SE Lab FAT, June 8, Winter Semester 2020-21, L9+L10

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FAT EXAM- CSE3001 – Software Engineering

Slot: L9 + L10

Time: 10 – 11:30 AM

Instruction

You can make Assumption based on the given system, but it should specified clearly in the Answer Scripts

1. **Define the scope of the project and assumptions if any [4]**
2. **Identify which process model is suitable for your system with justification[5]**
2. **Specify any three functional and nonfunctional requirement [6]**
3. **Draw a WBS [10]**
4. **Identify the stake holders [5]**
5. **Draw a use case diagram and Sequence diagram using any software tool [20]**

Given Scenario: Online Post office system

Scope:

My aim here is to create an interactive, maintainable, and efficient system to place, track and initiate payments for orders as well as store customer records for an Online Post office System. It is also within the scope of the project to allow users to register to our online portal, initiate orders for items, track those orders, generate reports and bill payments for the same

Assumptions:

- We are making a website with all the required features.
- The user can schedule a pickup for his post and it will be taken from him and delivered.
- There will be separate page for login and signup.
- The details of the parcel of the post have to be done beforehand.
- The payment will be cash on delivery.
- Easy UI/UX for the elderly people.

Process model:

For this project, I have used the 'Waterfall' methodology because of the following reasons:

- Users understand the software requirements well.
- Since the requirements of our project are well known beforehand, i.e they are documented, hence the requirements are laid and we prefer to keep things simple.
- Requirements are very well documented, clear, and fixed. Our requirements are simple and defined.
- Technology is understood and is not dynamic. The technology that we are using is very easy to understand and has been used by professionals for a long time.
- Product definition is stable. Since our project involves a series of flows, hence we prefer to use the waterfall model to avoid overlap of phases.
- The project is short. Since our project is short and there are no uncertain requirements.

The advantage of waterfall development is that it allows for departmentalization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one.
The waterfall model progresses through easily understandable and explainable phases and thus it is easy to use.

It is easy to manage due to the rigidity of the model – each phase has specific deliverables and a review process.
In this model, phases are processed and completed one at a time and they do not overlap.
Waterfall model works well for smaller projects where requirements are very well understood.

Hence, the waterfall model is ideal for “Online Post Office".

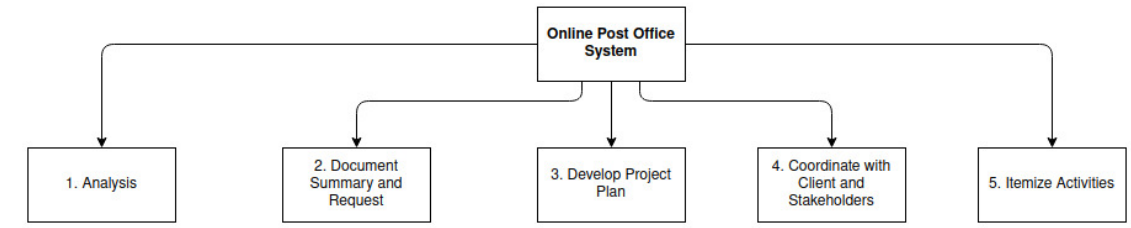
Functional requirements:

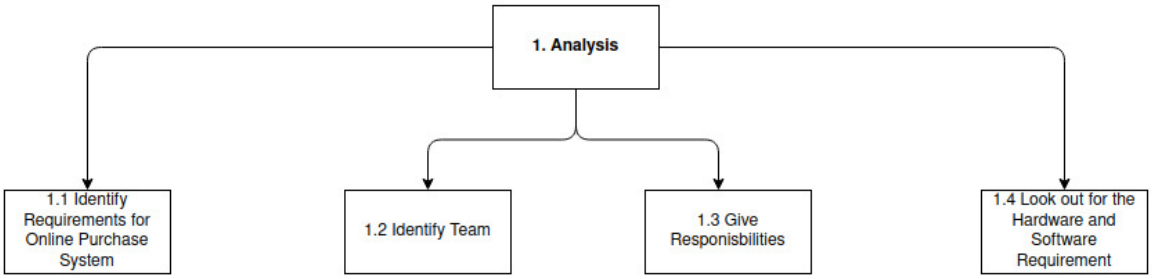
- Placing order online-order the material to buy from post office shop.
- Online payment of orders-after the customer order the material the system generate payment page the customer can perform payment online without go to the post office. It reduces the time of the customer and reduce work load of the staff worker.
- Report generating of the administrator and manager can generate the report daily, weekly, monthly report.

