchées en temps réel chaque fois qu'un utilisateur est sur le point de vendre ou de consommer un produit qui pourrait être dangereux pour sa santé. Ces caractéristiques garantissent que les gens restent toujours vigilants chaque fois qu'il y a un problème avec un produit vendu, évitant ainsi les maladies d'origine alimentaire. Avec une telle application, les entreprises peuvent également contrôler le taux de fraîcheur et de sécurité des stocks dans le but de respecter les réglementations sanitaires et de réduire le gaspillage. Sur un niveau de base et logique, l'application mobile de qualité alimentaire peut améliorer la sécurité alimentaire et fournir des informations claires, permettant de prendre conscience d'un produit alimentaire dangereux simplement en scannant un code.

Mots clés : application mobile, contrôle de la qualité des aliments, code-barres, alerte.

ملخص

يمكن لتطبيق مراقبة جودة الطعام أن يغير بشكل كبير النهج المتبع في رعاية طعام الناس. بمساعدة التقنيات الجديدة، سيكون من السهل للغاية على المستخدمين قراءة رمز على عبوة المنتجات الغذائية والحصول على معلومات مفصلة حول جودة المنتج في غضون ثوانٍ. فيما يتعلق باستخدام نظام الباركود، يجب الإشارة بوضوح إلى جميع جوانب تاريخ انتهاء الصلاحية والقيم الغذائية. سوف يضيف أيضًا معايير واضحة وموضوعية تمنح المستهلك القدرة على اتخاذ قرار مستنير بشأن نوع الطعام الذي يرغب في استهلاكه. يمكن أيضًا ربطه بقاعدة بيانات في الوقت الفعلي حول سحب المنتجات الغذائية، أو تقارير التلوث، أو أي انتهاك للمعايير المتعلقة بسلامة الغذاء، ثم يتم رفع التنبيهات في الوقت الفعلي كلما كان المستخدم على وشك بيع أو استهلاك منتج قد يكون خطيرًا على صحته. تضمن هذه الميزات أن يكون الناس دائمًا في حالة تأهب في أي وقت يحدث فيه مشكلة مع منتج يتم بيعه، مما يساعد على تجنب الأمراض المنقولة بالغذاء. مع مثل هذا التطبيق، يمكن للشركات أيضًا التحكم في معدل نضارة وسلامة المخزون بهدف تحقيق اللوائح الصحية وتقليل الفاقد. على المستوى الأساسي والمنطقي، يمكن لتطبيق الهاتف المحمول لجودة الطعام تحسين سلامة الغذاء وتوفير معلومات واضحة تفيد بأن الوعي بمنتج غذائي غير آمن يمكن الحصول عليه فقط بمسح رمز.

الكلمات المفتاحية: تطبيق جوال، مراقبة جودة الطعام، رمز شريطي، تنبيه.

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Introduction

Introduction

Introduction:

In recent years, the growing concern over food safety and quality has heightened the need for effective tools to ensure the health and well-being of consumers. As technology advances, the use of mobile applications for food quality control has become increasingly feasible and practical. This project aims to develop a mobile application designed specifically to assist in food quality control, enabling users to assess, monitor, and verify the safety and freshness of food products in real time.

The application will focus on integrating advanced features such as barcode scanning, real-time food quality alerts, and product traceability. It will allow users, including consumers, food inspectors, and businesses, to easily track the origin of food items, verify expiration dates, and check for any food recalls or contamination reports. The primary goal is to enhance transparency in the food supply chain while empowering users to make informed decisions regarding the quality and safety of their food.

Moreover, the project will leverage cutting-edge technologies like machine learning algorithms and sensor integration to predict and detect possible issues in food quality, such as spoilage or contamination. Through these features, the application will contribute to reducing foodborne illnesses and improving public health outcomes.

By developing this mobile solution, the project not only addresses a critical need in the food industry but also aligns with global trends towards sustainability, consumer protection, and digital innovation in food safety management.

Chapter I

Quality control

Chapter I: Quality control

1. Evolution of quality control:

The quality of goods produced and services rendered has been monitored, either directly or indirectly, since time immemorial. However, using a quantitative base involving statistical principles to control quality is a modern concept.

The ancient Egyptians demonstrated a commitment to quality in the construction of their pyramids. The Greeks set high standards in arts and crafts. The quality of Greek architecture of the fifth century B.C. was so envied that it profoundly affected the subsequent architectural constructions of Rome. Roman-built cities, churches, bridges, and roads inspire us even today. **(Mitra, 2016).**

The first step in the development of the quality filed, operator quality control, was inherent in the manufacturing job up to the end of the nineteenth century. Under that system, one worker, or at least a very small number of workers, was responsible for the manufacture of the entire product, and therefore each worker could totally control the quality of personal work. For this reason, the quality of the product could essentially be controlled by a person who was also the operator, and the volume of product was limited. The worker felt a sense of accomplishment, which lifted morale and motivated the worker to new heights of excellence. Controlling the quality of the product was thus embedded in the philosophy of the worker because pride in workmanship was widespread. **(Feigenbaum 1991).**

In the early 1900s we progressed to foreman quality control. This period saw the large-scale advent of our modern factory concept, in which many individuals performing a similar task were grouped so that they could be directed by a foreman who the assumed responsibility for the quality of their work.

The manufacturing system became more complex during World War1, involving large numbers of workers reporting to each production foreman. As a result, the first full-time inspectors appeared on the scene, initiating the third step, which we can call inspection quality control. **(Feigenbaum 1991).**

In the 1920s and the 1930s, the concept of evaluating manufacturing processes to promote product quality entered the American system. Statisticians in Germany and America applied statistical methods for analyzing and controlling quality variations in the product manufacturing process. In 1924, Walter A. Shewhart of Bell Telephone Laboratories

developed a statistical chart for the control of product variables in manufacturing, an innovative milestone that is considered to be the beginning of an approach to quality known as statistical quality control. Shewhart later wrote a handbook called Statistical Method From The Viewpoint of Quality Control in 1939; his published work gained recognition from both statisticians and engineers. Working alongside Shewhart and contributing to his ideas in the 1920s were H.F. Dodge and H.G. Romig, both of Bell Telephone Laboratories, who developed the area of acceptance sampling as a substitute for full product quality inspection.

