

SE Lab Assignment 1 (From Lab 1- Lab 6) (30% of QT2(Process Mark 2) : submit end of the Lab 7 week.

Requirements Specification for SE: Following statements are omitted ambiguous requirements for a Ticket Vendor Machine to sell a bus/MRT ticket (BenThanh metro) - part of a Smart Ticketing System.

- An automated ticket-issuing system sells public transportation (Bus, MRT, etc..). Users select their destination and select the mode of payment (such as Credit Card, QR Code payment linked with banking system or digital wallet).
- In case of payment with credit card then the ticket vendor machine issues a paper ticket with a bar code itself and their credit card account be charged. When the passenger presses the start button, a menu display of potential destinations is activated, along with message to him/her to select a destination. Once a destination has been selected, he/she is requested to input their credit card. When the credit transaction has been validated, the ticket is issued.
- The same for digital wallet means that the ticket vendor machine will show a QR Code after the passenger selecting a route for her/his mobile phone payment.

Assume you are a specialist in Software Development, you are required:

1. Ask question to make a clear for above requirements and write them in the **form of Excel (Q&A)**
2. Write a set of functional, non-functional and domain requirements for a Ticket Vendor Machine. You can conduct this exercise to **Excel or Word**. Remember to concentrate on expectations of reliability and response time.
3. Develop **Use Case modelling** for Ticket Vendor Machine, you are also encouraged to make Use Case Description for each use case on your use case diagram.
4. Make an **Activity diagram** to present the process of passenger's buying a ticket from ticket vendor machine (Look like ATM) and the activity diagram for communication among systems if your system is integrated with other system like Momo, VNPay, ZaloPay,...etc
5. Let's say that the Ticketing Vendor Machine have main use case: **Buy a ticket** then you are required to complete **the sequence diagram, State chart diagram, and Class diagram**
6. Design an either wireframe/mockup with **balsamiq** or prototype with **figma** for your use cases.
7. Develop **Architecture design (System in-a-box or MVC model)** and **Deployment diagram** for Ticket Vendor Machine
8. **Demo** any use case (*form for inputs, report for output*) with Visual Programming **C# and MSSQL**.
9. Upload all your work to **github**



Deadline: End of Lab 6 (Week6). Submission: (Group Assignment)- one member submits on eLearning. This will get 30% of QT2 (Process Mark 2), and an extra point consideration for final project.

- **YourID_YourStudentName.docx** with screenshot to explain your work-product
- **readme.txt** to contain link github, and other link if any
- **Make a .pptx to present your project (live on the theory class)**

Enjoy ☺ and Good luck. Copyright@2025-SE taught by @P.T.K.Trung : tg_phamthaikytrung@tdtu.edu.vn