KONERU LAKSHMAIAH EDUCATIONAL FOUNDATION

(DEEMED TO BE UNIVERSITY)

Department of **COMPUTER SCIENCE & ENGINEERING**

Presents

K L HACKLEAGUE

DOMAIN: AUTOMATION

*Note: The participating team can extract more constraints and create more options to make the design availed with many viable operations.

Sample Abstract Format

Domain of the problem: **Team Leader:**

Team Name: **Type: Own/Given Statement**

College Name:

Problem Statement

Solution/Idea for the above Problem Statement.

Technology Stack Used

Use Case (If Any)

1. **Statement:** Design a platform to utilize and share personal transportation in an effective manner.

Domain: Automation

Description: Assume that you are required to attend an urgent meeting regarding your company's financial state. You rush out to find that you've missed the only transport available towards your company. In such a situation you should be able to notify others who are travelling in the same route, that you are in need at a particular point. This kind of usage is completely based on mutual understanding between you and vehicle owner, for eg, you both can share the petrol cost or something of that sort of mutual benefits or individual benefits being served.

Constraints:

→ The solution must be supportive to every sector of the people and should be easily grasped and adapted by the user.

→ The solution should address both security and authentication where users and commuters data is not misused by any means. It should not disclose any personal details that deal with both user and commuter that may lead to jeopardizing either of them.

→ The design should also be functioning properly in remote areas with small bandwidth of internet connectivity.

→ The design must also equip all the safety measures and with the options that concerns the user while travelling like sharing the number plate of the vehicle he/she is travelling in.

→ The kind of user interface you create must also be adaptable to every person and easily understandable.

→ The solution must handle all the ambiguities identified as in case of both the user and commuters.

2. **Statement:** Design a model that suggests alternative means of energy and also lets the user know about the energy consumption for each device.

Domain: Automation

Description: In your building there are many electrical appliances. With the aim of conserving energy you cannot monitor the consumption by each electrical device. You want certain specifics such as, monitoring of electrical units on the basis of time with minutes, hours and day, etc..,. Or while going out of station if you forget to switch off your appliances you can suppress the excess wastage of energy by getting notified which appliance is still running.

Constraints:

→ The design must monitor each electrical device based on amount of units the electrical device is consuming and its cost that it will be charging.

→ Also it should give suggestions with the power conserving techniques only when it has exceeded the defined set limit by the user.

→ The design must be facilitated with the amount of unit it is consuming and the location of the particular device and notify about it on the owner's phone.

→ The design should also be concentrating on household, both small and large scale industry including agricultural sector.

→ The design should also be determining the status of the every minute device whether it is on or off.

3. **Statement:** Develop a software that can provide suggestive measures and means for both skilled people and unskilled people.

Domain: Automation

Description: As there are many professions(occupations) in society that deals from domestic works to advanced industries globally, (To enter in any profession) one needs to have proper guidance and assistance to excel in a particular field. We must provide a proper assistance to a person to excel in a particular field of his interest. We should also aim to break the barriers and give the exposure to the people who are intimidated with limited thoughts and resources.

Constraints:

→ The design must display the options that are required and available for the particular field the person wants to pursue in his/her career.

→ The design should also expose the people about the alternate options that are available to get him the opportunities their career.

→ The design should be demonstrating the viable ways of doing the work in the occupation the person is working in.

→ The design should display the employment opportunities to the people they want to seek.

*Note: The participating team can extract more constraints and create more options to make the design availed with many viable operations.

4. **Statement:** Design a software that imposes automated traffic fines for defaulters.

Domain : Automation

Description: One of the present day advancements that occurred in traffic systems recently is where they print challans and pay the fee online. Hence, this software should impose traffic fine by detecting the responsible person, in whichever way possible, when the vehicle driver is not following the relevant traffic rules or abiding the traffic laws of the country.

Constraints:

→ The design must detect the vehicle number plate when the person is not following specific traffic rules and fine must be imposed on vehicle owner.

→ The design must only issue fines based upon the extent of violation of the traffic rules done by the person.

→ The design must contain the technologies dealing with image classification and image processing.

→ The database of this design should remain confidential and security protected and only accessible to the members of traffic system.

*Note: The participating team can extract more constraints and create more options to make the design availed with many viable operations.