This phase was an extension of the inspection phase and boiled down to making the big inspection organizations more efficient. Inspectors were provided with a few statistical tools, such as sampling and control charts. The most significant contribution of statistical quality control was that it provided sampling inspection rather than 100 percent inspection. The work of quality control, however, remained restricted to production areas and grew rather slowly. **(Feigenbaum 1991).**

The next phase, total quality control, took place during the 1960s.An important feature during this phase was the gradual involvement of several departments and management personnel in the quality control process. Previously, most of these activities were dealt with by people on the shop floor, by the production foreman, or by people from the inspection and quality control department. The commonly held attitude prior to this period was the quality control was the responsibility of the inspection department. The 1960s, however, saw some changes in this attitude. People began to realize that each department had an important role to play in the production of a quality item. The concept of zero defects, which centered around achieving productivity through worker involvement, emerged during this time. For critical products and assemblies this concept proved to be very successful. Along similar lines, the use of quality circles was beginning to grow in Japan. This concept, which is based on the participative style of management, assumes that productivity will improve through an uplift of morale and motivation, achieved in turn, through consultation and discussion in informal subgroups. **(Mitra, 2016).**

2. Definition of Quality control:

Quality control may generally be defined as a system that maintains a desired level of quality, through feedback on product/service characteristics and implementation of remedial actions, in case of a deviation of such characteristics from a specified standard. This general

area may be divided into three main subareas: off-line quality control, statistical process control, and acceptance sampling plans. **(Mitra, 2016).**

ISO 9001:2015 defines Quality Control as "a part of quality management focused on fulfilling quality requirements." It includes activities such as the inspection and testing of incoming raw materials, in-process products, and finished goods.

3. Importance of quality control:

Safety and dependability rank highest among processed food quality factors, followed by "deliciousness" and "appropriate price." Food quality control is necessary because of the enormous losses the food business would suffer if faulty products were rejected or recalled, as well as the harm they would do to the company's reputation and the public's trust.

Because of this, quality assurance ought to be an industry objective that is supported by everyone in the company, from the top management to the lowest employees. When implementing quality control, the Plan, Do, Check, Action (PDCA) cycle ought to be employed. **(Ihegwuagu, s.d.).**

Quality control ensures that defective goods do not go out to the public. Companies that have quality control methods in place often have employees who pay close attention to their work.

In food and drug manufacturing, quality control prevents products that make customers sick, and in manufacturing, quality control can ensure that accidents don't happen when people use a product. **(Berk, 2016).**

4. Quality control tools:

Seven basic tools been used successfully in food quality control programs for decades, and in all likelihood will remain as the foundation for future quality needs in the industry. Over many years, there has been general agreement that these seven tools should be in every quality control program. They are discussed in some detail later on. The following is a list, a brief explanation, and a simplified example of each. **(Hubbard, 2012).**

Flow chart

Cause and effect diagram

Control chart (variable and attribute)

Histogram

Check sheet

Pareto chart

Scatter diagram.

4.1. Flow chart:

A picture of a process, using engineering symbols, pictures, which indicates the main steps of a process**. (Hubbard, 2012)** On the other hand, a flowchart visualize a picture including the inputs, activities, decision points, and outputs for using and understanding easily concerning the overall objective through process. This chart as a problem-solving tool can apply methodically to detect and analyze the areas or points of process may have had potential problems by ^documenting^ and explaining an operation, so it is very useful to find and improve quality into process. **(Neyestani, 2017).**

4.2. Scatter diagram:

When solving a problem or analysing a situation one needs to know the relationship between two variables. A relationship may or may not exist between two variables. If a relationship exists, it may be positive or negative, it may be strong or weak and may be simple or complex. A tool to study the relationship between two variables is known as Scatter Diagram. It consists of plotting a series of points representing several observations on a graph in which one variable is on X-axis and the other variable in on Y-axis. If more than one set of values are identical, requiring more points at the same spot, a small circle is down around the original dot to indicate second point with the same values. The way the points lie scattered in the quadrant gives a good indication of the relationship between the two variables. **(Varsha M. Magar1 &, Dr. Vilas B. Shinde, 2014).**

4.3. Fishbone diagram:

Kaoru Ishikawa is considered by many researchers to be the founder and first promoter of the “Fishbone” diagram (or cause and effect diagram) for root cause analysis and the concept of quality control circles. Cause and effect diagram was developed by Dr. Ishikawa in 1943. It has also two other names that are Ishikawa diagram and fishbone because the shape of the diagram looks like the skeleton of a fish to identify quality problems based on their degree of importance. **(Hubbard, 2012)** Systematically, it identifies major causes and breaks them down into sub-causes and further sub-divisions in order to investigate, analyze and solve the root causes that, initially, led to the problem. Such a tool aids to help the organization in

managing and handling the possible causes of the problem. In addition, such tool bridges the chasm between the organization and the most affecting causes, allows a perfect understanding of the problem and helps in studying each cause. **(Abdel-Hamid & Abdelhaleem, 2019).**

4.4. Control chart (variable and attribute):

A graph of process characteristic plotted in sequence, which includes the calculated process mean and statistical control limits. **(Hubbard, 2012)** Control charts was developed by Dr. Shewhart during 1920s while he was with Bell Telephone Laboratories.

Control chart makes possible the diagnosis and correction of many production troubles and brings substantial improvements in the quality of the products and reduction of spoilage and rework**. (Varsha M. Magar1 &, Dr. Vilas B. Shinde, 2014).**

4.5. Histogram:

The histogram is considered an irreplaceable tool to show the distribution frequency of the variables values which were observed. It is one of the types of the bar chart which describes the attribute and variable data on a specific research and clarifies the data distribution and variation in the process. Moreover, it is considered a helping hand for the identification of the underlying distribution of the variable being studied. In order to be easily used and understood by the operation process's workers, the histogram has to be appropriately and professionally designed. **(Abdel-Hamid & Abdelhaleem, 2019).**

4.6. Check sheet:

Check sheets are simple forms with certain formats that can aid the user to record data in an firm systematically. Data are "collected and tabulated" on the check sheet to record the frequency of specific events during a data collection period. They prepare a "consistent, effective, and economical approach" that can be applied in the auditing of quality assurance for reviwing and to follow the steps in a particular process. Also, they help the user to arrange the data for the utilization later. **(Hubbard, 2012).**

4.7. Pareto chart:

The concept of the Pareto principle was developed in the 19^{th} century by the economist Vilfredo Pareto, who noticed that 80% of the land in Italy was owned by just 20% of the population. Moreover, he found that 80% of production usually came from only 20% of the companies. This led him to a general hypothesis that 80% of the results are originated from

20% of the factors or causes that influence the results. The Pareto principle, which is also known as the rule of 20/80, has become an important quality tool, recognized by the American Society for Quality (ASQ) as one of seven basic quality tools for process improvement. **(Alkiayat, 2021).**

5. Methods of quality control:

Quality control is a systematic approach to ensuring that products and services meet specified requirements. Various methods are employed to maintain and improve quality across different industries. Below are some key methods along with references from articles for further reading:

5.1. Hazard analysis and critical control points (HACCP):

HACCP is a systematic preventive approach to food safety that focuses on identifying and controlling hazards throughout the production process. The method emphasizes critical control points (CCPs) where potential hazards can be eliminated or reduced to acceptable levels. **(Mortimore & Wallace, 2013).**

5.2. Good manufacturing practices (GMP):

Good manufacturing practices encompasses a set of guidelines that ensure products are consistently produced and controlled according to quality standards. It is essential for minimizing risks involved in food production. **(World Health Organization, 2007).**

5.3. Quality assurance:

Quality assurance involves systematic processes aimed at ensuring that products meet specified requirements for quality. This includes both proactive measures during production and reactive measures after product release. **(Sethi & Bansal 2018).**

5.4. Traceability systems:

Traceability systems track the movement of food products through the supply chain from farm to table. This is crucial for managing recalls and ensuring product safety**. (Spink & Moyer, 2011)**

5.5. Laboratory testing methods:

Laboratory testing is critical for assessing the microbiological, chemical, and physical properties of food products, These tests provide objective data on food safety and quality. **(Koutsoumanis & Sofos, 2004).**

Chapter II

The use of mobile applications in the food sector

Chapter II: The use of mobile applications in the food sector

1. Types of mobile applications in the food industry:

Mobile applications serve various functions in the food industry, from enhancing traceability to improving consumer interaction and engagement.

