# Main Assignment Problem Statement

Design and develop the cloud native application to solve the given problem. Associates are free to use any tools and techniques for performing the functionalities like scripts for loading and manipulating data, data modelling etc.

Associates has to design and develop the application using any one of the stack given below.

* Java – Spring Boot
* .NET core – WebAPI

**Problem Statement:**

A leading travel company maintains the online application “Online Travel Management System”. This system should manage the below functionalities:

* Customers should be able to login, book, cancel and track the ride
  + Login – User Authentication
  + New Booking Screen / Cancelling Booking
  + Tracking Ride – Completed / Pending Trip Details
* Employee should be able to login, register the vehicle, confirm the ride and view the summary of the trip details
  + Login – Authentication
  + Vehicle Registration
  + View / Approve Ride Request
  + View Summary
* Admin – Manage the application
  + Approve Vehicle Registrations
  + Role Management
    - Customer – Who Travel
    - Travel Agent – Who registers the vehicle and offers ride
    - Admin – Manages the whole application
  + User Registration
  + Reports
    - By Vehicle
    - By Travel Agent
    - By Customer

## Assignment 1 – Cloud Native Application (MC 1)

1. Design the MSA Architecture for all the functionalities of the application.
2. Develop the implementation for the module ‘Summary of Trip Details’ by considering all the parameters which is mentioned in the Evaluation Checklist section

* Summary of Trip Details – This module lists the trip details of employee.
* Admin should be able to view trip detail of all the employees.
* Employee will view only his/her trip details.

### Expected Deliverable

* Micro services Architecture diagram
* Application (Solution Codebase)

### Design Considerations

**General Design Considerations**

* + - * Implement Authentication, Security and API versioning
      * Application should not contain any vulnerabilities and need to exhibit at least one learning from the security learning module
      * Build the application with **TDD approach** and adhering to the coding standards with the **unit test coverage of 80%**
      * Design and Code need to be optimized for **performance**

**Cloud Native Design Considerations**

* + - * Design the architecture using Microservices principles by implementing **Domain driven architecture**
      * Apply **at least 5 out of 12 factor principles**
      * Application should not have any implicit dependencies
      * Design the UI using, Fluid/Fixed/Responsive Web design principles

### Evaluation Checklist

Verify your assignment with the below checklist:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No** | **Skills** | **Subskills** | **Proficiency level in designer role (1-Beginner 2-Practitioner 3-Specialist)** | | | **Indicative**  **Mechanism for Evaluation** |
| **Designer** | | |
| **1** | **User Interface** | HTML5-> JavaScript Platforms-> Responsive Web Design->UX Design->Cross-platform Support | **❶** | **❷** | **❸** | **Design, Coding** |
| **Middleware** | Java/C# /node.js Languages->Frameworks->Microservices-> Integration | **❶** | **❷** | **❸** | **Design, Coding** |
| **Data** | Persistence->SQL-> RDBMS->NoSQL->DBMS vs RDBMS vs GDBMS vs NoSQL | **❶** | **❷** | **❸** | **Design, Coding** |
| **12 Factor App** | Cloud Native Architecture/12 factor app principles | **❶** | **❷** | **❸** | **Design, Coding** |

Design Artifacts:

User Authentication & Authorization MicroService:

 