KONERU LAKSHMAIAH EDUCATIONAL FOUNDATION

(DEEMED TO BE UNIVERSITY)

Department of **COMPUTER SCIENCE & ENGINEERING**

Presents

K L HACKLEAGUE

DOMAIN: INFRASTRUCTURE

*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 solution to supply necessary goods and services from the regions that have, to the regions that need them.

Domain: Infrastructure

Description: You are running an organisation which helps in providing the transport and assistance to transport the goods from manufacturer to the consumer who are involved in this system to meet the requirements. It also interconnected with urban and rural areas. The whole process depends on bidding the products which are in need for the consumer. The problem is that, we need to have a public means of providence of goods and services where an individual can bid their needs.

Constraints:

→ The design must operate the bids and classify them based upon the region the users are located at and also the kind of product they bid for.

→ Based upon the user interest to buy the products we must employ a mechanism to predict the future demand of the product.

→ The design must employ predictive analysis for the total number of bids under the respective regions.

→ The design can also include a route map for the sellers who actually accepted the bids to sell.

→ It should not jeopardize the identity of a buyer but should only be reflected as a whole under the product.

→ This can also employ a client-server communication interface that can be integrated to the whole design.

2. **Statement:** Design an application for finding the nearest toilets.

Domain: Infrastructure

Description: Assume that at some point on his journey or any outdoor activity a person needs to attend the lavatory. He doesn't find any place to attend them. To make up for this problem you need to provide directions to the nearest possible toilets in the area the person is present. This would help us overcome one major problem that the country had been facing from the past century.

Constraints:

→ The user must be able to find out nearest toilet based upon their present location.

→ The user can also view the ratings and check the recommended one by the application.

→ It should also employ feedback from the user including maintenance details etc.

→ It should provide the details of the functioning and non-functioning toilets based up on the given requirement.

→ It should provide the statistics of the place (number of users per day, generated revenue if any)

→ People who are willing to contribute to this kind of service should be able to register with all the required enclosures and requirements to be addressed.

→ It should also locate nearby public toilets that are shareable like schools, parks available at the required time.

3. **Statements:** Reuse of Waste water and redirect them to the recycling plants and design a portal to make users and administrators to know about the stats of them.

Domain: Infrastructure

Description: There are many water bodies in our country where there are chances of re-using them by water treatment. Some of these water bodies are left unnoticed. The user using this design can intimate the details about unclean water bodies which can be treated by the concerned authority. This authority takes action on basis of inputs from user.

Constraints:

→ The design must identify the waste water and where they must be cleaned using recycling plants.

→ The design must employ smart ways of recycling

→ The design should be indicating the nearest recycling points where the water can be treated

4. **Statement:** Personal interest getting a platform to combine all people under single group or community.

Domain: Infrastructure

Description: In few colleges we find student clubs for some hobbies such as dance, music, painting, sports and etc. These clubs are just bounded upto a single college. Why not we create a common platform for not only 10 to 20 hobby clubs, but a club for each kind of interest in people. A platform must be the base for providing people interested in a particular hobby a medium to connect with similar interested people all around the world.

Constraints:

→The platform must have an option of creating new clubs/ groups of a particular domain.

→ Get or seek help from the people if already present. (Based on people in the group through ratings by the person in the group).

→This platform must provide a Global channel for calling.

→ Must provide features like Video and voice calls.

→ Complete information of the person must be present, i.e., the kind of works the person has done in that particular field or hobby.

→ Facility of Auto extraction of information regarding community must also be provided.

→ Block the sensitive and fake advertisements.

5. **Statement:** Design a solution for sewer coagulating issues causing the stagnation of the drainage system.

Domain: Infrastructure

Description: As we know monsoons are very bad due to stagnation. Due to this the roads are stagnated with waste water, which leads to unhealthy surroundings.The main problem is detecting the sewage blockages and monitoring them .The solution for this problem can help to maintain the proper drainage system and keep the city cleaner .

Constraints:

→ The design should be exhibit the strength of the signal.

→ The design should be able to detect the blockage and then look at measures that could be taken.

→ The design should be able to find the way through navigating the sewer canals using a map.

→ The design should be measuring the intensity of the blockage if possible.