1.1. Food ordering and delivery apps: These apps provide convenience by allowing users to order food from restaurants and have it delivered to their homes, which has become particularly popular during the COVID-19 pandemic.

Mobile food-ordering apps play a critical role in developing restaurants' brand satisfaction and loyalty, suggesting that brands should collaborate with app providers**. (Wu, 2022).**

1.2. Food authentication apps: Handheld devices and apps are used for food authentication, employing technologies like spectroscopy and sensor arrays to verify the authenticity of food products.

1.3. Recipe and meal apps: These apps help users plan meals and find recipes, making food preparation more convenient and enjoyable**.**

1.4. Food sharing and waste reduction apps: These apps facilitate food sharing and redistribution, aiming to reduce food waste and create new social connections between users.

1.5. Food tracking and nutrition apps: These applications provide users with greater control over their diet and health by monitoring their nutritional intake and encouraging self-awareness.

2-Benefits of mobile applications in the food industry:

2.1. Convenience and accessibility:

Due to their unmatched convenience, mobile applications have completely changed how customers interact with food businesses. Customers don't even need to visit restaurants or make phone calls because they can browse menus, place orders, and make payments right from their devices. Due to their accessibility, more people are using food delivery services, enabling them to eat their favorite meals in the comfort of their homes or workplaces.

2.2. Nutritional and health benefits:

Mobile applications can effectively improve nutrition behaviors by providing dietary intake assessments, physical activity monitoring, and nutrition education.

2.3. Sustainability and food waste reduction:

Mobile applications designed to reduce food waste can have a positive impact on food waste management and food poverty, particularly in developed countries.

2.4. Enhanced customer engagement:

Mobile apps enable direct communication between food businesses and consumers through features like push notifications, in-app messaging, and loyalty programs. These tools keep customers updated on the latest offers and promotions, fostering stronger connections between brands and their audience. This increased engagement helps build customer loyalty and boosts overall satisfaction.

2.5. Increased brand loyalty:

Apps offer exclusive deals, discounts, and reward programs directly to users, incentivizing repeat business. These loyalty-driven features keep customers coming back, fostering stronger brand loyalty over time.

Chapter III
Needs analysis and specification

Chapter III: Needs analysis and specification

1.Needs analysis:

1.1. Users:

- Access to reliable information about ingredients, origin, and quality of food products.
- Receive real-time alerts about product recalls and food fraud incidents.
- Ease of Use: Intuitive and easy-to-navigate user interface.

1.2. User account and registration: Simplified registration process allowing users to sign up using social media accounts or email.

2. Application specifications:

2.1. Reliable information access:

Ingredient information: Detailed breakdown of ingredients for each food product.

Quality assurance: Data on the quality standards and certifications of the products.

2.2. Real-time alerts

Product recalls: Instant notifications about recalled food products.

Food fraud incidents: Alerts regarding any detected instances of food fraud.

3. Technical specification:

3.1. Platform compatibility: The application should be developed for both iOS and Android platforms to maximize reach.

3.2. User interface design: Focus on creating an intuitive UX/UI design that enhances user engagement and simplifies navigation.

3.3. Maintenance and support: Plan for ongoing technical support post-launch to address any issues that arise and ensure a seamless user experience over time.

Chapter IV

App design

Chapter IV: App design

1. Design requirements:

1.1. User-friendly interface: The application should have a clean, intuitive, and easy to navigate interface that caters to needs and expectations of users.

1.2. Barcode scanning: The application should have be able to scan barcodes quickly and accurately, providing users with immediate access to product information.

1.3. Product information: The application should provide comprehensive and detailed information on product composition, including ingredients, nutritional values, and allergens.

1.4. Alert: The application should be able to alert users to potential health risks, helping them make informed purchasing decisions.

1.5. Product rating system: The application should include a product rating system that allows users to rate and review products based on their quality and safety, providing valuable feedback to both consumers and manufactures.

1.6. Integration with food safety databases: The application should be able to seamlessly integrate with food safety databases, providing users with up-to-date information on food safety and quality standards.

1.7. Search and filtering: The application should include a robust search and filtering functionality, allowing users to easily find and compare products based on various criteria, such as brand, category, or nutritional information.

1.8. Personalization: The application should offer personalization features, such as the ability to create a favorites list or set custom alerts, to enhance the user experience and cater to individual preferences.

1.9. Accessibility: The application should be designed with accessibility in mind, ensuring that it can be used by individuals with disabilities, in compliance with relevant accessibility guidelines and standards.

2. Technical Requirements:

To develop the application, the following technical requirements must be considered:

Chapter IV: App design

2.1. Programming Languages: The application will be developed using a combination of programming languages, including Java, Swift, and Kotlin, to ensure cross-platform compatibility and optimal performance.

2.2. Database Management: The application will use a robust database management system, such as MySQL or MongoDB, to store and manage product information, user data, and other relevant data.

2.3. Barcode Scanning: The application will utilize advanced barcode scanning libraries, such as ZXing or Scandit, to provide accurate and reliable barcode scanning capabilities.

2.4. Integration with food safety databases: The application will leverage APIs and web services to seamlessly integrate with food safety databases, ensuring that users have access to the most up-to-date information on food safety and quality.

2.5. Secure authentication and authorization: The application will implement secure authentication and authorization mechanisms, such as biometric authentication or multi-factor authentication, to protect user data and ensure the privacy and security of the application.

2.6. Scalability and performance: The application will be designed with scalability and performance in mind, ensuring that it can handle a large number of users and product data without compromising the user experience.

2.7. Continuous integration and deployment: The application will be developed using a continuous integration and deployment pipeline, ensuring that updates and bug fixes can be quickly and efficiently deployed to users.

2.8. Monitoring and logging: The application will include robust monitoring and logging capabilities, allowing developers to quickly identify and address any issues or performance bottlenecks.

2.9. Accessibility and compliance: The application will be designed to comply with relevant accessibility guidelines and standards, ensuring that it can be used by individuals with disabilities.

Conclusion

Conclusion:

The use of food quality assessment through developing a mobile application in real-time for food quality assessment reflects a major breakthrough in the area of food safety and quality assurance. Owing to the advent in power of mobility, the additional features like the ability to recognize images, analyse data from sensors and involve machine learning to improve its proficiency in quality checking, this project seeks to overcome the limitations of conventional quality checking.

