****

**2023 – T1 Hack V 2.0**

**Usecase 1: Virtual Health Assistant**

**Objective:**

VMedico is an online medical services company recently established by a pharmaceutical company to enable not only tele-consulting services integrating doctor and patients but also to integrate laboratory reports and to monitor the health of patients.

**Functional Requirements:**

* Build an application that can be integrated with multiple hospital, health care providers and testing laboratories.
* Provision to capture the patient details and their doctor details
* To capture prescription details and next appointment date and to send automated reminders.
* To track laboratory results and to monitor heath details of patient.
* Automated email notification to the doctor and patient
* Tracker to track the status of action items in the subsequent meeting

While the above ones are the basic functional features expected, below ones can be nice to have features:

* TO track health details of patients
* To send medication reminders

An audit trail to include the history of meetings and individual action items.

Admin module for user administration and task updation.

**Input/ Pre-Condition:**

* An integrated platform that could connect patients with specialized medical practitioners.
* Platform to be connected with help-line numbers and the database of hospitals, doctors and their respective specializations.

**Output/ Post Condition:**

* Records Persisted in Success & Failure Collections
* Standalone application / Deployed in a app Container

**Usecase 2: Smart Tutor**

**Objective:**

VGuru is an online academic services firm and their goal is bring in online education across India across various curriculums.

**Functional Requirements:**

* Build an application that helps students as a learning platform, that include language, specific subjects such as Maths, science and even better help student to engage with the school activities.
* Should be catering to the education needs of students of all grades.
* Pre-K level to include provision to learn new words and other story related learning
* For older students, app to focus on board subjects
* Application to offer more activities, quizzes and puzzles to make learning more interesting.

While the above ones are the basic functional features expected, below ones can be nice to have features:

* Progress tracker
* Report to the mentor and parents
* Multi factor authentication for sign-in process

**Input/ Pre-Condition:**

* An integrated platform that could connect patients with specialized medical practitioners.
* Platform to be connected with help-line numbers and the database of hospitals, doctors and their respective specializations.

**Output/ Post Condition:**

* Records Persisted in Success & Failure Collections
* Standalone application / Deployed in a app Container

**Usecase 3: Agile Meeting Dashboard**

**Objective:**

VSoft is a software company specialized in multiple project management products and their next venture is towards building an integrated Agile Meeting dashboard.

**Functional Requirements:**

* Build an application that can be integrated with enterprise email server and chat server
* Provision to capture the meeting notes date and time-wise with an automated meeting title (which can be edited on need basis)
* Provision to convert one or more meeting note into an action item and assign it to the team members
* Automated email notification to the assignee
* Tracker to track the status of action items in the subsequent meeting

While the above ones are the basic functional features expected, below ones can be nice to have features:

* Over due reminders
* Highlighting pending action items

An audit trail to include the history of meetings and individual action items.

Admin module for user administration and task updation.

**Input/ Pre-Condition:**

* Capture data integrated with the meeting invite (Microsoft outlook/ Teams) and automatic notification system to email the action items to the respective owner.
* Integrated dashboard to track the status of pending activities

**Output/ Post Condition:**

* Records Persisted in Success & Failure Collections
* Standalone application / Deployed in a app Container

**Usecase 4:** Task scheduling

1. At present, Adani operates more than 45 Berths PAN India and approximately 4000 Vessels calling at our Port.  
2. The vessel agents share the ETA(Estimated time of travel) by which Port Authorities manage the resource and estimates the TAT.  
3.Vessel TAT are dependent on various Factors like the productivity, resource allocated, Tide etc.  
4. The solution should be such that the Port Authorities are able to effectively predict the Optimum TAT which yields maximum revenue by clearly optimizing the resources used.  
Relooking at the problem:  
1. Can out Current Terminal Operating system (TOS) predict using the available data points?  
2. Do we require an analytical engine to run algorithms?  
3. Will Live Dashboard help to control & monitor the Vessel Operation?  
4. Say our current prediction is 70% accurate we would definitely want to increase the prediction accuracy by 10%.  
5. All vessel related information, resources & Tariff for maximum revenue will be provided. Connections to our DB and Data warehouse access are possible. If we look at the entire process:  
1. Vessel agent submits the ETA 2. Port Authority does the berth and resource planning. 3. Operations are undertaken. 4. Changes in Planned TAT. 5. Revision in TAT 6. Other Vessels incoming are affected by such changes in TAT. 7. New TAT Prediction for other incoming vessels.

**Usecase 5: COVID19 Patients Monitor**

Develop an application to monitor the COVID affected patients who was been isolated in their home and monitoring them remotely. The patients are undergoing treatment from their home since there was scarcity for the beds in the hospitals.

The application should send live monitoring data from the monitoring devices to the doctor portal(Please mock the data through some easy source). i.e. If the pulse rate or blood pressure rate, body temperature not inline with the recommendable range should send the alert to the doctors.

Admin Modules to manage the doctor profiles patient profiles monitored data.

The application should have a best UI/UX platform.

**Usecase 6: Cab Booking Application**

**Objective:**

VCabs, an emerging rental cab services across India and planning to extend their presence across their globe. They are planning to host a cloud based application for integrating the cab services among customers, drivers and administration offices.

Develop an application that can be used for booking cabs, connecting the driver and the passenger to book or to schedule a ride. Application will connect with the stream of data suiting the location requirements. Include Billing and cancellation of requests as well.

