الجامعة الأهلية
AHLIA UNIVERSITY
BAHRAIN

Graduation
Project Exhibition

Organised by
The College of Engineering

2nd May 2023
12:00 pm - 13:30 pm

OVERVIEW

The College of Engineering organizes a biannual Graduation Project Exhibition which is a great opportunity to present the fruits of our graduate students work. The Graduation Project Exhibition is an excellent event to link between the academic and industrial sectors.

In Addition, it is great an occasion for our graduate students to practice and improve their engineering, communication and presentation skills.

PROGRAMME

12:00 pm **12:10 pm**	**Welcome Note**
12:10 pm **13:10 pm**	**Student Projects Demonstration**
13:10 pm **13:30 pm**	**Best Project Award & Closing Remarks**

LIST OF PROJECTS

No.	Student Name	Project Title
1	 **Adel Osama Badrah**  **Zaid Yahya Ramadan**	**INTELLIGENT PILL DISPENSER** Taking medication is an essential part of managing many chronic conditions and diseases, and missing a dose or taking the wrong dose can have serious consequences. However, keeping track of multiple medications and their specific dosages can be challenging, especially for older adults who may have difficulty with memory or dexterity. Further with the progress of technology we can avoid these problems. In fact, this project proposes an intelligent system to help peoples to take there medicines. Indeed, our project includes designing and developing an automated pills dispenser device that can hold multiple types of medication and can dispense them according to user-specified timings. The project is composed by a hardware part based on Arduino ESP 32 and a mobile application will be developed to connect with the hardware part.
2	 **Shaima Rauf**  **Ashraf Daher**	**RESUME PARSER AND RECOMMENDATIONS USING NLP AND MACHINE LEARNING** According to LinkedIn's statistics, 64 percent of women around the globe report career breaks for reasons related to their health and well-being. Unfortunately, these women face gender bias when returning from a career break. Many women decide to take a break from their professional lives in the mistaken belief that it is only a pause and not a complete end. According to a poll, more than a quarter of women who have taken a professional hiatus and are returning to STEM positions have encountered gender prejudice in the hiring process. Hence this project intends to create a system using machine learning that links them to the right returnship programs created especially for women seeking to return to the workforce by multinational organizations. This project also especially concentrates on Arabic-speaking women and assists them in making the best decision by creating a system that pre-processes the Arabic CV and the recommendation system analyses it to propose the right training programs.

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3	 **Ahmed Younis Ahmed**  **Fatima Abdulnabi Nasaif**	**SMART TRAFFIC SIGN TO CONTROL HIGHWAY SPEED LIMIT** In a sunny day, drivers are safe on the highway roads, but on rainy-day roads are wet and slippery, and that puts a lot of lives into jeopardy. Also, there are some irresponsible drivers that drive fast with out the regard for the weather on that specific day. The project will solve this problem, by installing cameras into the highways where a lot of cars are present. The camera will capture the road every hour so it could see the condition of the road, is it "raining" or "not raining". Then the captured image will go to an image processing program that will decide if it is raining or not raining. The program is trained using dataset of 20K images. This program is implemented using libraries that are pre-installed on google colab. The Arduino will be used to read the input from the camera, pass the captured image to the ML system and based on it will display the speed limit on LCD since the speed limit will depend on wither the street is wet or not wet. This system is useful for traffic agents where they can mount it in different streets to alarm the drivers about the speed limit on rainy conditions.
4	 **Moaz Abdulwahab Rihan**  **Saleh Adnan Alsadah**	**SMART HOTEL MANAGEMENT SYSTEM USING MOBILE APP** The Smart Hotel Application is a cutting-edge mobile application built using the Flutter Framework, aimed at simplifying the hotel booking process in Bahrain. With a comprehensive list of all Bahrain hotels, the app provides users with an easy-to-use platform to search for available rooms and make reservations at their convenience and find hotels offers. Upon booking, users receive a virtual room key in the form of a card within the app, which they can use to open their hotel room door. Each room door is equipped with an Arduino device containing an RFID sensor that reads the NFC card and opens the door accordingly. This state-of-the-art technology ensures the safety and security of guests while providing them with a hassle-free and convenient experience. Moreover, the app allows guests to locate their parking space and order room service and food from the app. The app manages all guest requests and stores user preferences, including their favorite food and service time, to enhance their future experiences.