The mobile application will serve as a reference point for the food handlers, independent technical inspectors and the consumer since they enhance their decision making on consumption and delivering of good quality food products. With the promotion on the food safety, the productivity of the food chain as well as the confidence of the consumers in consuming foods that have been processed through advanced technology this project will have a lot to offer in the food industry as well as in the general public.

Moreover, if this project is successfully implemented, there will be possibilities of the creation of similar applications in other industries where there is need for supervision, analysis and control of quality on live processes. This could inform more applied approaches to technology and mobile technology in particular by illustrating the potential of technology enabled solutions to problem solving.

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Annex

First Section

Project presentation

First Section: Project presentation

One day, while reviewing local news and listening to public complaints, we noticed a rise in food poisoning cases. A growing issue in the Algerian market has emerged, related to food fraud and tampering. This development was alarming, and we began to consider how we might contribute to resolving the problem.

We decided to engage directly with consumers to understand their experiences firsthand. To that end, we conducted a survey with 183 people from across Algeria. The results were eye-opening:

- 50 respondents reported having allergies or chronic conditions that put them at higher risk.
- 85 individuals stated that they had fallen victim to vendor fraud or food poisoning.

Through this survey, we uncovered several significant challenges faced by consumers.

These findings intensified our resolve to seek an immediate solution. We began to contemplate how technology could be leveraged to provide consumers with accurate and transparent information. Our vision was to create a digital platform focused on transparency and food safety in Algeria.

We decided to start by developing a comprehensive digital platform that includes:

- **Consumer alerts**: When counterfeit or adulterated products are identified on the market, users will receive instant alerts.
- **Direct communication with regulatory agents**: If consumers find expired products in stores, they can report them directly to regulatory bodies.
- **Awareness campaigns**: The platform will provide information on the shelf life of most food items, raising consumer awareness about food safety.

We began by gathering data and subsequently developed a user-friendly mobile application that allows consumers to scan products and obtain real-time information. We also focused on creating an effective alert system, adding a feature for direct communication with regulatory agents, and providing comprehensive information about food consumption.

To bring this project to reality, we need to assemble a team of software developers and food safety professionals, selecting the Algerian capital as the base of our operations. Algiers

offers an ideal location for market analysis due to its population density, consumer diversity, and commercial activity.

Looking ahead, we will launch a digital platform aimed at protecting consumer health and enhancing transparency in the Algerian food market. The platform will be accessible to all Algerian consumers, regardless of location, via both a mobile app and a website. We hope this initiative will strengthen consumer confidence in food products and make the Algerian market safer and more transparent.

Value

In an era of rapid technological advancements and an even faster-evolving lifestyle, our project offers an innovative and flexible solution to the problem of food safety in Algeria. We are committed to the values of modernity, flexibility, exceptional performance, and task streamlining across all aspects of our project.

2. Adopted values:

2.1. Modernity:

- We leverage the latest technologies to develop our digital platform, ensuring a sophisticated and superior user experience.
- Our goal is to provide a solution that aligns with recent developments in food safety and technology.

2.2. Flexibility:

- Our platform is designed to cater to the varying needs of users, whether they are sensitive consumers or those seeking precise information about food products.
- We adopt a flexible approach, allowing the platform to evolve and improve based on user feedback and market changes.

2.3. Exceptional performance:

- We continually strive to deliver the highest quality and best performance in our services, from rapid alerts to accurate data.
- Our aim is to provide a seamless and efficient user experience.

2.4. Task simplification:

- Our platform is designed to offer clear and simple information to consumers, making it easier for them to make informed decisions about the food they purchase.
- We aim to streamline processes and provide user-friendly solutions to our consumers.

2.5. Social benefits:

2.5.1. Risk reduction:

- Our platform helps minimize the risk of consuming contaminated or falsified food, thereby protecting consumer health.
- By providing precise and up-to-date information, we can reduce the risk of food poisoning and nutritional sensitivities.

2.5.2 Accessibility and convenience:

- Our platform is accessible to everyone, anytime and anywhere, through the mobile app or website.
- We strive to offer an accessible and user-friendly experience for all segments of the community.

With these values and the benefits we offer, our goal is to make Algerian food markets safer and more transparent, while providing a distinctive and flexible experience for consumers.

3. Team Members

Wael Benchettah

- **Skills:** Workplace leadership, passion for challenges, intermediate-level design, montage.
- **Qualifications:** license degree in quality control.
- **Training:** Practical experience in quality control and knowledge of design/digital marketing.

First Section: Project presentation

Rania Batah

- **Skills:** Proficiency in computer tools such as Word and PowerPoint.
- **Qualifications:** license degree in biochemistry.
- **Training:** Experience at the Department of Commerce in Guelma.

Project Development

We collaborated closely with the professor to organize and adjust the workflow of this project. Initially, I researched similar applications that could be adapted or improved with a distinctive Algerian character. Simultaneously, my colleague reviewed several theses in the medical field, and we focused on continuously refining the concept. Once we had a clear idea, we proceeded to the market study phase, analyzing customer requirements in the Algerian market. The feedback we gathered significantly contributed to our progress.

After reaching our initial conclusions, i moved on to researching the content of the application, specifically the data. Here, i examined the necessary components to effectively represent the idea. Upon completing this phase, I shifted focus to the design of the logo, which is based on several factors aimed at attracting and motivating users to engage with the application. In the design, I relied on complementary colors—blue and orange. which is the best combination for the logo

- **Blue** represents trust and loyalty. It has a calming and reassuring effect on our psyche, instilling a sense of peace and making users feel secure. It is a neutral, reliable, and responsible color that conveys support and trustworthiness.
- **Orange** is an energetic and playful color that brings emotional strength. It is optimistic and uplifting, adding spontaneity and positivity to life, while also encouraging social interaction and creativity. Orange is vibrant and youthful, symbolizing innovation and vitality, and it naturally draws attention.

Based on these meanings, I combined blue to express stability and trust, with orange to bring vitality and innovation to the logo.

At the same time, my colleague was finalizing the thesis, and we discussed either attending the university in person or using applications like Meet or Telegram for remote collaboration. After completing each phase, we met with the professor to review our work,

addressing any overlooked aspects and receiving guidance. Additionally, our programmer provided consistent support, dedicating time and effort to bring our idea from concept to reality.

Project objectives

Our startup embraces a strategic vision centered on technological innovation and inclusivity, with a strong commitment to information transparency and operational efficiency. We aim to develop a prototype with high analytical precision and user-friendliness, enhancing the value provided to users. Our goal is to offer an exceptional user experience by designing a diverse and inclusive user interface that caters to all demographic groups.

We guarantee accurate and transparent data on food quality, which will strengthen brand credibility and increase user trust. Continuous innovation is central to our approach, as we plan to introduce new features in line with technological advancements, ensuring rapid market expansion. We prioritize health and commerce in our strategy by offering tools that empower users to make informed food-related decisions.

In the future, we plan to expand geographically and collaborate with food-related businesses to promote access to the application and achieve sustainable growth. Confidently, we announce that our application will be the first of its kind, revolutionizing food inspection techniques and setting new standards for food safety and health.