5. **Statement:** Design a kiosk at public places where commuters are free to review any public place and the government can take necessary steps to identify the zones to be concentrated.

Domain: Automation

Description: Government of India provides various facilities to the public. But we need to let the government know if the facilities are functioning at good extent and are they being used by the public. To get feedback about the facilities provided with their opinions. Kiosk System must be developed to enhance the quality of services and facilities being provided by the government.

Constraints:

→ The design must contain surveys and polls through kiosk systems to collect the opinions of the people regarding particular facility or service.

→ Ratings must be generated based on the data given by the user in the face of opinion.

→ The places with less rating at the end of the day must be reported to the concerned authorities to be taken care of.

→ Frequent negative remarks must make the hierarchical bodies in administration notified.

→ Commuters are free to poll or give info with proper authorizations and authentications.

6. **Statement:** Nearby cold storage locator.

Domain: Automation

Description: After the successful harvest of a crop it needs to be stored properly in storage systems. As some of the crops also needs to be stored in cold storage system to maintain and sustain the quality of the crop for the particular period, a farmer has to locate the nearby cold storage. The cold storage locator indicates the farmer to know where he can store the harvest with the amount.

Constraints:

→ The design must contain the volume parameter based on how much the storage system can store.

→ It should give access to locate the nearby cold storage by GPS or any other source.

→ Charges should be charged on basis of volume and type of the product by giving prioritizing it that customer is going to store.

→ Ratings, reviews and suggestions needs to be evaluated on daily basis where the storage system can enhance their quality of service.

→ If the customer wants to extend the storage period of the crop it must have the facility to do so on each comfortable end.

→ The customer should be notified periodically about the condition of the crop.

7. **Statement:** Integrate all the patient's records from different sector of hospitals with a unique identification.

Domain: Automation

Description: When the patient approaches the doctor in some unhealthy state. The doctor also needs to assess the patient's previous medical history of any such disease. This might ease the doctor's assessment to treat the patient. This integration can be in favour of both the patient and the doctor as the patient does not need to worry about carrying the previous records. This would fasten up the process of evaluating the patient and the doctor to react to the situations.

Constraints:

→ The design must display the following details about the patients.

1. Medical Tests.
2. Medicines prescribed in the past.
3. Duration of every prescription.
4. Suggestions from a doctor.
5. Details of the treatment.

→ The design must employ such system that the prescription given by the doctor should only serve the customer with proper authorization.

→ Verification of the doctor and the user should always remain as the first priority.

8. **Statement:** Employ sewing mechanism to identify disease/ improper condition in poultry farms.

Domain: Automation

Description: Along with agriculture people also practice poultry in a huge number. Sometimes we hear about a huge loss of bird lives due to a disease named bird flu. People practicing poultry keep a check on the birds by testing some random birds in a period of time. These selected birds are tested based on weight, productivity, amount of feed intake and many more and then these are tested for the flu if there are any abnormal changes in the above tests. But testing some random birds doesn't give accurate results. Hence there is a need of a solution for this problem.

Constraints:

→ Your solution must be based on parameters which can justify priorities and price according from the poultry farm.

→ The solution you provide must be able to reduce the time taken to test the birds.

→ Identify the conditions of the farm and take recommended suggestions.

→ Feed sharing between recommended hatcheries and brands. Some poultries also have self feed productions so the one's without such an option can share feed from the one's having.

9. **Statement:** Get an online application that requests for labour/workers required for one particular work.

Domain: Automation

Description: In day-to-day life there are many people are in need of workers for getting their jobs done. Might be small-scale jobs such as domestic, construction etc. People are unaware who to appoint for certain jobs .In such case, this application provides the information to contact with the relevant people and get their work done by them. This can help in giving direct access to the people to appoint the workers.

Constraints:

→ Engage the required number of persons for all requirements to the contractor located nearby for preferred kind.

→ Refer contractors related to the kind of workers needed.

→ In case of all need this must build a network of contractors.

→ Get the requirements of the willing contractor i.e; wages, work hours, sector of the workforce need and commission.

→ Direct contact the workers without contacting the contractors.

10. **Statement:** App that has no mediator in between public and government .

