# Project Definitions IT214 - Sept 2020

**Section 1 Mayank Patel**

1. **COVID Patients & Vaccine development Tacking  Database**
   In the current COVID-19 pandemic, it is essential to keep track of the patients. Build a database for an app or website, which can keep track of new patients. It should be able to suggest and allocate the patients the nearby special COVID wards. Keep track of available resources like doctors, nurses, ambulances, ventilators, and other things on the hospital side. The user side app should be able to give necessary information about the COVID patients detected nearby. Discover other aspects and try to include them in your application like general announcements, deployment of resources to heavily affected locations, etc.
   In the era of viruses, vaccine development is crucial. In the last decade, we have seen many different types of viruses, like Ebola, SARS, COVID, etc. Many companies or organizations start the development of vaccines but they can not conclude the final result due to long vaccine development time, different trial phases & less patients. Need to make a website/app which can keep track of patients & vaccines. The database should be able to store most details related to real-world scenarios, starting from virus information, affected areas worldwide, patients count, vaccine trials, their results, researchers working on it, & cost of final production of vaccine.

2. **Pandemic management Database from Govt. side**
   This COVID pandemic has shaken many government bodies completely. The lack of management has also surfaced in many places. Build a database for application or website that can connect important government bodies together for better handling of such emergency situations. Starting from government announcements, tracking and reducing fake news, lockdown management, migration of people during the lockdown (international/domestic), ration/food supply to people in need, etc should be managed efficiently when using the application/website. The system should be able to show the resources allocated to heavily affected areas like Police, Ambulances etc. The system should also keep track of all the efforts done by all the government bodies and their interconnections including Govt. staff announcements/task management.

**Section 2 Aashish**
3. **Animal Shelter Management System Database**
   An animal shelter management system for animal shelters, rescue groups and animal control facilities. Create an animal shelter database to help enable them to manage business operations efficiently and effectively while reducing friction in the pet adoption

process. Animals that are lost or abandoned are kept in animal shelters while finding potential adopters to input data about themselves and be matched to a pet that fits their lifestyle. It should be accessible to users and administrators.

4. **MOOC Management System Database**

A MOOC management System that instructors, learners, and system administrators find easy to work. Create a MOOC database to help administrators to coordinate with university and Students of courses. Courses includes video lectures, reading, quizzes, discussions, project , assignments, tests. Include details regarding specialization details, course details, student participation, instructor, institution, Student

## Section 3 Pratik Patel

5. **Car rental Database**

Car rental businesses provide vehicles and other automobiles for hire at a fee, normally charged either on an hourly or a daily basis. Because of the convenience of moving around with a car, car rental business is booming because there is increased demand for vehicles for hire. For those individuals that own a car may use car rental services when their cars broke or waiting for insurance clearance whereas for those that do not own a car may need to use a hired car to get to their destinations rather than using public transport. For these reasons, the car hire business is growing, most car rental businesses now have multiple outlets in various cities, and hence the need to have a well-designed and intuitive system that car-hire companies can use to managestaff, vehicles, drivers, and customers. The database should also keep track of vehicle instances, services to conclude the profits.

6. **TV channels management Database**

Create a TV channel management system. It should consider every thing that requires for any types of TV channels to work. Movies, News, TV shows & Music channels can be different types of channels. All these channels have different content, different shows, their actors & their handling. Make sure to cover all the information regarding TV channel management including employees wages, maintenance and other things. For example, News TV channels also have vehicles so every such detail needs to be considered while calculating the channel running costs and they also need to keep record of their profits from rights selling to advertisements.

7. **Prison Management Database**

   Design a database system which helps in management of prison functionalities such as prison administration system. Maintain details of information of each prisoner. Maintain details of tasks performed by inmates. System should help in scheduling work for each prisoner, sleeping time, lunch time, their earnings, meeting with the Superintendent etc. Give the clear idea about security of the prison. In case of any problem or issue, the respective person should be informed.

8. **Natural resource Tracking Database**

   Design a database system which can keep track of the resources of the nation like water, electricity, gas, petroleum, gold, coal, river-sand from locations in the nation. System should be able to estimate when resources will be empty based on the data and specific resource production and usage rates. It should also keep track of businesses, human population and calculate resources used by them each day, month. For this calculation, the system can also keep track of utility bills and other stats. System should help in deciding which resource to import/export.

9. **Vehicle Trade Website Database**

   With the internet becoming more and more of an integral part of our lives, it's as if everything can be done on the internet. Online buying and selling of vehicles is no exception. Develop a system that makes it easy for buyers and sellers to get details of the vehicles. Maintain records of all buyers and sellers along with complete details of the vehicles on sale. The buyers get delivery at local branches. Hence, store details of the branches. Also record transactions after negotiations. You can also log unsuccessful negotiations.

10. **Space Agency Database**

    Design a system that helps space agencies like ISRO, NASA to track their missions, findings, and space element movements. Keep track of satellite heath, positions and services. It should also keep track of stars, planets, black holes, moving stars, big asteroids and notify the scientists when some event occurs, or alert about the future collisions with earth or other entities. This system should be able keep track of their

experiment and outcomes. When needs arises different agencies should be able to work-together to complete the mission.

### 11. Blood Bank Database

Create a database project for a Blood Bank. You should start by adding donor names and assign them unique IDs. Add their details and relevant information such as blood type, medical report, and contact number. Similarly, add patient names with unique IDs, details on their medical conditions, and blood types.  After you've created a database of patients and donors, you can work on a database for the blood bank. There, you'll have to add the name of the blood bank, its staff details, operating hours, and address. For adding confidentiality and security to this, separate accounts are maintained for each type of user by providing them an ID and a password.

