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للبحوث العلمية

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Baghdad College High School



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Baghdad College High School/Adhamiya

In cooperation with

Al-Rafidain University



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Designing and development of the virtual management of the examination committee in examination centers, schools and universities

Researcher's Name: Ahmed Ibrahim Zamil

Introduction

Exams are a fundamental pillar of the academic evaluation, the integrity of the examination process directly relies on the safe handling of Exam records, from the moment it is received from the student and until the process is complete, any vulnerability that occurs during the process such as the loss or tampering of an exam paper will certainly lead to sever damage to the integrity of the educational institution and cause harm to the student.

although there has been great advancement in the digitization of academic institutions, but there are parts of the academic process that is still depend on paper records and manual signatures, which makes it an unsafe system, additionally, it imposes a difficulty in tracking examination papers and makes the work in these committees difficult, this paper suggests a complete digital solution and explains the challenges that the field is facing and its solutions, and discuss the instillation of infrastructure within minimal budgets

Research Idea

This paper aims to design and develop a comprehensive digital administrative system to track the exam papers in the academic institutions, it replaces the traditional physical paper records with a new system that depends on technologies such as QR Codes and cloud computing, and it strives to solve tampering, record loss and difficulty tracking problems by using smartphone applications and websites to facilitate its usage, in addition, the system facilitates post-examination committee procedures, such as calculating percentages, recording absences, determining total numbers, and other related tasks. It also aims to achieve an effective balance between security and ease of access to information.



Research Summary

This project enables examination centers, teachers working in examination committees, and administrators to work within an interactive digital environment without relying on traditional methods, thereby simplifying the workflow and improving accuracy.

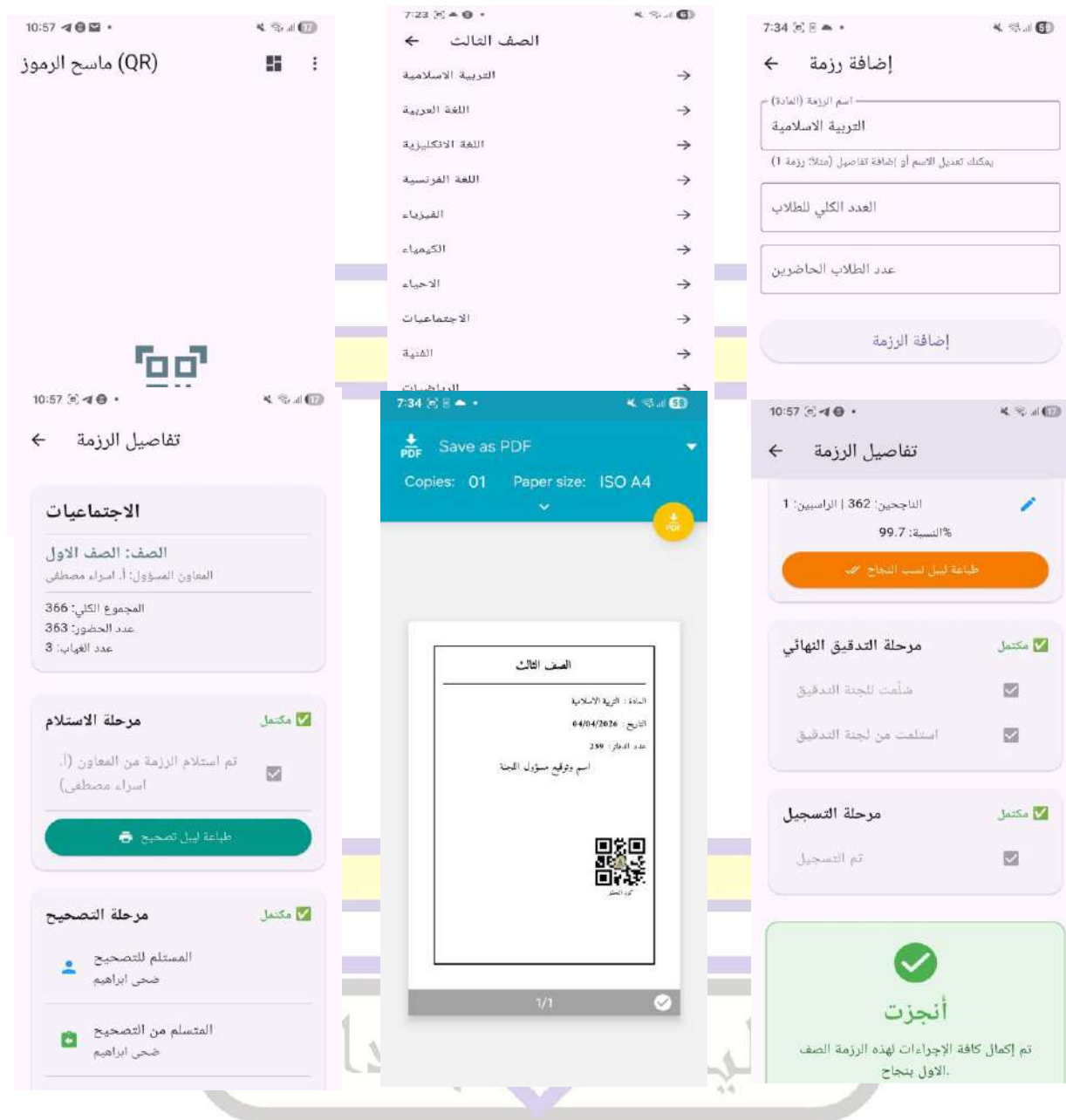
The research also found that paper-based systems suffer from significant weaknesses in terms of security and difficulties in accessing and managing data. In contrast, the proposed digital system demonstrated a high level of accuracy and transparency in tracking examination packages. It also contributed to reducing human errors resulting from manual data entry and provided real-time reports and statistics to support decision-making. Accordingly, the system demonstrated its effectiveness in improving the overall efficiency of examination management.