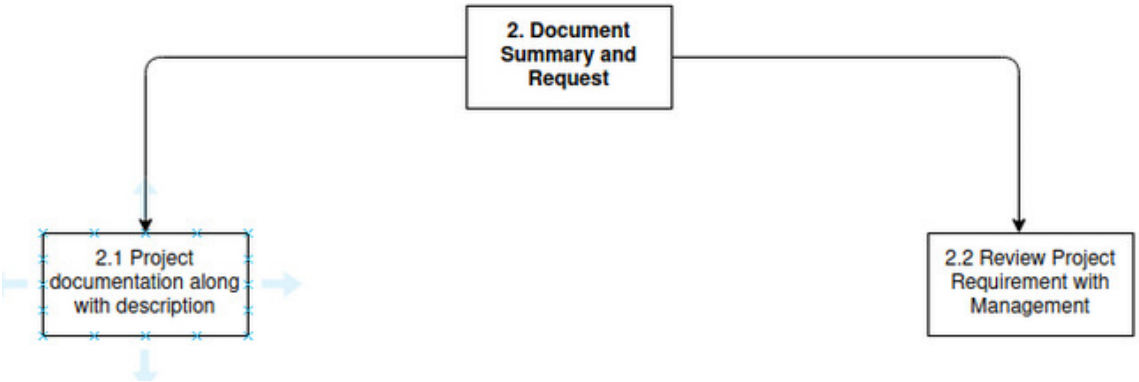
Non-functional requirements:

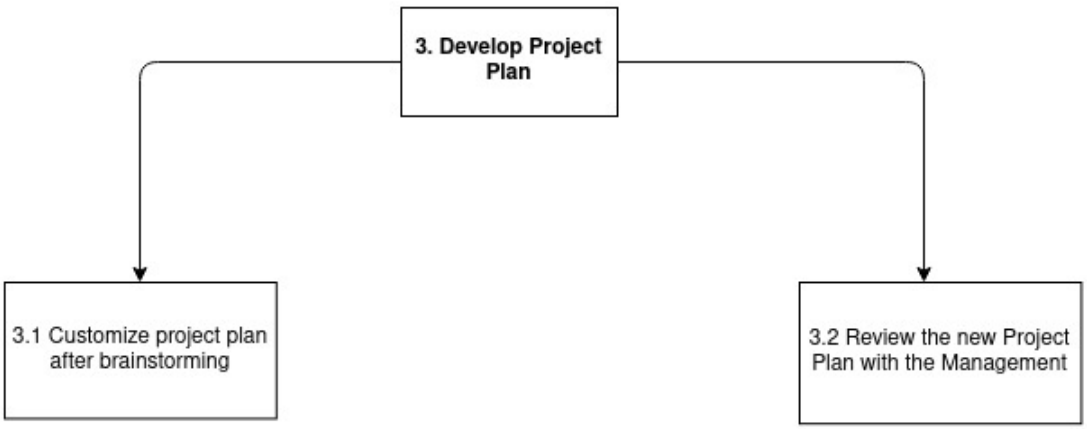
- User interface: since users of the system involved people with different back ground, the system should be made with user friendly window type.
- Performance and Access time: The system will provide fast access to the customer according to their privilege.
- Security: the system should enable to task a backup at any time in point in point and able to restore from backups.

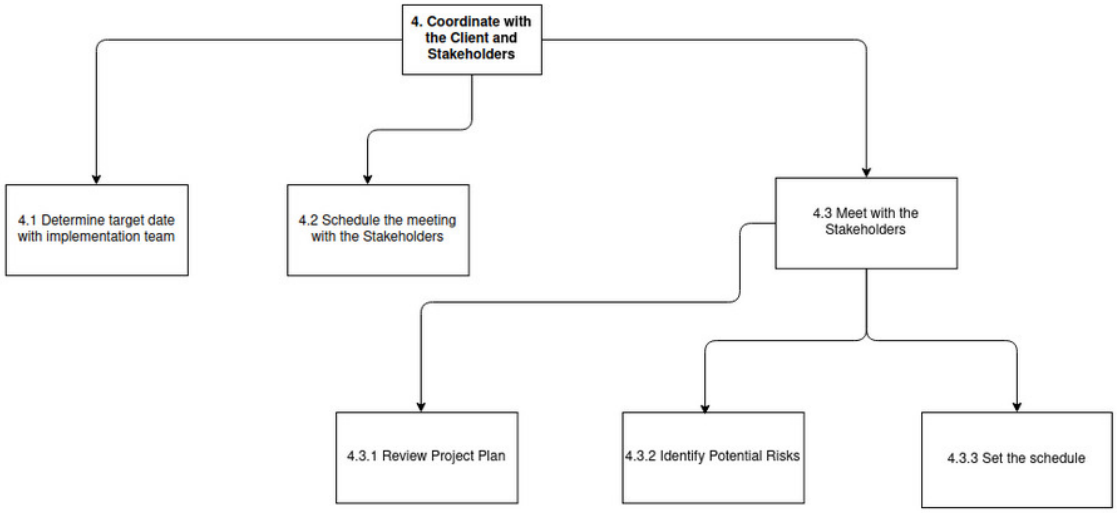
Work Breakdown Structure:

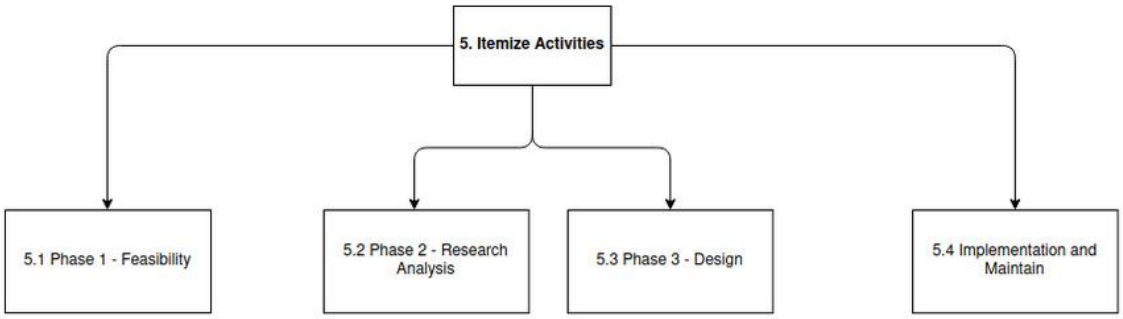


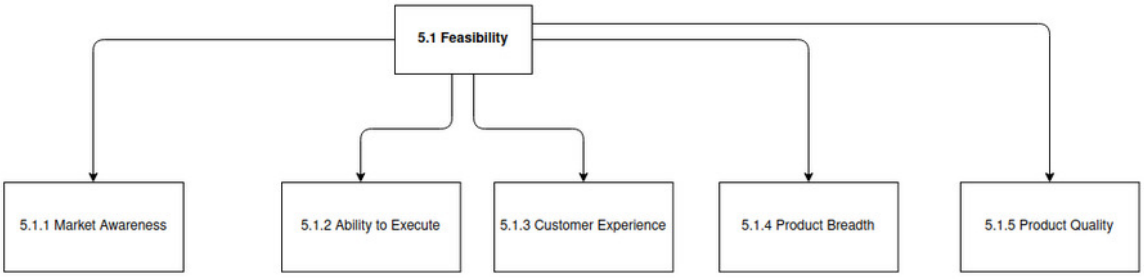


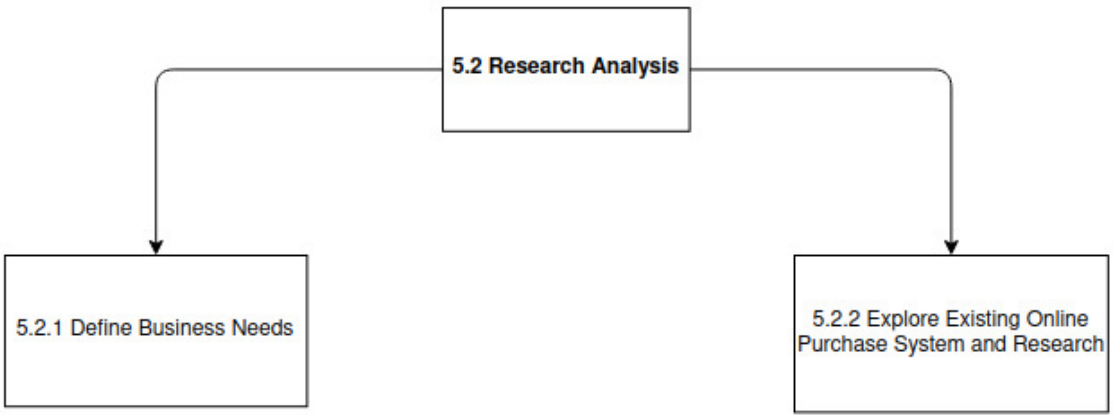


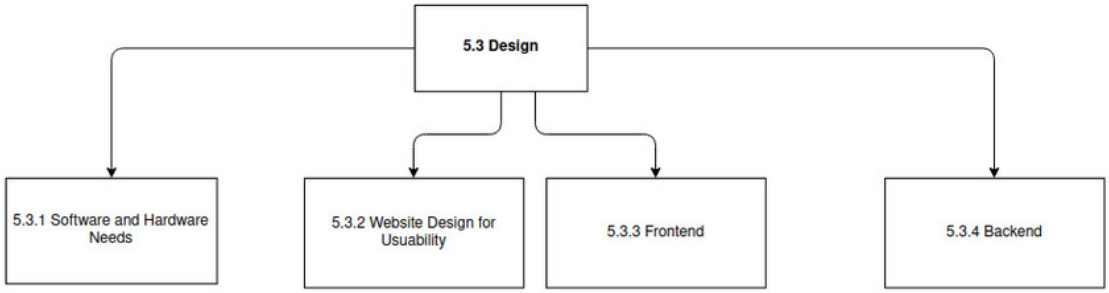


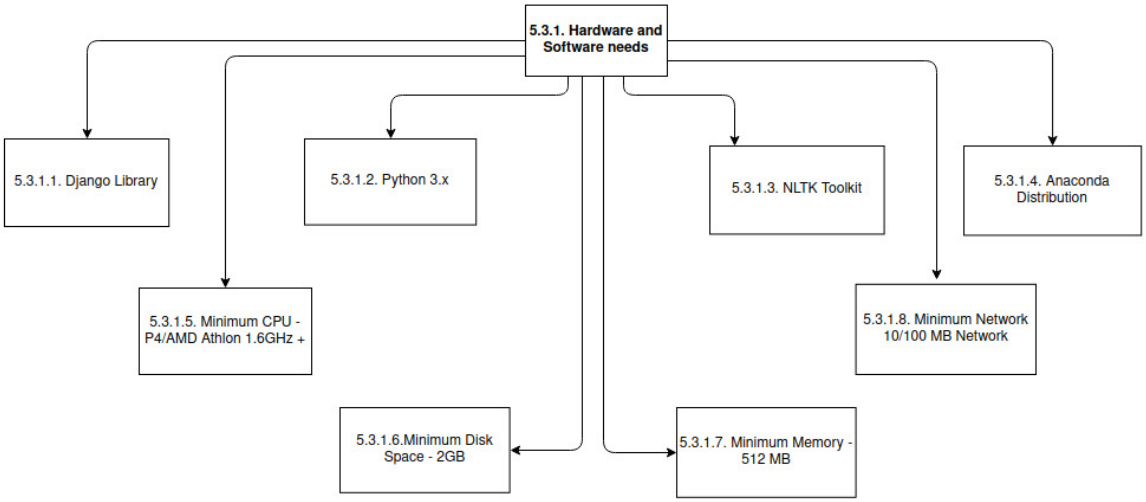

4. Coordinate with the Client and Stakeholders
4.1 Determine target date with implementation team