→ Report this issues to the concerned local department and see that they are engaged in this work properly.

6. **Statement:** Develop a application for fetching village statistics in all domains of their lifestyle and

Domain: Infrastructure

Description: There are many villages that are facing too many problems on food, health, pollution etc. Villages should be positively grown, but to have proper functioning of villages, there is a need of an application which can provide every aspect of the village and send the details to the government for the betterment of the village.

Constraints:

→ The application should show the behavioural analysis of the village.

→ The application should be associated with Government for the communication.

→ The application should also be providing suggestions that can improve the condition of the village.

→ There should be a overview of the conditions in the village and prepare a question are of yes/no and this should function even without an internet facility.

7. **Statement:** Develop a strategy to minimize the waiting time at toll gates and efficiently handle all other functionalities.

Domain: Infrastructure

Description: The major problem faced at toll plaza is delaying the travel time which many include many consequences. Increasing the number of toll lanes at the plaza does not address the problem. The application must be able to reduce the waiting time at the toll plazas, by using some latest technologies.

Constraints:

→ The design must ensure it accepts Cashless Payment and all banking cards.

→ The design must have the details regarding Vehicle registration.

→ When source and destination are mentioned the path and total cost for the trip along with toll gates costs should be mentioned forehand.

→ The user must also have a trip with minimum toll and also must be given the predominant route with such benefits.

→ The design must be cost efficient and also have functionalities related to the statement.

8. **Statement:** Design a software that can analyse the user input and then generate the needed mixing statistics for concrete.

Domain : Infrastructure

Description: While we use concrete for construction there are different compositions of the material that lead to various added benefits in concrete. For example, when mixed in a particular ratio the concrete takes more time to get solidified which helps in transporting the concrete for long distances. This solution has to be precise in identifying the amounts of the materials that are required for the construction/building in the similar way.The compositions must be predicted taking following components as an input : grade designation, type of cement, maximum nominal size of aggregate, minimum cement content, maximum water-cement ratio, workability, exposure condition, method of concrete placing, degree of supervision, type of aggregate, maximum cement content, chemical admixture type.

Constraints:
→ Please make sure your inputs must provide a good ardent mixture of concrete and display all the needed percentage mixtures of contents.

→ You must create a interface between a user and expert system for better mixture predictions in case of given available contents.

→ You can also include your own kind of implementation to accomplish this task but make sure you also take local conditions into consideration.

→ Employ a mechanism to identify the proper contents needed for the user preferences also in case the user is unaware of the contents to be used.

9. **Statement**: Detecting anomalies in fluctuation of voltage using IOT devices.
   Domain: Infrastructure

Description: In the electric environment where there are chances of voltage fluctuations and incidents like short circuits in the areas like highly dense population, apartment, factories, cold storages etc. to prevent this occurrences you must employ a device where it can detect anomalies in voltage using IOT as its feature.

Constraints:
   → It should stop the flow of current in case of a voltage fluctuation.
   → The device must detect and point out where the anomaly occurred.
   → The solution should find if there is an alternative binding that can be done in case of emergency situations (hospital etc.)

10. **Statement**: Develop a machine learning algorithm to identify objects and anomalies using traffic images and assess the quality of roads.
   Domain: Infrastructure

Description: Due to the road renovation works and condition of roads during monsoon climatic seasons we are witnessing many accidents and loss of lives. It would be very useful if a person aware of road quality ahead and get suggested at what speed he should go at a particular place.

Constraints:

   → Make the user know at what speed they have to travel on the roads, based on satellite imaging.

   → It should be able to detect all conditions of the road like potholes on roads, lane width, pedestrian space, cycling lanes and tracks, road encroachments etc.

11. **Statement:** Develop an automatic queuing system for both ticket and check in phases of the airport management.
Domain: Infrastructure.

Description: With the long waiting queues and increasing consumption of public transportation from day to day, we need to have an automated system for handling these issues. We can also minimize the operational and management costs and thereby also help in the financial progress of the organisation. The people must also have a sound nature to adopt to this kind of solutions.

Constraints:
   → Estimate the various statistics of the solution in replacing the traditional system with this solution.
   → We should have a feature that collects feedback or review for this system where the user is free upon to make a suggestion or a review.