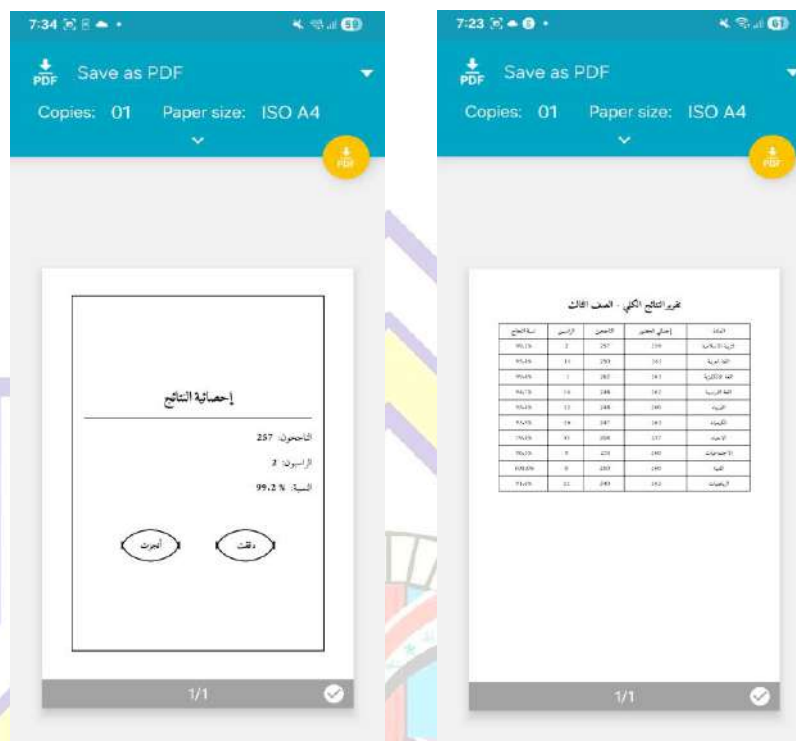
Research Importance

1. Improving administrative efficiency by automating examination committee procedures and reducing reliance on paper-based transactions, thereby saving time and effort and positively contributing to the quality of institutional performance.
2. Reducing human errors in data entry and management using an accurate and well-organized electronic system.
3. Enhancing transparency and credibility in examination management by electronically documenting procedures and enabling the tracking of all operations.
4. Accelerating the processing of results and generating statistical reports on pass and failure rates, as well as academic analysis, to support decision-making.
5. Providing a secure and centralized database that facilitates the storage and retrieval of information about students, subjects, and results at any time.
6. Supporting digital transformation in educational institutions in line with technological advancements in modern administration and electronic educational systems.
7. Enabling integration with other educational systems, such as learning management systems and electronic platforms, thereby creating an integrated educational environment.
8. Reducing operational costs associated with printing and manual archiving while improving the utilization of human resources.



Images Illustrating the Stages of Examination Papers Tracking





لوحة تحكم الرزم الشاملة

مؤشر إنجاز المركز

100.0%

تم إكمال 364 من أصل 364 ملفاً عمل

المادة / الصف	الصف الأول	الصف الثاني	الصف الثالث	الصف الرابع	الصف الخامس	الصف السادس
الاجتماعيات	الاجتماعيات مكتمل نهائياً	الاجتماعيات مكتمل نهائياً	الاجتماعيات مكتمل نهائياً	-	-	-
الاحياء	الاحياء مكتمل نهائياً	الاحياء مكتمل نهائياً	الاحياء مكتمل نهائياً	الاحياء مكتمل نهائياً	الاحياء مكتمل نهائياً	الاحياء مكتمل نهائياً
التربية الاخلاقية	التربية الاخلاقية مكتمل نهائياً	التربية الاخلاقية مكتمل نهائياً	-	-	-	-
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الحاسوب	الحاسوب مكتمل نهائياً	الحاسوب مكتمل نهائياً	-	الحاسوب مكتمل نهائياً	الحاسوب مكتمل نهائياً	-
الرياضيات	الرياضيات مكتمل نهائياً	الرياضيات مكتمل نهائياً	الرياضيات مكتمل نهائياً	الرياضيات مكتمل نهائياً	الرياضيات مكتمل نهائياً	الرياضيات مكتمل نهائياً
الفنية	الفنية مكتمل نهائياً	الفنية مكتمل نهائياً	الفنية مكتمل نهائياً	الفنية مكتمل نهائياً	الفنية مكتمل نهائياً	الفنية مكتمل نهائياً

Image illustrating the main dashboard



Design and Development of an Electronic Application Serving as a Health Guide for All Age Groups, Named “Dr. Lettuce”

Researcher’s Name: AlHassan Bilal Safaa

Introduction

Diet, in its comprehensive sense, is considered a cornerstone in shaping the quality of human life. It is not merely a temporary means of losing weight or restricting food intake; rather, it is an integrated **“way of life”** that determines how the body functions and responds to the stresses of daily life. Following a balanced and healthy diet is an effective means of providing individuals with a genuine sense of strength and vitality while regulating vital bodily functions in a way that promotes greater energy and mental clarity, ultimately contributing positively to productivity and self-confidence.

However, this same system can also be a **“double-edged sword.”** While it can serve as a means of building and improving health, it may become a tool that causes lasting changes to the body’s structure if implemented incorrectly or randomly. Pursuing extreme diets without scientific awareness not only depletes the body’s energy, but may also have negative psychological consequences. Attention to health can develop into persistent obsession and anxiety, creating an internal conflict with food rather than allowing individuals to enjoy its benefits.

Research Idea

The central vision of this research revolves around creating a digital platform that acts as a safeguard against the disorder and misinformation prevalent in the field of nutrition, particularly the increasing tendency toward dangerous **“quick fixes.”** The application aims to provide scientifically organized dietary guidance that helps prevent functional imbalances in the body, whether the user’s goal is weight loss, weight gain, or improving overall appearance. It takes into consideration the physiological differences among various age groups to ensure a safe and sustainable health journey.



The application functions as an intelligent guide designed to help users avoid serious dietary mistakes and protect them from the negative psychological and physical consequences that may result from the reckless use of inadequately studied medications or substances.

Research Summary

This research is based on two fundamental pillars: **the first is theoretical**, aiming to protect society from the risks of random dietary practices and excessive reliance on harmful chemical medications; **the second is practical**, involving the development of a highly user-friendly smart application that serves as a comprehensive health guide for all age groups.

From a practical perspective, the application functions as a “**global food encyclopedia**” containing a large database of food types from different cultures and countries, making it suitable for users wherever they are. To ensure accurate dietary organization, the application is equipped with **smart camera technology** capable of analyzing meals and estimating their nutritional value instantly, along with a **smart reminder system** that helps users adhere to their dietary and medication schedules, when applicable, with minimal effort.

The strength of the application is reflected in its **intelligent user interface**, which has been designed to combine professionalism with simplicity, ensuring a smooth user experience that allows both adolescents and older adults to use the application without technical complexity.

Instead of resorting to chemical solutions that may be rejected by the body and potentially cause adverse effects, the application provides a digital alternative based on “**conscious dietary organization**” that respects the body’s well-being as a valuable responsibility. This approach aims to help users achieve their desired outcomes, whether weight gain or weight loss, while promoting physical and psychological health and long-term sustainability.

Research Importance

The importance of this research lies in its response to the contemporary health challenges faced by society. Its significance can be summarized in the following key points:

First: Combating Random Dietary Practices and Dangerous Chemical Solutions

Second: Cultural and Age Inclusivity

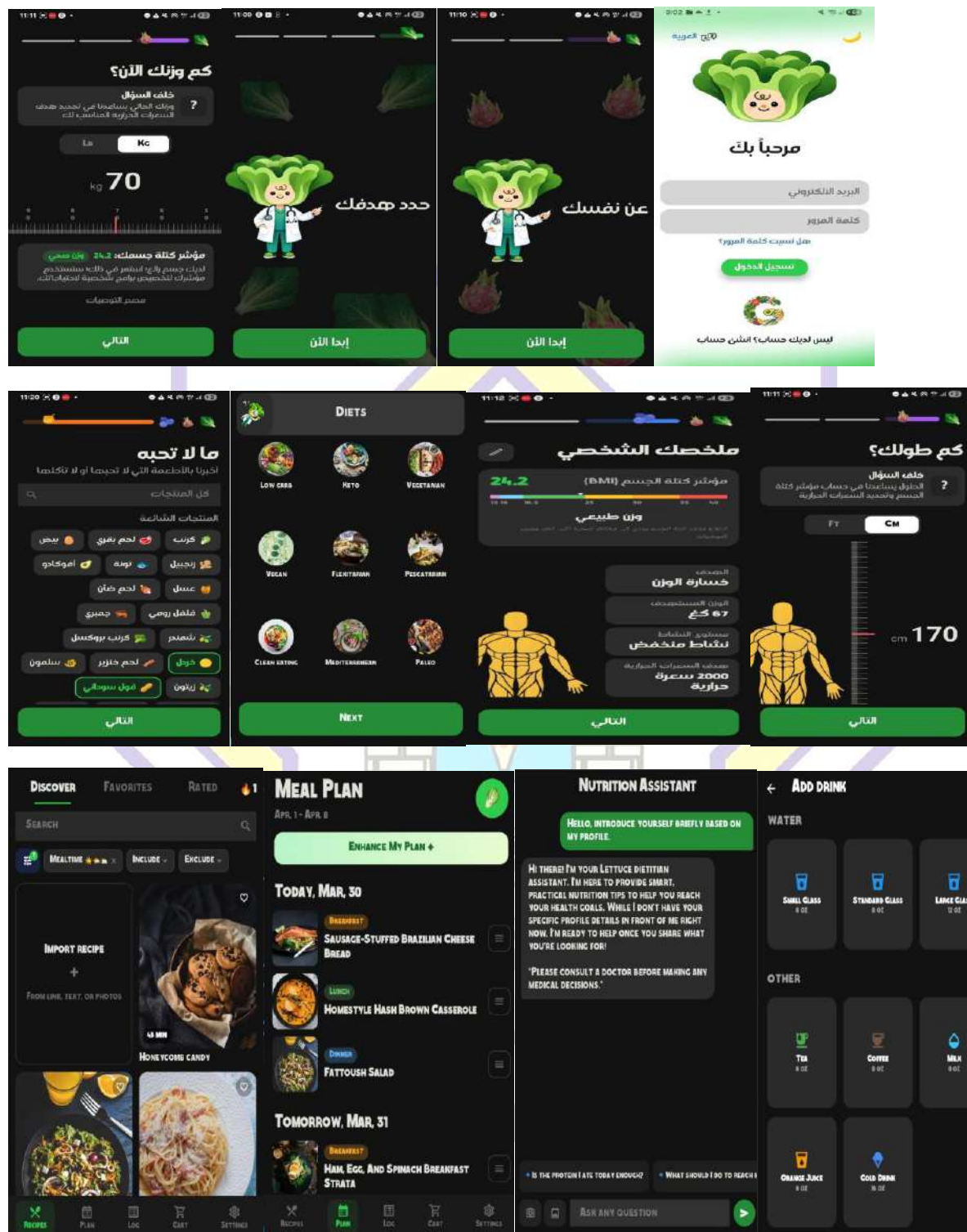
Third: Bridging the Gap Between Technology and Practical Application

Fourth: Protecting Physical Well-Being and Promoting Psychological Health



Sixth Annual Scientific Research Conferens

BCHS





Design of a Traffic Police Control Room Powered by Clean Energy

Researcher's name: Ahmed Dhia Fadhil

Introduction

The world today is witnessing an increasing shift toward the use of **clean energy** and smart technologies in various fields of life, due to their important role in reducing environmental pollution and improving work efficiency. Traffic management is one of the vital sectors that requires a suitable and safe working environment for traffic police officers, enabling them to perform their duties efficiently under various climatic conditions.

The urgent need to provide a humane working environment that protects the **“watchful eye of the nation”** from potential risks was the main motivation behind this research, in addition to improving the management of congested intersections through a technologically advanced and modern approach.

This research presents a model of a **“Smart Sustainable Traffic Control Room”** that is not merely a shelter from the sun, but rather an integrated operational unit powered by clean solar energy.

Research Idea

The idea of this research is based on an advanced engineering and technological design for traffic police control rooms with an area of approximately **2 square meters**, centered on the concept of **energy independence**.

The room is powered by **solar energy**, with its roof equipped with advanced, high-efficiency solar panels to ensure continuous energy generation. The concept goes beyond simply providing cooling; it aims to create a **“technological ecosystem”** within the room. The room is equipped with advanced **lithium batteries** characterized by a long service life and the ability to withstand high temperatures while maintaining safe operation. This system powers an air-conditioning unit, improving efficiency and reducing electricity consumption.



In addition, the traffic officer is provided with a **control device** that allows them to change the timing of traffic lights from inside the room when sudden traffic congestion occurs or when emergency convoys need to pass. This helps protect the officer's physical safety and health and reduces the need for the officer to stand directly in the intersection. The solar panels store energy in dedicated batteries while sunlight is available, ensuring continued operation during periods of reduced sunlight. The system also includes an **automatic traffic management device** to assist in controlling the flow of vehicles at congested intersections, in addition to an **audio alarm system** for providing warnings in the event of violations or emergencies.

Research Summary

This project aims to **design and manufacture an advanced control cabin for traffic police powered by solar energy**, enabling traffic officers to **control traffic signals electronically** and monitor traffic through **dedicated surveillance cameras** displayed on a screen inside the cabin. The system provides a safe and comfortable working environment and helps improve traffic flow and reduce congestion and accidents by enabling rapid decision-making based on direct monitoring of the road. The cabin relies on a **clean solar energy system** to operate the traffic signal control devices, cameras, display screen, communication equipment, and lighting.

This reduces dependence on the electrical grid and helps ensure continuous operation even in the event of a power outage. The project also aligns with the trend toward **smart cities** and the use of modern technology to develop public services and infrastructure.

Estimated Cost of Implementing the Cabin

First: Solar Energy System

- Solar panel (300–400 watts): **\$150–\$220**
- Energy storage battery (100 Ah): **\$120–\$180**
- Charge controller: **\$30–\$60**
- Power inverter: **\$60–\$90**

Estimated total for the solar energy system: \$360–\$550



Second: Cabin Construction — Structure

- Metal or aluminum structure with integrated thermal insulation: **\$400–\$500**

Third: Control and Monitoring Equipment

- Integrated surveillance cameras: **\$90–\$150**
- Display screen: **\$80–\$120**
- Traffic signal controller: **\$120–\$180**
- Internal LED lighting + ventilation fan: **\$40–\$60**

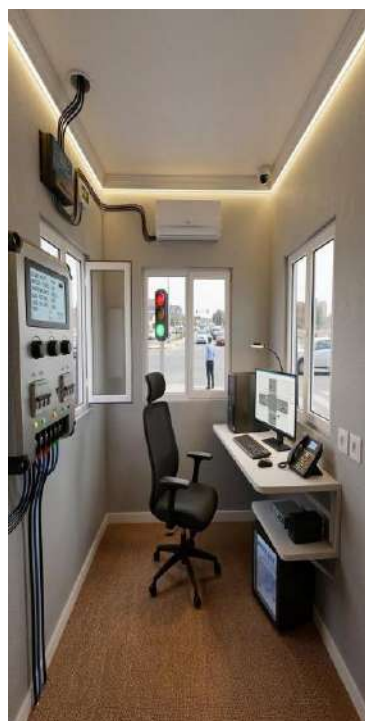
Estimated total for equipment: \$330–\$510

Estimated Total Project Cost Approximately \$1,090–\$1,550, subject to increase or decrease depending on the quality of the materials and equipment available in the market. The project has a **moderate cost** compared with the benefits it provides, including improved traffic management, reduced consumption of conventional energy, provision of a suitable working environment for traffic police officers, and the possibility of future development through the addition of smart technologies such as traffic counters or connection to a central control center.