SAHTI

CALENDAR OF TASKS

TASK/MONTH	MARCH	APRIL	MAY	JUN	AUG
STUDY preable. organization and research	✓	✓			
market analysis and specefication	✓	✓			
design and validation		✓	✓		
listing of necessary materials			✓		
prototype production				✓	✓

Second section:

Innovative Aspects

Second section: Innovative Aspects

Second focus area: Innovative aspects

1. **Nature of the Innovation**

Our project is innovative because it offers complete services. The technologies we are using are new to the local market, which means there are no competitors at the moment.

2. **Areas of Innovation**

Our project introduces innovation in the following ways:

- It is the first in Algeria to use technology to connect the health and commerce sectors, which makes it very valuable.
- It targets a wide range of users from different sectors.
- It combines a focus on health and nutrition with modern technology.
- The app gives personalized advice, such as suggesting gluten-free options for people who are allergic to gluten.
- Future updates will help the app grow and reach more users quickly
- Provides immediate protection against food safety hazards, distinguishing the platform from standard product tracking apps.
- Creates a feedback strengthens regulatory enforcement and oversight.
- The application's integration of real-time alerts and decentralized reporting functionalities facilitates a comprehensive consumer protection ecosystem. This paradigm shift transforms food safety from a solely regulatory framework into a collaborative, community-driven initiative, harnessing technological advancements to empower and safeguard consumers with heightened efficiency.
- Adaptation for Future Expansion The platform can be expanded to include **product scanning**. which would allow consumers to check products instantly at the point of sale. This potential integration creates a dynamic, adaptable system for enhancing public health and safety.

Third section:

Analysis Strategic Market

Third section: Analysis Strategic Market

Potential Market

Our potential market is divided into two main groups: individual customers and private businesses or companies. In the customer group, we target people with food allergies or health issues like digestive disorders, whether related to sugar, dairy, gluten, or other foods. We also include athletes from all sports, as well as parents who are concerned about their children's health. In general, our app is for anyone who cares about what they eat.

Motivation to Buy

The main reason people would use our services is to improve their health, which is priceless. Our service is designed to meet customer demand. From the studies we've done, Including one of the previous studies supervised by our professor in public schools in GUELMA, we observed an increase in food allergies among children.

For parents, the key motivation is to give their children the best. For athletes, the motivation comes from their focus on physical, mental, and emotional health.

For companies, our app helps improve their products by acting as a link between businesses and customers. This makes the process easy and helps achieve the goals we discussed earlier.

Market targeting

We didn't choose this market randomly. It was based on a study, including surveys with these groups that showed their interest in our project.

Measuring the intensity of competition

Currently, we have no direct competitors, which gives us a distinct advantage as long as our idea is grounded in reality. Among indirect competitors, we can mention certain fitness trainers or nutritionists who have built a community of followers. While some of them have established themselves in this field, their limitation lies in focusing solely on nutrition. In contrast, we offer a more comprehensive solution, integrating both the food and business sectors.

Third section: Analysis Strategic Market

Global competitors

- Safety culture:

Strengths: Comprehensive and user-friendly, strong customer support, provides real-time reports and audits.

Weaknesses: High subscription costs, reliant on internet connection.

- Controlant:

Strengths: Specializes in cold chain management, offers real-time data.

Weaknesses: Unspecified costs, reliant on internet connection.

- Chomp:

Strengths: Advanced tools for tracking food safety, team management for chefs.

Weaknesses: Expensive, complex for non-specialists.

Key competition factors in the algerian market

- **Language support**: To ensure widespread use, apps need to be available with support in Arabic.
- **Cost**: Apps should offer pricing plans suitable for small and medium-sized businesses in Algeria.
- **Compliance with local laws**: Apps must comply with Algerian regulations to ensure smooth implementation and integration with the local system.
- **First-mover advantage**: The platform is the first of its kind in Algeria, integrating food safety, real-time alerts, and regulatory compliance in one app
- **Health and safety focus**: Strong emphasis on protecting consumers by providing instant notifications about unsafe food products,
- **Broad Target Audience**
- **Scalability**: The app can be expanded with features like product scanning and can integrate with businesses' quality control systems.

Third section: Analysis Strategic Market

Promotion strategy for a digital platform for food safety in Algeria

Promoting a digital platform effectively requires a comprehensive strategy that combines both traditional and modern digital tools. We will utilize social media, advertising, classic methods, as well as our personal networks of family and friends to spread the word and achieve the desired success. Below is a detailed explanation of each strategy:

1.**Social media**

1.1. Facebook :

Create an official Facebook page for the project with complete information about the platform, its benefits, and how to use it. Regularly update the page with engaging content.

Join Facebook groups related to health, food safety, and shopping in Algeria.

Use Facebook ads to target specific demographics.

1.2. Instagram:

Set up an official Instagram account and post attractive photos and videos showcasing the platform's benefits.

Collaborate with health and nutrition influencers in Algeria to promote the platform.

Use paid Instagram ads to increase awareness.

1.3. Twitter:

Manage a Twitter account to post quick updates and news about food safety.

Engage with followers by answering questions and interacting with posts.

Use paid Twitter ads to target users interested in health and food safety.

1.4. YouTube:

Create an official YouTube channel to publish educational and tutorial videos about using the platform.

Use video ads on YouTube to promote the platform.

2. Advertising

- **Google Ads**:
  - Use paid search ads on Google to increase awareness of the platform.
  - Run visual and text ads across Google's display network.
- **Local Ads**:
  - Run promotional ads on local radio and TV stations, especially during peak hours.
  - Publish ads in local newspapers and magazines read by consumers interested in food safety.
- **Billboards**:
  - Place billboards in high-traffic areas to raise awareness of the platform.

3. Traditional methods :

- **Brochures and Flyers** :
  - Distribute informational flyers in public places like markets, shopping centers, clinics, and pharmacies.
  - Print and distribute educational brochures with articles on food safety.
- **Exhibitions and events** :
  - Participate in local health and food-related exhibitions and events.
  - Organize workshops and conferences on food safety.

4. Family and friends

- **Personal network**:
  - Encourage family and friends to try the platform and share their experiences with others. They can act as ambassadors for the platform, promoting it at social events.
  - Request family and friends to make direct recommendations to their contacts, as word-of-mouth is one of the most effective ways to build trust.
- **Personal communication channels**:
  - Share information about the platform within family and friend groups on WhatsApp and Facebook, inviting them to try it.
  - Send personal messages via text or email to inform friends and acquaintances about the platform and its benefits.

Third section: Analysis Strategic Market

By implementing these varied strategies, we will ensure that our project reaches a wide audience and creates the intended impact. The combination of social media, advertising, traditional approaches, and leveraging personal networks will create a robust and integrated strategy that will support the success of the digital platform dedicated to transparency and food safety in Algeria. This will help us increase awareness, build trust, and achieve the goals set for the Project.

Fourth Section

Plan and Organization

Fourth Section: Plan and Organization

Here is a detailed overview of **the process of creating a mobile application** that detects food additives, with features such as food spoilage alerts, estimated inconsommable, and customer communication with relevant authorities:

Step 1: Define the requirements and objectives

1. Identify the target audience: Determine the type of users who will be using the application, such as parents, health-conscious individuals, or food enthusiasts.