Domain: Automation

Description: Government has introduced many facilities which benefit the people. Though people are interested in interacting with the government, there is no proper medium to interact/express their views with them regarding particular context. But these aren't solved by the government directly because there is some involvement of unethical practices .To avoid such problems there should be direct interaction between public and the government regarding their problem.

Constraints:

→ The design should have the option of image sharing.
→ The design should have polling whether to identify if it is an individual or a society problem
→ The design must be able to forward the problem to the particular department.
→ There should be an interface where people can share their views with others as well.

11. **Statement:** Design an interface for the tourists that connects tourists with the native people for providing accommodation facilities.

Domain: Automation

Description: India has many tourist spots. Though there are many hotels at tourist sites there are some situations when the hotels are fully occupied .In such cases the tourist can use this source for accommodations in friendly atmosphere with the natives. There is a chance for tourists to live with them so that they can understand the culture of that place.

Constraints:

→ The design should display the price of the accommodation the owner has decided if there are any.

→ Your solution must contain the details of the tourist guides or any other source of information known by the owners.

→ Your solution must also have the safety measures required to be taken by the tourists.

→ It must also let the tourists and owners give a feedback about each other and also the accommodation.

→ Your design must also calculate the willingness ratio of the owners in a particular tourist place and accordingly assign the tourist a best place based on the feedback and distance metrics.

12. **Statement :** Develop a solution for providing all kinds of analysis regarding a person's mental health.

Domain: Automation

Description:

Your solution must contain details of all sorts of mental illness issues in a person, may it be stress, depression or any other major or minor problems. The details of issues must mainly contain reasons, symptoms, and any other relevant information. The analysis has to be done in your system itself with any concerned means you can find out.

Constraints:

→Your solution must be able to analyse the user very accurately. The accuracy rate must be very high as lower accuracy may lead to dangerous outcomes.

→ Your solution may also provide suggestions to the person based on the analysis done.

→ Also it must be showing an overview of the overall mental health status of the user.

→Get them the periodical estimates of various parameters regarding their mental conditions.

13. **Statement:** Design an application to benefit the pregnant women in all aspects of that period of time for healthier generation to give birth.

Domain: Automation

Description: When it comes to taking care of pregnant lady, there are numerable things to be taken care of. In support of these women an application must be developed that helps in taking necessary care and suggestion that required at such stage.

Constraints:

→ The design must be suggesting and also notify the regular checkups that are required at each stage of pregnancy.

→ Nutrition diet plan must be explained precisely with the help of nutrition chart which should be advised by renowned nutritionist.

→ It should also be displaying nearby best consultancies so that they cannot face any problem regarding the pregnancy.

→ The user interface must not include complex functionalities and even must have an interactive model with it.

→ This should not look at only addressing health related issues of the woman but also other aspects of lifestyle and notify the intensity of emotions if needed.

14. **Statement:** Develop an AI platform for every day's health tracks and monitoring (calories intake and burned, rest, BMI, fitness activities, etc.)on daily basis.

Domain: Automation

Description: Today poor health is mostly related to each individual's lifestyle. Too much fat in your diet can lead to the heart disease, and at the same time less fat lead to Obesity, in either of the case your health is going to be affected.

This can gain your confidence in making good health decisions by establishing your own health goals as per your own BMI (Body Mass Index). Even after knowing all these scenarios, people are unable to follow a disciplined healthy lifestyle.

Constraints:

→ Solution should be made while keeping in mind the various diversity and need of users., etc.
→ It should be able to recommend daily diet plan, health plan, health goal, health challenges., etc.
→ Suggest several healthy and effective habits (measures), supplements and exercises that are available.
→ Description and suggestive measures the most prevalent health issues in the world today along with their symptoms, causes and preventive measures.
→ Mention such parameters included in nutritious balanced diet like carbohydrates, proteins, fats etc.
→ Suggestions and remainders to user can also help a lot in being aware of their health.

15. **Statement:** Design a digital payment portal or app through QR code payment system for the government bills.

Domain: Automation

Description: There are many ways to pay the government bills and taxes. But these ways are independent of each and every source of payment. QR code payment integrates and combines all the sources of platform under one platform to make the payment easier. This can help us to ease the access instead of going for different sources and make payment.

Constraints:

→ Your design should verify the eradication of fake QR codes with the help of OTP mechanism.