Research Importance

This project aims to achieve several objectives:

- **Organizing traffic movement** at congested intersections and roads, as well as recording traffic accidents, theft incidents, and other incidents.
- **Reducing traffic violations** through continuous monitoring and accurate documentation.
- **Sending recorded data** to the Traffic Control Center for follow-up and appropriate legal action.
- **Improving the working environment of traffic police officers**, helping them perform their duties with greater efficiency and concentration.
- **Relying on solar energy** as a clean and relatively sustainable energy source, thereby reducing the consumption of conventional electrical energy.



الجانِب الأيمن
Right Side Elevation



Front-Right Elevation



Back-Left Elevation



Top-Down Plan



Detail: Daytime

Detail: Nighttime

INTEGRATED SMART TRAFFIC KIOSK - MULTI-VIEW PROTOTYPE





Development and Programming of an Artificial Intelligence Tool for Analyzing Mathematical and Physics Mistakes

Researcher's name: Abdul Rahman Mohammed Abood

Introduction

Learning from mistakes is one of the pillars of sound scientific thinking. Mistakes should not be seen as failures or deficiencies, but rather as opportunities for intellectual growth and deeper understanding. Throughout history, scientists and educators have recognized that mastery inevitably requires confronting mistakes, analyzing them, and learning from them. Temporary failure is not the end of the learning process, but rather the beginning of genuine understanding.

However, educational systems, in most cases, do not provide students with sufficient mechanisms to understand their mistakes and their underlying cognitive causes. Students are often simply given a red mark indicating that their answer is incorrect, without receiving a thorough explanation of what went wrong. This issue is even more significant in mathematics, a cumulative subject in which misunderstanding a particular skill or concept can lead to difficulties with subsequent concepts that build upon it.

In light of this issue, and inspired by my own experience with this challenge, I present this research, which introduces an application called “Why Did I Get It Wrong,” an AI-powered web platform designed to address this problem.

Research Idea

The idea behind this research was inspired by a simple question: “What if I knew what went wrong?” Not merely knowing the correct answer, but also understanding what went wrong and why it happened in my detailed solution.

I formulated the following research question, which became the backbone of this research: What if a student could know exactly what went wrong in their detailed solution? Not merely knowing the correct answer, but understanding what went wrong and why.



This question motivated me to design and develop the “Why Did I Get It Wrong” application.

Based on this idea, I designed and developed a web-based platform that aims to function as an intelligent personal tutor, available 24/7 and free of charge to students. The platform receives three primary inputs:

1. The mathematical question.
2. The student's incorrect answer.
3. The correct answer (optional).

The application then uses a large language model to produce a comprehensive analysis that includes:

1. Identifying the type of error, such as computational, conceptual, or sign-related errors, or the incorrect application of a rule or formula.
2. Identifying the specific point in the solution where the error occurred.
3. Analyzing why the solution is mathematically incorrect.
4. Showing how the problem should be solved step by step and providing justification for the solution.
5. Identifying the mathematical concept that the student should review.
6. Providing three similar practice exercises, along with the ability to check the answers.

The key feature of the application is that it does not simply provide the correct answer, as a calculator application would. Instead, it analyzes the student's specific error and explains it in detail. The application also covers 12 mathematical subjects and is available in both Arabic and English. It is free of charge and does not require registration or installation.

تمارين للتدريب

1. $1.1234 * 567$

جوابك:

تحقق

2. $4.321 * 876$

جوابك:

تحقق

3. $6.543 * 219$

جوابك:

تحقق

التمرين الأول

لحل هذه المسألة يمكننا استخدام خاصية التوزيع. لدينا: $1.1234 * 567$

نحسب: $1.1234 * 567 = 637.958$

الجواب: 637.958

التمرين الثاني

لحل هذه المسألة يمكننا استخدام خاصية التوزيع. لدينا: $4.321 * 876$

نحسب: $4.321 * 876 = 3783.196$

الجواب: 3783.196

التمرين الثالث

لحل هذه المسألة يمكننا استخدام خاصية التوزيع. لدينا: $6.543 * 219$

نحسب: $6.543 * 219 = 1432.917$

الجواب: 1432.917



Research Summary

This research is presented from three dimensions: Theoretical, Practical, and Application.

Theoretical Dimension

This research was informed by the role of feedback in learning and by cognitive error analysis, which emphasize the importance of understanding the nature and causes of errors rather than simply identifying the correct answer.

These concepts were implemented using artificial intelligence techniques and prompt engineering to translate them into a web-based application.

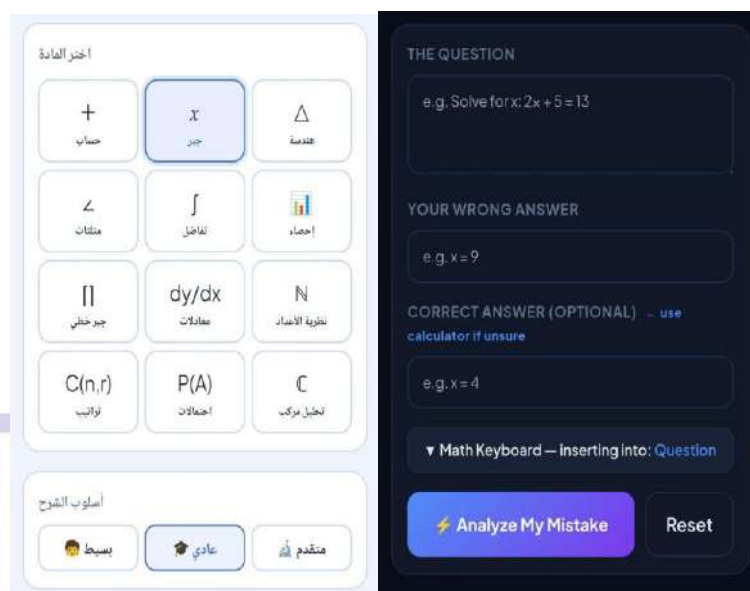
Practical Dimension

The web interface of the application was built using React and Tailwind CSS, and it was connected to the Llama 3.3 70B language model through the Groq platform. The Math.js library was also used to ensure that mathematical calculations are performed correctly and independently of the language model. In addition, the application includes a dedicated mathematical keyboard and calculator.

Application Dimension

The application was deployed free of charge on the Netlify platform and demonstrated its ability to analyze mathematical errors within seconds and provide academically sound responses in both Arabic and English.

Students who tried the application reported positive experiences with the detailed analysis and personalized feedback they received.



