IT Department - Project 1 Ideas - Spring 2022-2023

No.	Title	Summary
1	Smart Time Table Generation App Using Genetic Algorithm	The manual method of creating timetables in colleges with big student populations takes a long time and frequently results in conflicts between different classes. Additionally, some faculty frequently adjust the timetable from the previous year, but incorporating changes is still a tedious process. To address all of these issues, we propose developing an automated system. Our Smart Time Table Generation Flutter App Using Genetic Algorithm provides a realistic timetabling approach capable of addressing both physical and soft constraints, which are particularly important when generating timetables in institutions with a large number of students. The automatic timetable scheduling allows teachers to check their timetables more easily once they have been confirmed through the system, with login ids and passwords.
2	Android-based Biometric Student Attendance System	In the World of Technology, Biometrics plays an effective role in identifying Human beings. Biometrics or characteristics are tightly connected to an individual and cannot be forgotten, shared, stolen or easily hacked. Since biometrics can better solve the problems of access control, fraud and theft, more and more organizations are considering biometrics a solution to their security problems. The characteristics can uniquely identify a person, replacing or supplementing traditional security methods by providing two major improvements: personal biometrics cannot be easily stolen and an individual does not need to memorize passwords or codes. Our android-based Biometric Student Attendance System ensures security, access control, reliability, efficiency and better performance. The system will have data on every student, and check the daily attendance of every student using the device. In this project, the front-end involves XML, Android-Java and the back-end involves SQL Server. The IDE used is Android Studio.
3	Mental Health Chatbot App	According to the World Health Organization, there is a global shortage of health workers trained in mental health. Many mental health interventions do not reach those in need, with approximately 70% with no access to these services. Chatbots could be a scalable solution that provides an interactive means of engaging users in behavioural health interventions. Chatbots are systems that are able to converse and interact with human users using spoken, written, and visual languages. Chatbots have the potential to be useful tools for individuals with mental disorders, especially those who are reluctant to seek mental health advice due to stigmatization. Our Mental Health Chatbot System helps users by recommending video links based on their sentiments by analyzing their patterns of communication with the chatbot. Here we have implemented the rasa framework. Rasa is a python framework that helps us to build any kind of Chatbot easily. It is based on NLU (Natural Language Processing) which offers the possibility to understand what the user wants.

4	Identifying Fake Products Through a Barcode-Based Blockchain System	With the rise of globalization and the ever-increasing rate of technological advancement, the volume of production as well as the ease of obtaining counterfeit goods has reached new levels. It impacts a company's sales, reputation, and revenues, as well as poses a lethal hazard to unsuspecting customers. Our Fake Product Identification Through Barcode Using Blockchain Technology System – a Dotnet project proposes a form of identification of fake products using blockchain technology. In the proposed system, we are assigning a barcode to a particular product created by the manufacturer along with all the details of the product and the end customer can scan that barcode to get all information about that product. After scanning the barcode, the user can identify whether the product is real or fake.
5	Dental Caries Detection System using Python	Dental caries is the most common oral health condition. Some studies have shown that only 21% of people go to dental clinics and hospitals for dental examinations. The rate might be significantly lower in low- and middle-income countries where dental examinations are expensive and not covered by insurance. Contrary to the accessible routine checkup, smartphones can be available and affordable in most countries. Thus, a smartphone-based diagnostic tool, which most of the population can easily access, could be a game changer in increasing the number of examinations of people with dental caries. Deep learning, with a major model - Convolutional Neural Networks (CNNs), uses network structures consisting of multiple layers for automatically learning and self-learning backpropagation. Our python-based Dental Caries Detection System easily detects dental caries from an image uploaded by the user.
6	Sentiment Analysis for Product Rating	Here we propose an advanced Sentiment Analysis for Product Rating system that detects hidden sentiments in comments and rates the product accordingly. The system uses sentiment analysis methodology in order to achieve desired functionality. This project is an E-Commerce web application where the registered user will view the product and product features and will comment about the product. System will analyze the comments of various users and will rank product. We use a database of sentiment based keywords along with positivity or negativity weight in database and then based on these sentiment keywords mined in user comment is ranked. Comment will be analyzed by comparing the comment with the keywords stored in database. The System takes comments of various users, based on the comment, system will specify whether the product is good, bad, or worst. Once user login the system he can view the product and product features. After viewing product user can comment about the product. User can also view comment of other user's. The role of the admin is to add product to the system and to add keywords in database. User can easily find out correct product for his usage. This application also works as an advertisement which makes many people aware about the product. This system is also useful for the user's who need review about a product.