The solution should address the below requirements as well

* Maintain internal in-memory static data for streaming cab locations
* High Response Time
* Scalable design
* Audit and Logging
* Transaction support
* Proper Exception Handling

Proper Coding Standards

**Additional Requirements :-**

Streaming Data ex

* Location details of nearby cab
* Billing based on distance

Application log details feed etc

**Usecase 7: DlVery**

**Objective:**

The customer DlVeryis into logistics domain and operating in Tier1 cities in India. As part of their expansion plan, they are planning to expand their operations to selected Tier 1 and Tier 2 cities. The current application which is handling the logistics management has limitations in terms of handling product inventories, delivery tracking & other product customization. As part of the overall initiative, its planned to revamp their existing portfolio of applications in latest tech stack and wants to reach out to all segment of customers.

The application in scope would be accessed by DLVery internal team, team who are in the ware house, and delivery agent who is on the ground to deliver the consignment to the end customers.

Your have been requested to develop a web application with following functionalities

1. Login Page
   1. Inventory Team(InvTeam) Login – DLVery member who manages the inventory in the warehouse
   2. Delivery Team(DLTeam) Login –DLVery’s delivery agent who delivers the consignments to their end customers
2. Inventory Module (accessed by InvTeam)
   1. Inventory Management
      1. User can enter the inventory details as and when goods move in or move out from the warehouse
      2. User can upload the inventory file
      3. At any point of time the user can check the available inventory in the warehouse
      4. Able to distinguish the products by
         1. Product Category
         2. Damaged or Not Damaged
         3. Perishable
         4. Expiry Data
      5. User will able to update the inventory when any product is taken out for Delivery the delivery agents
      6. User will be able to track the delivery against the product SKU or by delivery agent
      7. Reports
         1. List of goods that were delivery in the given date range
         2. List of damaged goods in delivery transit
         3. List of pending delivery by each delivery agent
3. Delivery Agent
   1. The app being used by Delivery Agent should responsive in nature, and should work in multiple devices
   2. The agent would be able to see what his today’s delivery list and also shows any past pending delivery
   3. The agent is presented with delivery priority, for example the perishable or essentials products or emergency product etc
   4. Upon delivering the consignment, the agent will capture the Customer’s name and signature
   5. In case of “Door Lock”, the Agent can update the status on the app about the missed delivery
   6. In case of Damaged Delivery or return delivery, the agent can update the status accordingly and return the item to the warehouse.

Additional Requirements :-

1. The delivery application should be made responsive and would be hybrid in nature. It will run on the agent mobile.

**Usecase 8: CopFriendlyApp - ESeva**

**Objective:**

As part of Government e-Seva initiative, an application for Police personnel is being planned to assist the force who are in the ground who controls & regulates the traffic and helps the people who are in need. The application is primarily used by traffic cops, with integration with other sub departments of security & public agencies such as RTO, Central Ambulance Service, and other investigating agencies.

The primary aim for developing this application is to enable quick availability of information & details, thus enabling the concern team to co-ordinate & collaborate with related agencies. And also this enables the team to a quick& effective decision, rather than delaying due to missing information’s.

The application is categorized into

* Traffic Cop App
* Traffic Central Team
* Medical Rapid Force Team

The modules under these categories are

|  |  |  |
| --- | --- | --- |
| Category | User | Functionalities |
| Traffic Cop App | Traffic Sargent  Traffic Inspector | * Login to the Portal – with username and password * Register a TrafficViolations or Violators   + Capture details such as   + Violators Name   + Violation Type   + Driving License   + Vehicle Details – Car/Bike/Lorry/Reg Number/Color/Taxi or Private Vehicle etc   + Data and Time   + Location – Geolocation is preferred   + Repeated Offender   + Others * Issue a Ticket   + Select a Violations created above, and issue a fine ticket * Accept Payment – against fine   + Accept the payment via digital payments * Register an Emergency   + Following details are captured   + Register the location   + Type – accident, people who are in medical care   + Number of people affected   + Priority * SOS - A button to get help from other fellow police men |
| Traffic Central Team | Traffic Central Team | View the dashboard of details such as   * Traffic Violations * Fine collected * Send Help Team in case of SOS |
| Medical Rapid Force Team | Medical Emergency Central Agency | View the Dashboard for   * Medical Emergency Requirement& send Ambulance or other teams to the location |

**Usecase 9 - ChatBot–Moratorium Customers**

In the COVID-19 situation many customers availed moratorium on the different types of loans from the Bankers. The Bankers business decided to launch a chat bot application to collect the statistical data, scenarios and the reasons, why the customers applied for the moratorium and when they will get back to the normal situation. The economical condition of the customer on this pandemic. Do the customers looking for any other options to settle the loan dues or want to continue. The application should able to identify the mindset of the customers by raising multiple queries and options via the chat bot application.

The application should able to store all the feedback/response details provided by the customers. The Banker will do the analysis based on the stored data and update the customer profile accordingly.

The application should have a best UI/UX platform.

Usecase 10 : Better and faster emergency care during accidents and Covid 19

When an accident will take place, an alert signal will be sent from the mobile of the driver to our system that will send an ambulance to the site of casualty. This system will be designed in such a way that will efficiently and seamlessly connect all three stakeholders that are involved during an accident which are the Driver, the Ambulance and the Hospital. This system will save lot of time as nobody has to call an ambulance when the accident would occur. Our system will do it on its own and save lot of time and indeed lot of lives.

Use case 11: Crop Guidance and Farmers Friend

Problem Title : Helping the farmers in terms of Crop suggestion, precautions based on the met department forecast of rain fall / weather, potential pest attacks , weather warnings etc.

Agriculture is the heart of the social development of our country. Agriculture is much vital because it provides lively hood for majority of the population, most contributing to national income, gainful employment. The first challenge was to collect sufficient data to enable accurate analytics. Different datasets are required including of each crop in different districts. There are different sources through which the datasets can e obtained. For example, rainfall and temperature data are available for climatic regions (e.g.,Tamil Nadu) or for grid points at one-degree latitude and longitude increments on a daily or monthly basis.