Research Importance

This research addresses an important real-world problem that students face on a daily basis: learning from their mistakes. By providing students with the opportunity to understand what went wrong in their solutions, the application enables them to receive immediate feedback without having to wait for a grader or pay for private tutoring.

This research also contributes to the application of academic principles related to learning from mistakes through an AI-powered educational tool.

Target Audience

- Middle and high school students who often struggle with mathematics.
- College students who are studying mathematics-intensive disciplines.
- Professors who want to provide their students with a valuable educational resource.
- Anyone who wants to achieve academic mastery rather than rely on rote learning.



“Promising Future” Platform To support new applicants to Schools for the Gifted and Baghdad Colleges

Researcher’s name: Montader Walhan Zamil

Introduction

The "Promising Future Platform" project aims to support students applying to Schools for the Gifted and Baghdad Colleges (sixth-grade primary students) by providing an integrated e-learning environment that helps them optimally prepare for competitive tests. Built upon my previous personal experience in qualifying for Baghdad College High School, the platform provides organized scientific content, practice tests, and educational guidance that contribute to developing students' skills and enhancing their chances of admission—completely free of charge for all students. This project comes in response to the need for modern educational tools that keep pace with digital development, and provide accessible support to all students in a flexible and easy way, contributing to achieving the principle of equal opportunity and building a scientifically distinguished generation.

The platform relies on an innovative and interactive teaching method that combines accurate information and practical experience to facilitate learning in a fast, fun, and effective way. Our goal is for the student to be prepared, confident.

Research Idea

The idea of the project is to create a platform designed to support sixth-grade primary students and enable them to enter Schools for the Gifted and Baghdad College high schools with complete confidence. It raises the student's IQ rate and builds their mental and intellectual experiences in an interactive and fun way, while providing simplified and organized content that allows them to explore terms and skills step by step and understand them deeply. The platform enhances critical thinking, the student's IQ rate, and their mental and intellectual skills, and keeps pace with modern educational developments to make learning a safe and effective experience, enabling the student to excel and innovate with confidence and creativity.



Research Summary

The "Promising Future" project represents an advanced step in facilitating sixth-grade primary students' access to Schools for the Gifted and Baghdad College High School, as it merges theoretical and applied learning in a modern and interactive way. The research enhances critical thinking skills and independence in the student, and provides a safe and smart educational environment that makes learning fun and effective. Thanks to this project, the student becomes more prepared to face the IQ test with confidence and focus.

Research Importance

The "Promising Future" project relies on our previous experience and our experiments with the sixth grade of primary school, where we relied on the questions we reviewed in the entrance tests of Schools for the Gifted and Baghdad College High School, and the vocabulary and concepts that need deep understanding. The project provides an integrated educational environment that helps the student absorb information quickly, enhance thinking skills, raise the student's IQ rate, and develop their abilities to solve IQ tests easily through a free platform accessible to everyone. It has become possible to effectively qualify the student to prepare for scientific tests and competitions, while presenting the content in an interactive and fun way that makes learning more attractive and motivating for the student to excel and innovate. The research also contributes to developing innovative educational methods based on real practical experiences, so that the platform serves as a model that can be applied and expanded in the future.





Design of a Solar-Powered Plant for Waste Recycling and Methane Production

Researcher's name: Osama Zaid Abdulsalam

Introduction

Waste management is one of the most significant environmental challenges facing the world today due to the continuous increase in population and urban and industrial expansion. The accumulation of waste has negative effects on the environment and human health, such as air, water, and soil pollution and the spread of diseases. Therefore, there is a growing need to develop scientific and environmental solutions to address this problem in an effective and sustainable manner.

Methane is also one of the important gases used for energy production. It is a simple natural gas (CH_4) produced through the decomposition of organic materials in a process known as anaerobic digestion. Methane is an important energy source used to generate electricity and heat. It is relatively cleaner than conventional fuels and can be integrated with solar energy systems as part of renewable energy systems to improve efficiency and sustainability.

Research Idea

The research focuses on designing a plant that relies on solar energy, a renewable source derived from sunlight and used to generate electricity and heat.

The plant aims to process organic waste and convert it into energy through direct combustion.

This project contributes to reducing the amount of waste present in the community and utilizing it as a useful energy resource.

Regarding the estimated cost of establishing a waste-conversion plant, it may range from approximately \$30,000 to \$65,000, depending on the capacity and technologies used. In addition, one ton of solid waste can reportedly produce approximately 500–700 kilowatt-hours of electricity.

Research Summary

This study addresses the concept of utilizing waste and converting it into a useful energy source rather than treating it solely as an environmental burden, while relying on solar energy as a clean and sustainable source.

The project is based on establishing a plant for producing methane gas and converting it into usable energy, thereby contributing to pollution reduction and providing alternative energy sources.



Estimated Cost of the Plant

Note: The plant is intended to be small and simple

First: Solar Energy System

- Solar panels (5–10 kW): \$4,000–\$8,000
- Energy storage batteries (optional, depending on nighttime operation): \$2,000–\$5,000
- Charge controller + inverters: \$1,500–\$3,000
- Wiring and installation: \$1,000–\$2,000

Total: \$8,500–\$18,000

Second: Methane Production System — Anaerobic Digester

- Digestion tank (Digester): \$5,000–\$12,000
- Waste mixing and feeding system: \$2,000–\$5,000
- Basic heating and control system: \$1,500–\$3,000
- Gas storage tank and piping: \$2,000–\$4,000

Total: \$10,500–\$24,000



Third: Infrastructure and Construction

- Plant construction (structure, flooring, insulation): \$5,000–\$10,000
- Safety and ventilation systems: \$1,000–\$3,000

Total: \$6,000–\$13,000

Fourth: Equipment and Monitoring

- Sensors (temperature, pressure, and gas): \$1,000–\$2,500
- Control and monitoring system: \$1,500–\$3,000
- Pumps and mixers: \$2,000–\$4,000

Total: \$4,500–\$9,500

Estimated Total Cost Approximately \$30,000–\$65,000 for a small-to-medium-sized plant that can be expanded in the future.

Research Importance

The importance of this research lies in several key areas:

1. Highlighting the waste problem and its impact on the environment.
2. Identifying modern methods for waste disposal in a useful and safe manner.
3. Demonstrating the role of waste-to-energy conversion in producing energy and reducing dependence on conventional fuels.
4. Raising environmental awareness of the importance of recycling and utilizing waste.
5. Contributing to the promotion of sustainable development concepts.



Design and Development of a Website to Facilitate Teachers' Visits to the Staffing Department at the Rusafa Directorate of Education /1

Researcher's name: Mohammed Marwan Fadhil

Introduction

Modern human resource management is a vital foundation for the stability of educational institutions; however, traditional methods based on paper-based procedures are no longer able to keep pace with developments, leading to problems in the allocation of teaching staff and a lack of administrative efficiency. The research problem lies in the administrative inefficiency that accompanies staff transfer and placement processes, and the resulting waste of time and imbalance in areas of specialisation. Consequently, this research proposes an integrated electronic application that utilises data analysis to link staff members with decision-makers, with the aim of achieving a fair and efficient distribution of staff, whilst adopting a pilot model at the First Rusafa Education Directorate as a starting point towards digital transformation in educational administration.