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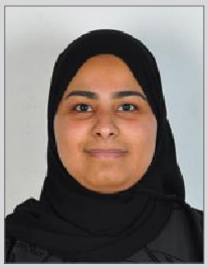
5	 **Najla Al Hammadi**  **Muneera Altamimi**	**UNIVERSITY CAMPUS ROBOT ASSISTANT FOR SMART UNIVERSITIES** The project introduces a campus robot guidance system for smart universities which helps Ahlia University students and visitors to get information about the colleges, majors, study plans, and any information related to Ahlia University. The main purpose is to greatly reduce the required resources for building a production-ready chatbot system that can be deployed anywhere. The project creates a voice-controlled chatbot using web scraping Python. The project integrates a question/Answer chatbot that automatically scrapes data from the website then structuring and indexes the data and constructs a language model based on the scraped data. The voice-controlled chatbot is then capable of receiving voice queries from a user, phrased with natural human language, while the system in turn attempts to return an answer using the information available on the university website.
6	 **Zahra Habib Alhayki**  **Raneem Ajam**	**A SMART GLOVE FOR TEXT CONVERSION AND SPEECH FOR THE DISABLED** “Due to his inability to communicate, a disabled person has difficulty communicating with a normal person. A person who cannot hear or speak cannot compete. It is not always possible to order a physical translator. Using the smart glove can improve communication between people. Hand signals can be translated into voice and text that can be understood by a normal person with a smart glove. Smart gloves translate hand gestures into speech and text. A glove is used to capture hand gestures in audio and text signals. There is an Arduino Nano, five Flex sensors, an MPU6050 sensor, a Micro SD adapter, a speaker, and a 5-flex sensor on the back of the glove for each finger. This captures the angle of the finger from straight (0°) to bed (90°). Five Flex sensors and one MPU6050 are used to detect hand orientation on the back of the glove, and their outputs are fed to the Arduino’s analogue inputs. Thespeakercanplayaudiofilesstoredonmicro-SDcards.TheLCDscreenmonitors the text equivalent of the gesture. After loading the audio file from the Micro SD Adapter,ArduinoplaysitinthespeakeranddisplaystheequivalenttextontheLCD. A 5-flex sensor and MPU6050 detect the hand and five-finger bend respectively to estimate gesture value. In this case, the Arduino Nano receives the value of each sensor, depending on whether the gesture is a finger bend or a change of hand direction. For each change, the sensor gives a value, which is then used to define the gesture. An LCD screen will display text and the speaker will play speech when you choose a selection gesture. Normal people cannot understand what disabled people try to say in sign language, so they needed translation to understand them and to communicate with them, so a communication bridge glove was created for deaf and dumb people. Using the glove, they can communicate not only with disabled people but also with normal people.”

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7	 **Mohamed Nooralla Baslar**  **Abdulla S. Mohamed Alalawi**	**AUTOMATIC WATER-LEVEL DETECTOR** An electronic system known as a water level indicator and controller is used to monitor and manage the amount of water present in a storage tank or reservoir. This project's goal is to construct a system that is dependable and will save money in the long run, with the intention of avoiding overflow and low water level scenarios. The methodology for this project includes planning and designing the circuit diagram, assembling the necessary components, building and testing the circuit, designing and creating the PCB layout, soldering the components onto the PCB, writing the code for the microcontroller, uploading the code to the microcontroller, testing the system and making any necessary adjustments, and finally installing the system. All of these steps are included in the methodology. This project's deliverable is a fully operational water level indicator and controller system. This system takes precise readings of the water level in a tank or reservoir and adjusts the amount of water in the tank or reservoir appropriately. The system comes with both an alarm and a function that will turn off the water automatically if it gets too low or if it starts to overflow, so the water won't run out, also there will be a mobile application which will give alerts and show the percentage on phone. Many advantages may be gained by using the water level indicator and controller system. It prevents the waste of water that would otherwise result from overflowing or having low levels. In addition to this, it helps to limit the danger of water damage to property or equipment that may be caused by water that has been allowed to overflow. As compared to more conventional methods of water level monitoring, this system is not only simple to install and use, but it also needs very little maintenance and is very cost-effective.
8	 **Abdulmajeed Aqeel A.Majeed**	**APPLICATION FOR ONLINE MECHANIC GARAGE** This project aims to develop an Online Mechanic Garage platform that will allow users to book an appointment for car and motorbike repair services online and also buy and sell their vehicles. The platform will be developed using a combination of web technologies and modern software development methodologies. The main components of the system will include a user interface for a buyer to book an appointment, buy their favorite vehicle also spare Parts for their vehicle, and an interface for a seller to post an ad for the vehicles that he wants to sell and interface for mechanics to manage their appointment. When creating an Online Mechanic application, we must not only consider the products but also the competitive and difficult market that is expanding daily. There is fierce competition among vendors with related company concepts. While taking care of the design layout of the application, a high-priority task is developing a friendly user interface. dealing with device compatibility, which is important to do because there are many various sorts of an app on the market. These apps also solve the problem of the user using multiple apps to buy and sell a car and also for spare-part and online mechanics. By using this app, you can do all these in a single app. To implement this project, we will first conduct research on existing online mechanic garage platforms, identify their strengths and weaknesses, and determine what features are necessary for our platform. We will then develop a prototype of the platform, test it extensively to ensure it is user-friendly and bug-free, and finally deploy it to a web hosting service. The results of this project will include a fully functional and scalable online mechanic garage platform that can be used by customers to easily book an appointment for car repair services and buy their favorite vehicle from the comfort of their own homes. Sellers will also benefit from this platform by posting their vehicle ads from the comfort of their own homes. Mechanics will also benefit from this platform as it will allow them to manage their bookings more efficiently and attract more customers.

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9	 **Mahmood Abdulla Ali**  **S.Ahmed Ameer Almeshal**	**BAHRAIN CULTURE APPLICATION** The Culture Ministry of Bahrain has a website that serves as a hub for all cultural events and activities in the country. However, with the rise of mobile technology and the increasing popularity of apps, it has become necessary for the ministry to expand its reach and cater to mobile users. This is where Flutter comes in. Flutter is a popular mobile development framework that allows developers to create high-performance, visually appealing, and cross-platform apps. By utilizing Flutter, the Culture Ministry can convert its existing website into an app that can be accessed by anyone with a smartphone. The app will feature a user-friendly interface that will allow users to browse and search for cultural events, exhibitions, and performances. Users can also filter events by category, date, and location. The app will provide detailed information about each famous landmark, including its location, date and time, and a brief description. Overall, turning the Culture Ministry of Bahrain's website into an app using Flutter will allow the ministry to reach a wider audience and provide a more convenient and accessible way for users to explore and engage with Bahrain's rich cultural heritage..

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