2. Define the features: Determine the essential features that the application should have, such as:

- Food additive detection
- Inconsumable Food alerts
- Communication with relevant authorities
- User-friendly interface

3. Determine the technical requirements: Decide on the technologies and tools needed to develop the application, such as:

- Programming languages (e.g., Java, Swift, Kotlin)
- Development frameworks (e.g., React Native, Flutter)
- Database management systems (e.g., MySQL, MongoDB)
- APIs and integrations (e.g., food databases, health organizations)

Step 2: Design the user interface and user experience

1. Sketch the wireframes: Create low-fidelity wireframes to visualize the layout and structure of the application.

2. Design the UI components: Create high-fidelity designs for the UI components, such as buttons, text fields, and lists.

3. Develop the UI components: Implement the UI components using the chosen programming language and development framework.

4. Test the UI components: Conduct usability testing to ensure the UI components are user-friendly and intuitive.

Step 3: Develop the core features

1. Food Additive Detection:

- Integrate a food database:

- Implement a search function: Allow users to search for specific foods or food additives.

2. Unconsumed Food Alerts:

- Integrate a food spoilage database

3. Communication with Relevant Authorities:

- Integrate APIs for communication

- Implement a notification system

Step 4: Develop the backend and database

1. Choose a backend framework: Select a suitable backend framework, such as Node.js, Django, or Ruby on Rails.

2. Design the database schema: Define the database schema to store user data, food information, and other relevant data.

3. Implement the backend logic: Write the backend code to handle user requests, process data, and interact with the database.

4. Test the backend: Conduct thorough testing to ensure the backend is stable, secure, and scalable.

Step 5: **Test and debug the application**

1. Conduct unit testing: Write unit tests to ensure individual components of the application are functioning correctly.

2. Conduct integration testing: Test the integration of different components to ensure seamless interactions.

3. Conduct user testing: Conduct usability testing to ensure the application is user-friendly and intuitive.

4. Debug and fix issues: Identify and fix any bugs or issues that arise during testing.

Step 6: Deploy the application

1. Choose a deployment platform: Select a suitable deployment platform, such as the App Store, Google Play Store, or a custom-built server.

2. Configure the deployment: Configure the deployment settings, such as server settings, database connections, and API integrations.

3. Launch the application: Launch the application and make it available to the target audience.

Step 7: Maintain and update the application

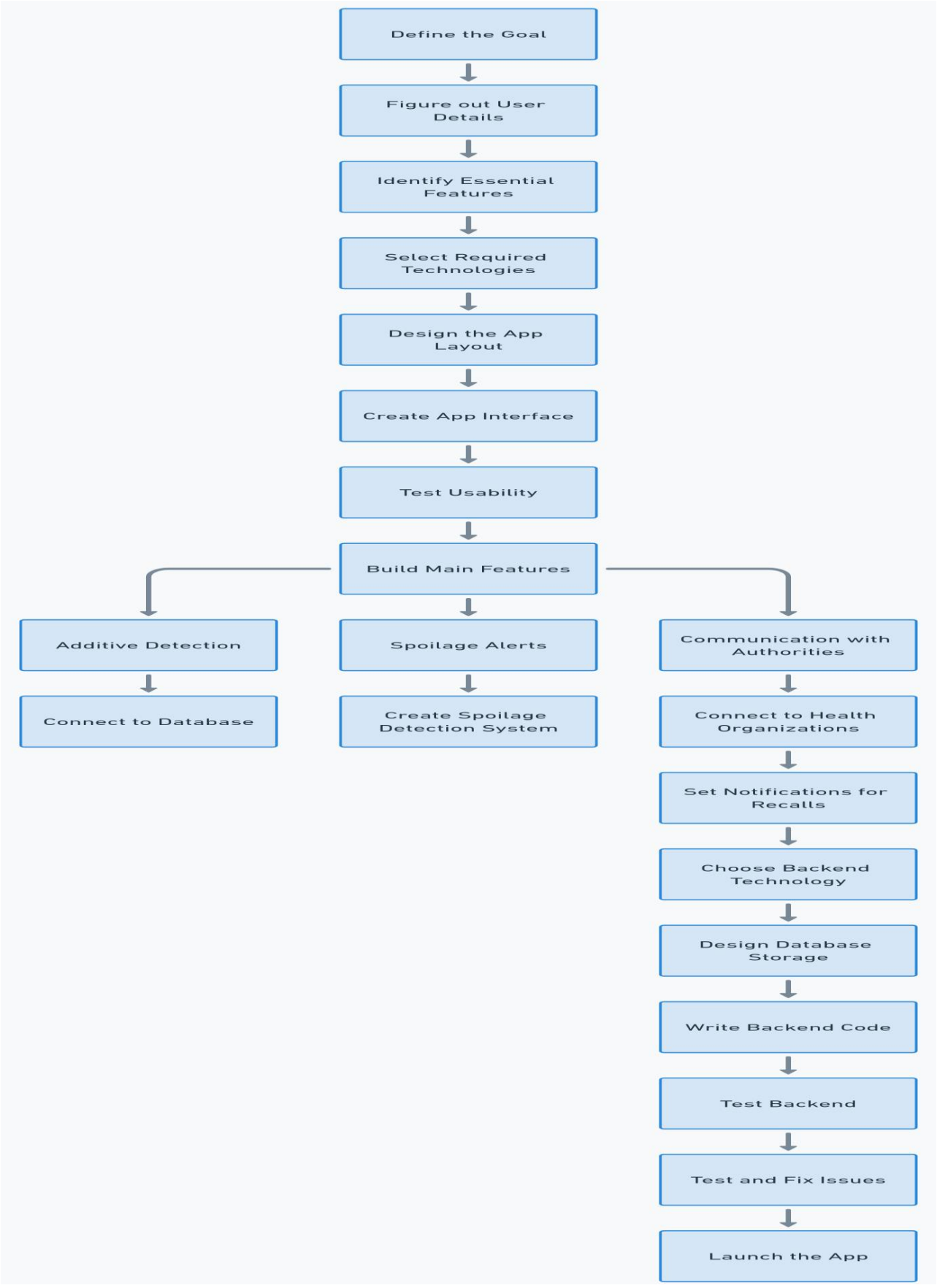
1. Monitor user feedback: Continuously monitor user feedback and reviews to identify areas for improvement.

2. Fix bugs and issues: Fix any bugs or issues that arise during use.

3. Update features and functionality: Regularly update the application with new features and functionality to keep users engaged and satisfied.

4. Ensure security and compliance: Ensure the application remains secure and compliant with relevant regulations and standards.