Research Idea

The research concept centres on the design of a platform (Application + Web Portal) operating on a 'single-track' system. The process begins with the staff member, who has a secure personal account, and who completes an 'electronic form' containing their sensitive data: (name, marital status – which affects selection points – specific specialisation such as 'Master's in Analytical Chemistry' to ensure they are placed in the appropriate role, and the date of first employment to determine seniority). The innovative feature here is the integration of the application with a real-time database of schools with vacancies, so that staff members are not permitted to apply for a school that is already fully staffed. After submission, the EMIS officer receives a notification for verification; upon approval, the 'first digital stamp' is applied.



It is then automatically forwarded to a Ministry official and subsequently to the Director-General for final approval, the application of the ‘second stamp’ and an electronic signature, after which the application is immediately converted into a printable ‘administrative order’. The user can track the progress of their application via the top field on the user page.

The image displays a web-based administrative application system. The top section shows a user registration form with fields for name, gender, date of birth, profession, and school name. Below these are fields for the applicant's address and contact information. A green button labeled 'إرسال طلب' (Send Request) is at the bottom of the form. To the right of the form is a sidebar with various sections: 'الطلبات المعلقة' (Pending Requests), 'حالة الطلب' (Request Status), 'المعلومات الشخصية' (Personal Information), 'معلومات المدرسة' (School Information), 'تواريخ المناقشة' (Discussion Dates), 'خطاب' (Letter), and 'المستند المرفق' (Attached Document). The bottom section shows a dashboard with two columns of application status tracking. Each column has a search bar and a list of applications with status indicators (red for rejected, green for approved) and a 'بحث بالاسم' (Search by Name) button. The dashboard also shows a list of applications with their status and a 'طلب نقل من ثانوية كلية بغداد باسم محمد عبدالله مهدي' (Request for transfer from Baghdad College to Baghdad College in the name of Muhammad Abdullah Al-Muhammed) with a date of 11:30AM - 2026-03-16.

Research Summary

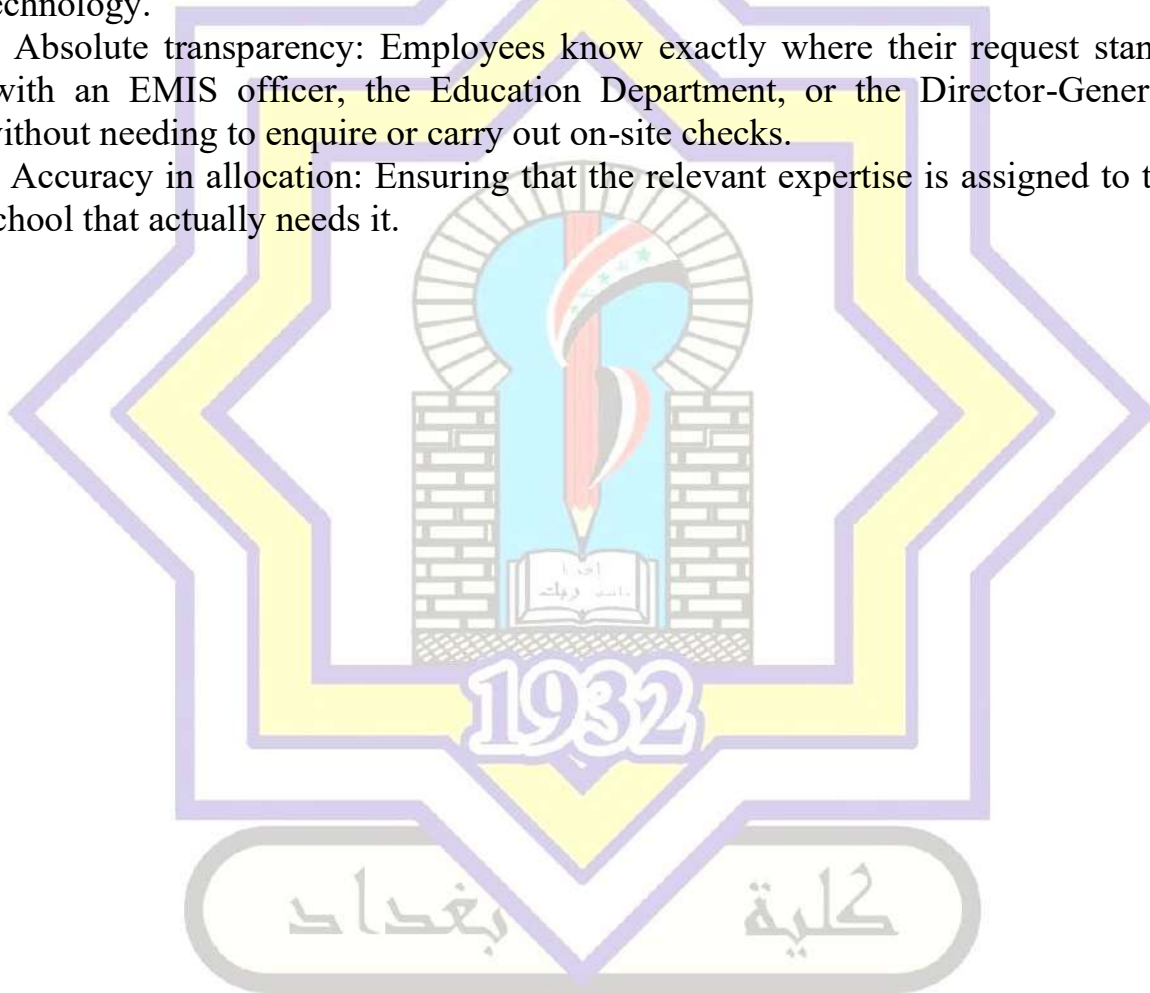
This project presents radical solutions to educational transport issues by automating traditional administrative procedures and streamlining them into just four digital steps. It has developed a software model that simulates real-world operations. Furthermore, the proposed system not only saves effort and money but also serves as a monitoring tool for the Director-General to track staff movements and prevent any manipulation or ‘bribery’ that may occur at intermediate stages, as the digital trail for each request is recorded and archived and cannot be deleted or amended once approved, thereby ensuring 100 per cent data security.



Research importance

The significance of this research is evident in several key points that affect staff welfare and the institution's reputation:

- Protection against administrative corruption: as the system is directly monitored by senior management (the Director-General), and every action is time-stamped.
- User-friendly design (UX): the use of simple interfaces suitable for employees of all age groups, thereby reducing the apprehension associated with using technology.
- Absolute transparency: Employees know exactly where their request stands (with an EMIS officer, the Education Department, or the Director-General) without needing to enquire or carry out on-site checks.
- Accuracy in allocation: Ensuring that the relevant expertise is assigned to the school that actually needs it.





Developing and Running Google TV on a PC and Running Multiple Operating Systems on a Single Apple Mac

Researcher Name: Nawaf Ahmed Mazen

Introduction

With the rapid advancement of technology and computer systems, modern devices have become capable of performing multiple, diverse functions simultaneously. Consequently, innovative concepts have emerged to develop and utilize systems beyond traditional methods.

