VIGYAAN PROBLEM STATEMENTS

(Information Technology Department)

Following are the tentative list of problem statements. However, students with some other novel ideas can also participate in this event.

Note:

- **Department of Information technology selects three teams with novel ideas and its developed prototype (running status).**
- **The three teams that are selected have different themes.**

1. College Admission Predictor PHP

Using this entrance seat allotment become easier and can be implemented using system.

Features:

Admin: Through admin login, admin can add college, cutoff for new college; add information about the location of the college and other relevant information, new student and feedback details added by the user.

User: Through user log in, student can add their details and marks. They can also give feedback.
System will predict the college on the basis of previous year cutoff trends.

Developers can add extra features if they want to.

2. Diagnostic Lab Reporting System PHP

It is an online diagnostic lab manager application that brings up various diagnoses working online.

Features:

Admin login: Through this admin can add various test details and cost. View appointment details, patient test details.

User: through this patient can get test details and payment can be made online. User will get notified as soon as report is prepared.

As soon as payment is made online the patient test is booked and the lab may now collect the sample from patient registered address. After the test, patient gets the notification and a copy of report is sent on the registered email or phone number.
Developers can add extra features if they want to.

3. Personality Prediction System through CV Analysis

This will enable a more effective way to short list submitted candidates CVs from a large number of applicants providing a consistent and fair CV ranking policy which can be legally justified. System will rank the experience and key skills required for a particular job position.

Features:

Admin log in: Through admin login, admin can add personality and aptitude questions to the system. Admin can add job details, experience and designation of the job .These details can be updated.

Candidates log in: Through this candidate should upload resume and should solve personality and aptitude questions. System will figure out the preferred candidates by the tests and resume.
After completing online test candidates can view own result in graphical representation with marks.

Developers can add extra features if they want to.

4. Web Data Mining to Detect Online Spread of Terrorism

This system utilize web mining algorithm to scan and mine from unorganized and unstructured webpage

Features:

Keywords: these are added by the admin and website are scanned by this keyword.

Check website: select URL file, system will check the website and alert authorities to block such website.

Developers can add extra features if they want to.

5. Fake Review Monitoring and Removal

Using this user will come to know about the genuine review of a particular product. This uses concept of Data mining.

Features:

Admin: through this admin can add details of product to the system and delete the review which is fake.

User access and give review.
System track IP address ,if system observe fake review coming from same IP address many a times this IP address is tracked and will inform admin to delete such review.

Developers can add extra features if they want to.

6. IoT Based Vehicle Accident Detection and Rescue System

The high demand of automobile on roads has created traffic hazards and road accidents. Life of people is under high risk. This proposed IOT based system should reduce the time taken by ambulances to reach hospital and the accident location.

Features:

To detect the accident there is an accelerometer sensor present in this rescue system and the GSM module included sends messages about the location to the respective guardian and rescue team.

With the help of accelerometer sensor signal, a severe accident due to an obstacle can be recognized.
Microcontroller used, sends the alert message through the GSM module including the location to a rescue team. So the emergency help team can immediately trace the location through the GPS module after receiving the accident location information, action can be taken immediately .

Developers can add extra features if they want to.

7. Android Based AI Diet consultant

Abstract:

Artificial dietician project is an application with artificial intelligence about human diets.

It act as a diet consultant similar to a real dietician .A person in order to know his/her diet plan needs to give some information to the dietician such as its body type, weight, height, and working hour detail.AI calculates the amount of proteins, fats the user should consume on the basis of the physical attributes entered by the user. It should also calculate BMI level. If the user changes the physical attributes then the previous generated diet plan should be deleted and a new diet plan should be generated on the basis of new physical attributes.

Developers can add extra features if they want to.

8. To Develop an Android Application to Set Limits on Various Social Media Apps

Abstract: Among the general population students are generally sensitive to social media and smart phones because of their pervasiveness. Several studies have shown that there is a negative correlation between social media and academic performance. So this app is created to reduce the time usage.

Features:

★ Block apps based on daily usage/hourly usage after you have spent the daily allowed time Stay Focused block you from using the app

★ Block apps at specified time intervals

★ Track daily time spent while using the app itself: shows the timer with remaining time while using the blocked app.

★ Block notifications: after you have spent the daily allowed time to keep you away from distracting apps.

★ App usage history: helps you keep track of your app usage history

★ App time spent: helps you keep track of time spent on different apps over time
Developers can add extra features if they want to.

9. Android Electricity Bill Payment

The project is an Android based application where users can get instant electricity bill and pay them online via credit card. Features:

Admin login: through this admin can view account details and feed system with electricity usage into respective user account.

System will calculate the bill.

User log in: User can see the bill and directly online payment can be made through various modes.

Developers can add extra features if they want to.

10. Android Based School Bus Tracking System

Abstract: This system is a combination of web as well as Android application where driver will be using Android application whereas admin and parents will be using web application.

System allows admin to add a new driver where driver ID and password is generated and stored. The driver will have Android application in his Android phone when driver will login to the application his GPS location will be sent and stored in database. When driver logs out from application again GPS location will be stored. In order to keep track attendance of driver, this system plays a major role. The role of admin is to register a new student by entering his personal details with parents receive a mail which consists log in ID and password, so that parents can access web interface to track children. Admin can view bus details and can also update the details.