### 12. Insurance Company Database

The insurance company needs to keep track of details of its target companies or other competitions and the policies they are offering, manage agents that have been employed by the company, manage policyholders that have applied to the company for a policy, their premium payments and various products, payments history so that payment faults can be identified etc. The databases should also be able to suggest the best policy based on certain criteria taken from the customer. For more secure selection of policy separate accounts are maintained for each type of user by providing them an ID and a password.

### 13. Military Equipment Management Database

You have to manage military equipment for Indian Armed forces. Which will keep track of all equipment provided to all the troops, in storage & factory capacities of new weapon assembling. In addition to that, handle the import and export of equipments.Store the data about the troop who has different types of equipment registered to him/her. Handle all the cases i.e. new deployed equipment, old removed equipment, etc.Also store the data about the equipment i.e features, type, etc. This database will be able to provide all the information about the equipment and the owner too.

### 14. Visa Processing Management Database

Here you have to give the solution for managing the database of visas. In this, you have to provide info. about the user who registered for visa (user) and also maintain the database such that the Government can access the all user information. Government can easily track the status of a visa for a particular user. Also store the data about the history of applied visas for users. This database has to provide and manage the information about visa applications, accepted visa, rejected visa. Also required to store the information about the processing stage of the application. You have to include which type of visa you are applying for, application details , appointment details, consultant details, etc. Every user can track the status of their application easily so you need to create an account for individual users.

## Section 8 Parth Patel

### 15. Gardening Management Database

Prepare a database to manage gardens across campus/institutes/hotels. Store all the information related to gardening which is needed to manage such systems.The gardener who manages the garden,gives water to plants.Database should contain details about the different variety of plants ,its fertiliser, the best suitable season for its maximum growth.There should be details about the timing of watering for those plants. Fertisers should have its price and nature.Various tools are required for gardening and their details should be stored. Automate the watering using IoT devices and keep track of all the details like which plants were watered, how much fertilizer was given. There are moisture measuring sensors and soil checking sensors which can automatically record the details and help to automate the process. The database should record all the readings from sensors and the decisions taken using those sensor readings like how long to water the plants.

### 16. Recruitment management Database for a company

In our society today, the issue of managing recruitment in firms, companies or organizations is a great challenge to the management.A recruitment management system is a comprehensive instrument to manage the entire recruitment processes of an organization. It is one of the technological instruments facilitated by the information management systems to the Human Resource (HR) of the organizations. Just like performance management, pay roll and other systems. Recruitment Management System helps to control the recruitment processes.Recruitment process requires details of vacancies, candidates, their online scores, interviewers, interview details, etc. Design a database to manage the recruitment process of a company.The system should provide service to the potential job applicants to search for working opportunities.also it will help

HR Personal in the recruitment of new candidates to the company.The details about various jobs and their details like CTC are important for the system. Database should store candidates details securely.It should provide hiring managers details and their experience profile. It should allow job seekers to enter their details like skills and experience.

**Section 9 Jash Rathi**

### 17. Online/Virtual Classroom management Database

A virtual classroom is helpful to share knowledge via the internet. Prepare a database to handle such virtual classrooms.

The teacher can create a classroom for a particular subject. He/She can add students(who have registered for the subject) and respective Teaching Assistants to the classroom. Using Classroom, the Teacher can conduct the lecture. The lectures and lab are scheduled every week. Labs are conducted by Teaching assistants. Any Assistant can post any number of assignments in the classroom with the deadline. Students are supposed to submit an assignment by the due date. After submission, students are given grades based on their performance. The teacher can arrange a doubt session for students if students are facing any problems in addition to the lecture and lab hours. Students can also post their doubts in the classroom. These Doubts can be solved by other students, Teaching assistants, or Teachers. Also, the classroom maintains the attendance sheet of labs and lectures. Create an ER diagram to include described functionalities of the classroom and keep track of every detail in the database.

### 18. Research work tracking Database

For PhD  fellows or Researchers working in Companies doing research to develop some specific product have to manage many resources and references. For example, PhD students need to keep track of Research papers, their summaries, presentations, results etc. In companies also researchers also have to do similar research & keep track of patents for some specific projects & build new products. They also need to patent the prototypes developments. Create a database that can store such details and make the life of a researcher easier. One researcher can work on multiple projects and one project might have multiple sub projects including many researchers from different institutes.

### 19. Customer care database

An online Customer Care Solution is to manage customer interaction and complaints with the Service Providers over phone or through and e-mail. The system should have capability to integrate with any Service Provider from any domain or industry like Banking, Telecom, Insurance, etc. Customer care includes services to customer queries and problems via phone, letters, e-mail or any other medium. Prepare a database for the customer care system. It should cover employees, their service calls, repairs and replacements of parts, warranty of produces and costs. In this system there are three modules: Admin , customer , service provider.Admin can track the customer complaints ticket created, edit facilities by customer or service providers. Admin facilities to add, view, edit different types of interactions and complaints.

### 20. Cloud/In-house Data centre management Database

All the websites that we use are either hosted on public or private servers. Many companies provide such hosting services, and many companies keep their own server farms to keep their websites live. Create a website/system that can cover each aspected for managing such facilities. It should include online selling of services as well as maintaining actual resources like machines. Keep track of their faults, life-time of hardware and replace them when needed. Query on the database should be able to tell how much profit was made.