Fourth Section: Plan and Organization



Fourth Section: Plan and Organization

Supply: Supply refers to the resources needed to develop, maintain, and promote the application. Below is a detailed breakdown of each sub-step mentioned:

1. **Define the purchasing policy**
    - **Raw materials :**
        - **Software development:**
            - Development languages and tools: Dart (Flutter), Java/Kotlin (Android), Swift (iOS).
            - Cloud services: AWS, Google Cloud Platform, Microsoft Azure for hosting databases and backend.
            - APIs and libraries.
        - **Hardware :**
            - Computers and servers: High-performance development stations.
            - Testing equipment: Smartphones and tablets from various brands and models to test the app on multiple platforms.
    - **Materials and supplies :**
        - Office supplies.
        - Collaboration and project management software: Subscriptions to tools like Slack, Jira, Confluence.
    - **Equipment :**
        - Servers: If hosting is done in-house, choose high-performance, scalable servers.
2. **Identify key suppliers**
    - **Supplier selection:**
        - Selection criteria: Reliability, costs, product/service quality, technical support.
        - Research and evaluation: Compare multiple suppliers, request quotes, check references and customer reviews.
    - **Potential suppliers:**
        - Development software: JetBrains (IntelliJ), Microsoft (Visual Studio).
        - Cloud services: AWS, Google Cloud Platform, Microsoft Azure.
        - Collaboration tools: Slack, Microsoft Teams, Trello.
        - IT equipment: Dell, HP, Apple.

3. **Determine payment policy and delivery timelines**
    - **Payment policy :**
        - Payment terms: Net 30, Net 60 (payment within 30 or 60 days after receiving the invoice).
        - Negotiation: Negotiate favorable payment terms, such as discounts for early payments.
        - Payment methods: Bank transfers, company credit cards, installment payments for larger purchases.
    - **Delivery timelines :**
        - Standard delivery times: Establish standard delivery times based on the company's needs.
        - Emergencies: Plan for rapid procurement options in case of emergencies or unexpected needs.
        - Order tracking: Use an order management system to track delivery times and available stock.

Supply summary:

1. **Purchasing policy:** Define the need for raw materials, supplies, and equipment, focusing on quality and cost.
2. **Key suppliers:** Identify and select the most reliable and cost-effective suppliers, building trusted relationships with them.
3. **Payment policy and delivery timelines:** Negotiate favorable payment terms and establish clear, trackable delivery times.

2. Workforce Developing a mobile app with advanced features requires a skilled and diverse team. It is estimated that 12 to 16 positions will need to be created. This includes a project manager for planning, coordination, and resource management. Additionally, we'll need 2-3 frontend developers to build the mobile app for iOS and Android platforms, and 2 backend developers for managing servers, databases, and APIs. An API/Integration developer will be needed to handle API integration and backend services development.

For the user interface (UI) and user experience (UX) design, we plan to hire 1-2 UI/UX designers. To ensure the app's quality, 1-2 QA specialists will be responsible for testing and validating the app's features. A security specialist will be essential to ensure data

and communication security within the app. Additionally, a data scientist/analyst will be required to analyze data and develop algorithms for detecting additives and predicting food shelf life.

For customer support and managing reports of expired food, we'll need 1-2 people dedicated to these tasks. Finally, a marketing and communications specialist will manage app promotion, social media, and user communications.

The team members will work mostly as freelancers or from a development office, depending on their roles. The project manager, developers, designers, QA specialists, security experts, and data scientists can work either as freelancers or in a development office. Customer support, report management, and marketing can also be handled either by freelancers or at the main office.

Handling/Logistics Though minimal in the context of mobile app development, handling might include managing test equipment like smartphones and tablets, maintaining servers if physical servers are used, and office supply logistics. For these tasks, it might be necessary to hire logistics staff or use specialized handling services.

Workforce Overview Developing this app involves various direct and indirect jobs. **Direct jobs** include the project manager, frontend and backend developers, API/Integration developer, UI/UX designers, QA specialists, security expert, data scientist/analyst, customer support/report management staff, and the marketing/communications specialist—these are directly involved in developing, launching, and maintaining the app.

Indirect jobs include logistics staff for managing test equipment and office supplies, server maintenance technicians, suppliers and service providers for software, cloud services, IT equipment, and office supplies, as well as consultants and trainers for continuous training and advice in development, security, UX/UI, and other specialized areas. Specialized handling services for transporting and setting up heavy or specialized equipment are also included.

In conclusion, developing this app requires a diverse team with both technical and non-technical skills, with flexibility for freelance or office work. Efficient workforce management, along with the option for handling services when needed, will ensure the project runs smoothly and leads to a high-quality app launch.

Fourth Section: Plan and Organization

3. Key partners

Some partners in Algeria for the development of the mobile application

To develop a mobile application in Algeria with advanced features it's essential to collaborate with strategic local partners. Below is a list of potential key partners in Algeria:

- **Technology providers and cloud platforms**

- **Mobilis, Djezzy, Ooredoo Algeria:**
  - **Role:** Provide telecommunications services and local cloud solutions.
  - **Support:** Offer connectivity solutions, data hosting, and local technical support.
- **Local tech startups and companies:**
  - **Role:** Provide software development, cloud computing services, and security solutions.

- **Ministry of commerce and export promotion**

- **Role:** Support the promotion of the app as a tool for safety and transparency in the food sector, facilitating the export of food products.
- **Support:** Help integrate the app into quality control and food compliance practices to facilitate international trade relations.

Adding the Ministry of Commerce and Export Promotion as a strategic partner brings crucial support in navigating trade regulations, accessing grant and promotion programs, and aiding the app's growth in the Algerian market.

- **Health institutions and organizations**

- **National institute of public health (INSP):**
  - **Role:** Provide reliable data on food additives and their health effects in Algeria.
  - **Support:** Scientific validation of data used in the app and assistance with awareness and communication efforts.
- **National toxicology center :**
  - **Role:** Collaborate on research related to food additives and their health effects.

- **Support:** Provide scientific expertise and research assistance.

➢ **Non-governmental organizations (NGOs)**

- **Association for consumer protection (APOCE):**
  - **Role:** Advocate for consumer interests and promote safe food practices.
  - **Support:** Collaborate in testing the app, providing user feedback, and raising public awareness.
- **Public health NGOs in Algeria:**
  - **Role:** Promote public health and food safety.
  - **Support:** Lead awareness campaigns and educate the public on the dangers of food additives.

➢ **Financial institutions and investors**

- **Algerian banks:**
  - **Examples:** BEA (Banque Extérieure d'Algérie), BNA (Banque Nationale d'Algérie).
  - **Role:** Provide loans and credit lines to support development phases.
  - **Support:** Offer startup support programs.
- **Venture capital investors in Algeria:**
  - **Examples:** Algerian Startup Initiative, local investment funds.
  - **Role:** Provide funding for the development and launch of the app.

➢ **Development and technical support partners**

- **Local consultants and trainers:**
  - **Role:** Provide specialized training for the development team and app users.
  - **Support:** Conduct training sessions, provide technical documentation, and offer ongoing support.

➢ **Food processing plants and factories**

  - **Role:** Provide data on product composition, collaborate on additive detection, and support food safety initiatives.

- **Support:** Integrate app functionalities into quality control and inventory management processes.