Developers can add extra features if they want to.

11. To Develop an Android Based Application Which Stores Students Information

Abstract: It is not possible to keep the hard copies of each and every document at a single place. It will reduce the usage of physical documents. It will digitize all documents and records and make them available on a real-time basis.

The app should make ensure that once student enter their database along with their mark-sheets, certificates, library card, ID card they can access it anytime and anywhere required.

Developers can add extra features if they want to.

12. To Develop an Android Based Application for New Students

Features:

The app should cover up the following details:

1) It should give the details of various departments in the college.
2) It should details about various events, clubs and committees in the college.
3) It should provide all the necessary information related to academics like previous year question papers, name of important textbooks that they can refer.

Developers can also add some extra features

13. IoT Based Baggage Tracing System

Features:

This aims to provide a better and secure system to the passengers, using baggage tracing and handling system using smart RFID tags and IoT which is based on cloud server. A more secured algorithm is used for generating tags that are attached to printed baggage label with the details of passenger and airline stored in it. RFID readers in the check-out areas facilitate step tracking of baggage which prevents baggage loss. The baggage's real time position is tracked and stored in a cloud using IoT and unique ID can be retrieved by the passengers wherever and whenever necessary. The same ID can be used while collecting bag at check-out counters. The system provided ensures less consumption of time, security for baggage and is economical hence provides customer satisfaction.

Developers can add extra features if they want to.

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14. IoT Based Trash Can

This concept aims to design an IOT based trashcan will automatically and continuously intimate the status of the trashcan to the Municipality. The municipality workers get the notification and they can locate the area remove the garbage pin replace the new one.

Features:

1. Raspberry Pi: The Raspberry Pi is slower than a modern laptop or desktop but is still a complex Linux computer and provide all the expected abilities that implies at a low-power consumption level. The OS raspbian, the OS is installed on the SD Card only.
2. PIC Microcontroller: The PIC microcontrollers appeal to hobbyists and experimenters, especially in the fields of electronics and robotics, wide availability, low cost of programming with built-in EEPROM, set of register that also function as RAM. Special purpose control register for on-chip hardware resources are also mapped into the data space. It is similar to the 8051 microcontroller and the crystal frequency is 8 MHZ only
3. DC Motor: This is an electric machine which converts electrical energy to mechanical energy. Used to open and close the container plate
4. Infrared sensor: An infrared sensor is an electronic instrument which is used to sense certain characteristics of its surroundings by either emitting and/or detecting infrared radiation. Infrared sensors are also capable of measuring the heat being emitted by an object and detecting motion.
5. ESP8266: The ESP8266 is low-cost Wi-Fi microchip with full TCP/IP stack and microcontroller capability, connections using Hayes style commands and with 1MiB of built-in flash, allowing for single-chip devices capable to Wi-Fi.

Developers can add extra features if they want to.

15. Face Recognition Attendance System

The system is developed for deploying an easy and a secure way of taking down attendance. The software first captures an image of all the authorized persons and stores the information into database. The system then stores the image by mapping it into a face coordinate structure. Next time whenever the registered person enters the premises the system recognizes the person and marks his attendance along with the time.

Developers can add extra features if they want to.

16. Doorbell System Using Iot

In this model, database of authorized person is listed by registering their faces by entering OTP, so that non authorized person can't able to enter the home until they enter the correct OTP. Whenever some person pressing calling bell switch, the camera gets triggered and capture the image of the intruder and checks that the image to the database, if that face is not matching with the database, it sends an email containing that intruder image and OTP, when intruder type the OTP by the owners' knowledge then it authenticate the user to enter.

Developers can add extra features if they want to.

17. IOT Based Helmets

A smart helmet is designed which is connected with mobile phones and prevents the driver to answer any phone call while driving and in case of any emergency notifies to nearest rescue team .

Developers can add extra features if they want to.

18. Android Based App to Learn Different Foreign Language

Features: Through this app students can learn foreign language anytime

Admin: it will add various languages into the app.

User: learns different languages and practice them.

Developers can add extra features if they want to.

19. Dc Motor Control by Android App

This android app is designed to control dc motor; it can control its speed as well as direction of movement in clockwise and anticlockwise direction. For this, DC motor is interfaced to the microcontroller. A Bluetooth modem is used to receive direction commands and PWM commands. When an Android device sends commands, it is received by the Bluetooth modem which then sends the commands to the microcontroller. The microcontroller controls the DC motor through motor driver. LCD display is used to show the status and the speed of the DC motor. The android application is used to control the entire system. The start button is first clicked to start the motor and then the motor can run in both clockwise and anticlockwise direction

Developers can add extra features if they want to.

20. Android TV Remote Control

This app gets connected to smart TV through Wi-Fi and works efficiently like a remote.

Features:

Power On/Off buttons, channel digit buttons. It should be able to control almost all TV brand.

Developers can add extra features if they want to.

21. Money Manager and Expense Tracker

Money Manager helps you track your financial activity efficiently.

Features:

- Easily record the transaction to track where your money comes and goes.
- Set reminders to remain you to record transactions every day.
- Organizing bills by week, month and year as well as by categories. Record all items in a single transaction with different category and amount

Developers can add extra features if they want to.