This research presents two technical projects. The first project involves developing a method to run Google TV on a computer, effectively transforming a laptop or desktop into a fully functional smart TV. The second project focuses on running multiple operating systems—specifically macOS, Windows, and Linux—on a single device. While these projects require technical expertise—involving boot system modifications, storage partitioning, and the use of advanced tools like OpenCore and Boot Camp—they offer significant practical benefits, particularly for university students, programmers, and frequent travelers who require a single, versatile device capable of handling various tasks.

Research Idea

The research concept centers on leveraging existing hardware and enhancing its capabilities to perform additional tasks, thereby eliminating the need to purchase new devices.

In the first project, Google TV was executed on a PC despite being originally designed for smart TVs. The TV-specific version of Google TV was converted into a bootable ISO file, enabling the computer to boot and run the system seamlessly and efficiently.

The second project focuses on running multiple operating systems on a single device by configuring the boot loader and partitioning the hard drive to support macOS, Windows, and Linux simultaneously. This approach offers users exceptional flexibility, allowing a single device to accommodate studying, programming, work, and entertainment.



Research Summary

This research provides both theoretical and practical frameworks for implementing two technical projects aimed at maximizing computer utility.

The first project demonstrates the feasibility of running the Google TV system on a computer, operating as a smart TV with full support for Wi-Fi, Bluetooth, and remote control capabilities. The second project illustrates how to run three distinct operating systems on a single device utilizing advanced tools—such as OpenCore and Boot Camp—along with proper drive partitioning. These projects highlight how technical knowledge can be applied to enhance hardware capabilities and utilize devices in innovative ways, providing a cost-effective solution for users who need multiple operating systems or a combined TV and PC experience in one machine.

Research Importance

The significance of this research lies in providing practical solutions that benefit a wide range of users. The Google TV project enables a computer to function as a full-fledged television, offering a cost-effective alternative to purchasing a new TV set. It is particularly useful for frequent travelers and university students living in dormitories who wish to view content easily on their laptops. Meanwhile, the multi-OS project is essential for university students and programmers; certain software applications run exclusively on Linux, while other programs or games require Windows, and some developers require macOS. Instead of purchasing multiple separate devices, a single machine can be utilized to run all these operating systems seamlessly.



A Theoretical Concept and Analytical Study for Creating an AI Tool to Preserve the Behaviors and Thinking Patterns of Selected Individuals

Researcher's name: Abbas Karim Atiya

Introduction

In light of the rapid development of **artificial intelligence technologies**, these technologies are no longer limited to automation and data analysis. They have expanded to include the simulation of human behavior and complex patterns of thought. This has created opportunities to utilize artificial intelligence to preserve the intellectual legacy of influential individuals and transform it into interactive and analyzable digital models.

Based on this direction, this research presents a scientific attempt to provide a theoretical concept and systematic analysis for creating an artificial intelligence tool capable of preserving the behaviors and thinking patterns of important individuals. This would be achieved by analyzing their intellectual and behavioral data and developing a model that simulates their approach to decision-making and interaction with different situations.

Research Idea

The research idea is based on **designing an artificial intelligence model** that utilizes big data analytics and machine learning techniques with the aim of:

- Collecting and analyzing the individual's works, including writings, speeches, decisions, and interviews.
- Extracting their distinctive behavioral and intellectual patterns.
- Building a digital model that simulates their way of thinking and decision-making.
- Enabling users to interact with the model as a representation of that individual.

This model serves as a “**smart digital memory**” that contributes to preserving human experiences and making them available for further use.



Research Summary

This research presents a theoretical and analytical concept for creating an advanced artificial intelligence tool designed to simulate and preserve the behaviors and thinking patterns of important individuals by analyzing their intellectual and behavioral data.

The research demonstrates that such a tool could represent a significant development in preserving human knowledge and transforming it into interactive models that can be used in education, research, and training.

The research also emphasizes that the success of such a project requires accurate data and advanced analytical models, while taking into consideration ethical issues related to data privacy and the responsible representation of individuals.

Thus, this approach represents an important step toward utilizing artificial intelligence in the service of humanity and knowledge and toward building a more informed and sustainable digital future.

Research Importance

The importance of this research lies in several areas, including:

1. **Preserving intellectual heritage** by safeguarding the legacy of important individuals and preventing its loss over time.
2. **Supporting education** by enabling interaction with distinctive intellectual models.
3. **Enhancing scientific research** through in-depth analysis of thinking and decision-making methods.
4. **Contributing to the development of artificial intelligence applications** in the human and knowledge-based fields.
5. **Reducing the knowledge gap between generations** by transferring experiences through modern methods.
6. **Enabling applications in training and decision-making** through the simulation of the experiences of successful individuals.



Dark Matter and Dark Energy: An Analytical Study and Proposal of an Alternative Geometric Theory

Researcher's name: Laith Alaa Khalaf

Introduction

The concepts of dark matter and dark energy are among the most mysterious topics in modern cosmology. Studies indicate that a large portion of the universe consists of invisible components that cannot be directly observed, but whose existence is inferred through their gravitational effects and the accelerated expansion of the universe. Despite significant scientific efforts, our complete understanding of the nature of these phenomena remains limited, leaving room for the development of new models and theories.

From this perspective, this research seeks to provide an analytical study of these phenomena while proposing an alternative geometric theory that explains the behavior of dark matter and dark energy by reconsidering the structure of spacetime and the geometric relationships that govern it.

Research Idea

The research proposes a reinterpretation of dark matter and dark energy based on a new geometric model that relies on:

- Analyzing the curvature of the fabric of spacetime in a manner different from traditional models.
- Assuming the existence of invisible geometric effects that influence the motion of galaxies and the expansion of the universe.
- Replacing the concept of “invisible matter” with an explanation based on geometric distortions in space.
- Studying the relationship between mass, energy, and the geometry of space within a simplified mathematical framework.

The aim of this proposal is to present an alternative theoretical model that can be tested and compared with existing physical models.



Research Summary

This research presents an analytical study of dark matter and dark energy, along with a proposed alternative geometric model that explains their effects through curvatures and distortions in the fabric of spacetime, rather than assuming the existence of invisible components.

The proposal demonstrates the possibility of reformulating our understanding of certain cosmic phenomena within a more comprehensive geometric framework. The research also emphasizes that, although the model is theoretical, it could provide a basis for future studies aimed at testing it and comparing it with observational data, potentially contributing to a deeper understanding of the structure and mechanisms of the universe.

Research Importance

The importance of this research lies in several key areas:

1. Providing an alternative explanation for one of the most complex problems in modern physics.
2. Opening new perspectives in cosmology by introducing innovative geometric concepts.
3. Reducing reliance on hypotheses that cannot be directly observed and replacing them with models that can be mathematically analyzed.
4. Supporting theoretical scientific research and developing new explanatory tools for understanding the universe.
5. Creating a deeper connection between physics and engineering in a more integrated manner.



Development of a Medical Platform to Identify the Metabolic Gate for Chronic Disease Patients

Researcher's Name: Hussein Khalid Hussein

Introduction

The study of bio-timing focuses on understanding how biological processes within the human body are regulated according to a regular circadian rhythm, rather than functioning uniformly throughout the day. The body operates under a precise system that dictates the activity windows for functions such as digestion, hormone secretion, and cellular regeneration in harmony with the light-dark cycle.