Fifth Section

Financial Plan

Fifth Section: Financial Plan

Project costs and required investments

Total costs

Category	Amount (DZD)
Prototype Development	47,000
Final App Development	1,150,000
Office Equipment	500,000
IT Equipment, Software, and Website	2,500,000
Photographic Equipment	400,000
Signage and Other Advertising Materials	700,000
Outdoor and Safety Equipment	300,000
Initial Total	**5,597,000 DZD**

Recurring annual costs

Category	Amount (DZD)
Payroll	7,000,000/year
Office Rent	1,200,000/year
External Expenses	1,000,000/year
Total Annual Recurring Costs	**9,200,000 DZD**

Project phase / cost category breakdown

Phase / Category	Detailed Description		Funding Source	Repayment Terms
Phase 1: Initial Development				
Prototype Development	Development of the prototype	47,000	Investors	Equity, no direct repayment
Final Application Development	Development of final app	1,150,000	Investors	Equity, no direct repayment
Acquisition of Tools and Licenses	Software, licenses, hardware	2,500,000	Bank Loan	Monthly repayments over 3 years, 5% interest
Office Equipment	Furniture, office supplies	500,000	Bank Loan	Monthly repayments over 3 years, 5% interest
Photographic Equipment	Cameras, lighting, etc.	400,000	Bank Loan	Monthly repayments over 3 years, 5% interest
Signage and Advertising Materials	Company signage, brochures	700,000	Crowdfunding	No repayment, funds obtained
Safety and Hiking Equipment	Outdoor gear for campaigns	300,000	Public Grants	No repayment, funds obtained

Fifth Section: Financial Plan

Phase 2: Initial Operations				
Payroll	Salaries for staff	7,000,000/year	Investors	Equity, no direct repayment
Office Rent	Rent for business premises	1,200,000/year	Bank Loan	Monthly repayments over 3 years, 5% interest
External Expenses	Utilities, insurance, etc.	1,000,000/year	Bank Loan	Monthly repayments over 3 years, 5% interest

This structured funding approach balances equity investment, bank loans, crowdfunding, and public grants, aligning repayment plans with the nature of each expense.

Monthly operational costs (in DZD)

Operational Expense Category	Estimated Monthly Cost (USD)	Cost in DZD (1 USD = 136 DZD)
Server Hosting (Cloud Services)	$500 - $2,000	68,000 - 272,000 DZD
Customer Support Team	$2,000 - $5,000	272,000 - 680,000 DZD
App Maintenance & Updates	$1,500 - $4,000	204,000 - 544,000 DZD
Marketing & Advertising	$2,000 - $10,000	272,000 - 1,360,000 DZD
Food Database Updates	$500 - $2,000	68,000 - 272,000 DZD
Total Monthly Expenses	**$6,500 - $23,000**	**884,000 - 3,128,000 DZD**

Projected revenue - optimistic scenario

First year (2025)

Month	Projected Subscribers	Monthly Revenue (DZD)
January	1,000	5,000,000
February	1,200	6,000,000
March	1,500	7,500,000
April	2,000	10,000,000
May	2,500	12,500,000
June	3,000	15,000,000
July	3,500	17,500,000
August	4,000	20,000,000
September	5,000	25,000,000
October	6,000	30,000,000
November	7,500	37,500,000
December	10,000	50,000,000

- **Total revenue for 2025:** 236,000,000 DZD

Second year (2026)

Month	Projected Subscribers	Monthly Revenue (DZD)
January	11,000	55,000,000
February	12,000	60,000,000
March	13,000	65,000,000
April	14,000	70,000,000
May	15,000	75,000,000
June	16,000	80,000,000
July	17,000	85,000,000
August	18,000	90,000,000
September	19,000	95,000,000
October	20,000	100,000,000
November	21,000	105,000,000
December	22,000	110,000,000

- **Total revenue for 2026:** 980,000,000 DZD

Assumption:

- **Subscription Fee:** 5,000 DZD per user per month

The revenue projections for the first two years show significant growth based on increasing subscriber numbers each month.

Projected revenue - pessimistic scenario

First year (2025)

Month	Projected Subscribers	Monthly Revenue (DZD)
January	75	375,000
February	100	500,000
March	50	250,000
April	0	0
May	90	450,000
June	100	500,000
July	120	600,000
August	150	750,000
September	180	900,000
October	200	1,000,000
November	220	1,100,000
December	250	1,250,000

- **Total revenue for 2025 :** 7,675,000 DZD

Second year (2026)

Month	Projected Subscribers	Monthly Revenue (DZD)
January	300	1,500,000
February	160	800,000
March	120	600,000
April	80	400,000
May	220	1,100,000
June	550	2,750,000
July	300	1,500,000
August	650	3,250,000
September	150	750,000
October	120	600,000
November	180	900,000
December	70	350000

- **Total revenue for 2026:** 13150000 DZD

The pessimistic scenario shows slower growth and occasional declines, with fluctuations in subscriber numbers.

Revenue projections

Freemium model assumptions (with $10/month subscription):

- **Free users**: 90% of total users.
- **Premium users**: 10% of total users.
- **Premium subscription fee**: $10/month.

Year	Total Users	Free Users (90%)	Premium Users (10%)	Revenue from Premium Users (USD)
Year 1	50,000	45,000	5,000	$50,000/month = $600,000/year
Year 2	150,000	135,000	15,000	$150,000/month = $1,800,000/year
Year 3	300,000	270,000	30,000	$300,000/month = $3,600,000/year

Advertising and affiliate marketing revenue:

- **Assumed revenue from ads/affiliate**: $1 per user/month (free users only).

Year	Free Users	Ad Revenue/User (USD)	Total Ad Revenue (USD)
Year 1	45,000	$1	$45,000/month = $540,000/year
Year 2	135,000	$1	$135,000/month = $1,620,000/year
Year 3	270,000	$1	$270,000/month = $3,240,000/year

4. Total revenue projections

Year	Revenue from Premium (USD)	Revenue from Ads/ (USD)	Total Revenue (USD)
Year 1	$600,000	$540,000	**$1,140,000**
Year 2	$1,800,000	$1,620,000	**$3,420,000**
Year 3	$3,600,000	$3,240,000	**$6,840,000**

5. Profitability analysis

To calculate your profits, subtract the estimated monthly expenses from the projected revenue:

Year	Revenue (USD)	Annual Expenses (USD)	Profit (USD)
Year 1	$1,140,000	$78,000 - $276,000	**$864,000 - $1,062,000**
Year 2	$3,420,000	$78,000 - $276,000	**$3,144,000 - $3,342,000**
Year 3	$6,840,000	$78,000 - $276,000	**$6,564,000 - $6,762,000**

Sixth section

Prototype

Sixth section: Prototype

4.1 The process of service delivery:

Our project is to provide services and services in steps that are not complicated because it is an application characterized by ease of use as follows:

The installation of the application via Google store/ Play-store.

Create an account with email and password.

Connect to the application

Visit the different sections related to our services

Once confirmed, contact support and pay the amount.

4.2 The experimental prototype of the application (see video link)