→ The design must also provide authentication of the users which is the main concern.

→ Your design should consider ease of the user through feedback check providence and also an FAQ mechanism in it.

→ The user must be given rewards based upon the payment gateways and all these must be integrated to a single account thereby.

→ There should be a security measure for proper functioning of transactions and also should be transparent to each of the governing bodies.

16. **Statement:** Design a portal to apply the permissions that are required for constructions online and estimation of the time and budget that is required for every task.

Domain: Automation

Description: From the time we decide to construct a building or any other structure and until we complete the construction we need to take many permissions and many legal acceptance letters from the government officials. But many a times when you are new to this field you would be unaware of the permissions you need to take. Hence your solution approach must have all the details regarding all the permissions to be taken and all the requirements for successful accomplishment of your task.

Constraints:

→ Estimation of tasks in the construction and classify the permissions needed under each and every sector of administrative field and legal fields etc.

→ Estimation of amount of resources those are required for each individual task and also generate the revenue plan and periodical investments needed if any.

→ Dynamically adjust the time that is required for completion of the construction, and then re-estimate the cost.

→ The solution must be adaptive but not declarative sense and should scale to high scale construction levels.

17. **Statement**: Cheap alternative for total station.
    Domain: Automation

Description: There is a device called total station which is used in construction sites since the device is expensive and delicate to handle. This is a device that can be used for surveying and building construction. Create an alternative where it is less expensive and easy to handle.

Constraints:
 → It should mimic all the properties of total station.
 → Employ a cost effective solution to your approach where accuracy difference between both the designs must be less.

18. **Statement**: Activity analysis of a worker.
    Domain: Automation

Description: Worker activity assessment (how active vs non-active) during work hours using IMU. Inertial Measurement Unit (IMU) is a device that measures and reports a body's specific force, angular rate, and sometimes the magnetic field surrounding the body, using a combination of accelerometers and gyroscopes, sometimes also magnetometers. You are expected to do a detailed activity analysis of IMU open data and submit a comprehensive analysis report.

Constraints :
 → The IMU must employ all the proper functionality check of the worker based upon his class of work.
 → This can also consider the situations of the worker's work and based upon the average data from today must update the threshold paramaterized values for check day by day and improve or deprive their score.
 → The individual reports must be updated periodically with all the statistics to the owner /admin depending on the workplace.
 → They must have a interface to report or communicate to their authorities concerned and have necessary action plan preferred by them.
 → They should employ a resolver to resolve the reports made my the workers in that environment.

19. **Statement**: Design a solution to help the blind people in their daily life and intimate him accordingly.
    Domain : Automation

Description: Nothing gives more satisfaction than bringing light to someone's life. Prepare a device that would help the blind to make them listen, what all they cannot see and also to help them walk freely on the roads without getting collided by any obstacle.

Constraints:
 → The device should be able to readout the context in front of the person, and also detect the objects.
 → Your solution must include a feature that notifies the concerned person about the obstacles in his way through vocal alerts.
 → Your solution should be able to detect in all the possible directions.

20. **Statement**:   virtual   reality   to   stimulate   medical   procedure.
Domain : Automation

Description : The virtual reality can be used for assembling and dissembling operations. This can be used in medical procedures so there isn't any human loss. The trainee can get the feel of real operations. Thus the surgical procedures can be optimised and rehearsed for the obvious advantages of the people and the healthcare centres. The applicant can design a solution that have the feature of all the surgical procedures

Constraints:

→ The solution design should be made of minimal cost so that this can be accessable to everyone.

→ The solution design must be able the predict the accuracy of the other alternative solution and compare with best solution

→ The design must be able to narrate the suggestions to the user .

21. **Statement**: Tracking of criminals using image process.
Domain : Automation

Description: It is a big issue for the Indian government to indentify and locate the people. When a person who does crime escapes form the crime scene it would be nearly impossible to catch him unless one chases him. If we have a solution that could either detect the criminal before he does something or finding his location when he escapes after he does a crime we will be able to help the government a lot in this scenario.

Constraints:

→ This solution should detect a person in public if he is a criminal by using emotional analysis.
→ This should be able to track a criminal no matter where he is by using facial recognition.
→ It should be able to intimate the nearby police station about the criminal's activities.

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