These concepts form the foundation of chronomedicine, which emphasizes that the timing of administering medication is just as crucial as its type and dosage, particularly for chronic diseases. This field relies on the existence of a central biological clock in the brain—known as the suprachiasmatic nucleus (SCN)—which regulates the body's rhythm based on light exposure, alongside peripheral clocks located in various organs. Furthermore, therapeutic efficacy is closely linked to the "metabolic window," defined as the specific periods during which the body achieves peak capacity to absorb and utilize therapeutic substances.

Research Idea

The core concept of this research involves developing a digital platform that leverages artificial intelligence to analyze patient data and determine the optimal timing for treatment administration through the following steps:

1. Collecting patient data (disease type, current medications, sleep patterns, and nutrition).
2. Analyzing the body's biological rhythm and metabolic activity.
3. Identifying the specific "metabolic gate" tailored to each patient.
4. Delivering precise time-based recommendations for medication intake and nutrition.
5. Tracking patient responses and continuously updating recommendations.



Research summery

This project represents an advanced step toward smart personalized medicine. It aims to integrate artificial intelligence technologies with chronomedical concepts to pinpoint the most effective treatment times for each patient. By creating a platform capable of analyzing health data and delivering precise recommendations, this approach seeks to drive a qualitative shift in chronic disease management, improve patient quality of life, and alleviate the burden on healthcare systems.

Research Importance

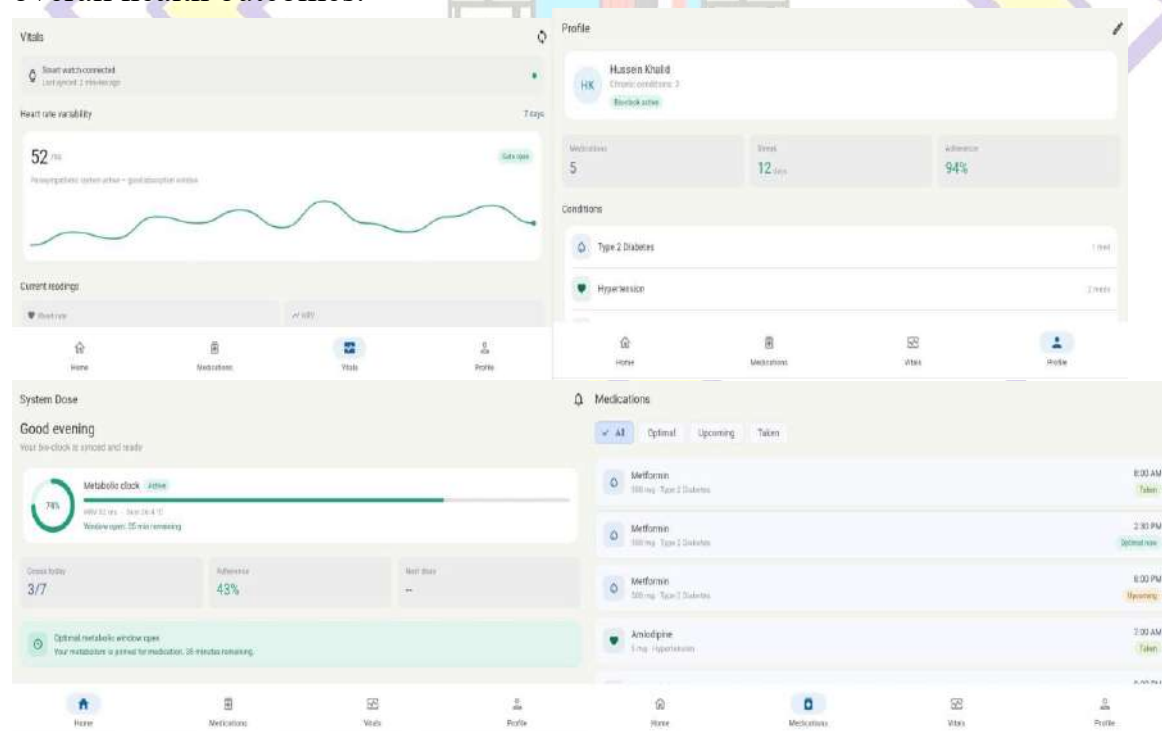
Enhancing Therapeutic Efficacy: Optimizes clinical outcomes by determining the ideal time for drug administration.

Minimizing Side Effects: Reduces adverse reactions by avoiding periods of low biological responsiveness.

Personalizing Healthcare: Delivers tailored medical intervention suited to individual patient profiles (Personalized Medicine).

Targeting Chronic Conditions: Provides critical management support for patients with long-term conditions such as diabetes and hypertension.

Reducing Resource Waste: Decreases pharmaceutical inefficiency and optimizes overall health outcomes.





Developing a tool integrated with artificial intelligence and employing it to help the study of students who wish to accelerate into distinguished schools

Researcher's name: Yazan Ahmed Zaki

Introduction

Recently we've seen rapid development of artificial intelligence technologies and digital transformation in education, there has become an urgent need to develop smart tools that contribute to supporting the educational process and improving the efficiency of individual learning. Students from distinguished schools are among the groups that require advanced educational methods that suit their high abilities, especially those who wish to accelerate their studies.

Why would any of this matter you might ask? Well Based on this, this research aims to study the possibility of developing a tool integrated with artificial intelligence that helps students organize their studies, provide customized educational content, and provide interactive exercises that contribute to accelerating their understanding of the curriculum with greater efficiency, a segment of this research is aimed towards student trying to support and help students who wish to accelerate their studies and get into all kinds of distinguished schools!

Research idea

The idea of the research is to design a smart educational tool based on artificial intelligence that is integrated into a digital educational environment, so that it:
Analyze the student's academic level individually.

Identify the strengths and weaknesses of study subjects. Providing customized study plans for acceleration, (also known as Acceleration Plans) Generate interactive questions and exercises according to the student's level.

Providing a simplified or advanced explanation according to the student's need.

Continuously monitor the student's development and update the educational plan automatically. This system aims to transform the learning process from a unified style to an outstanding. smart, personal learning that matches the abilities of outstanding students.



Research summary

This research presents a vision for developing a smart educational tool integrated with artificial intelligence that aims to support distinguished school students who wish to accelerate their studies, by providing a personal learning system based on analyzing the student's level and providing customized content and study plans. The research confirms that employing artificial intelligence in education can constitute a significant leap in improving the quality of learning, accelerating the acquisition of knowledge, and achieving higher academic results, which contributes to building a superior generation capable of keeping pace with scientific and technical development.

Research Importance

The importance of the research lies in several aspects, including:
Supporting outstanding students and enabling them to accelerate their academic path in an organized way without feeling overwhelmed by the subjects. Personalizing education to perfectly suit each student's abilities instead of normal, basic and generic education. Increasing the efficiency of academic achievement through smart, interactive tools. Reducing effort and time in studying subjects through precise educational plans. Promoting the use of artificial intelligence in education in a practical and effective manner. Improving the chances of acceptance and excellence in distinguished schools and special programs.





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