4.2 Schedule the meeting with the Stakeholders
4.3 Meet with the Stakeholders
4.3.1 Review Project Plan
4.3.2 Identify Potential Risks
4.3.3 Set the schedule

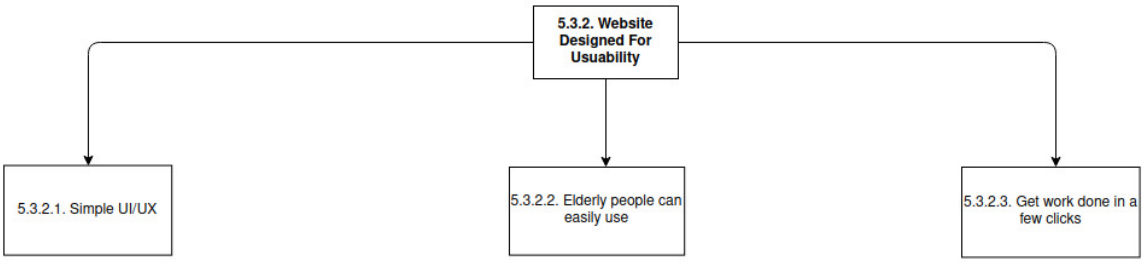

5. Itemize Activities
5.1 Phase 1 - Feasibility
5.2 Phase 2 - Research Analysis
5.3 Phase 3 - Design
5.4 Implementation and Maintain

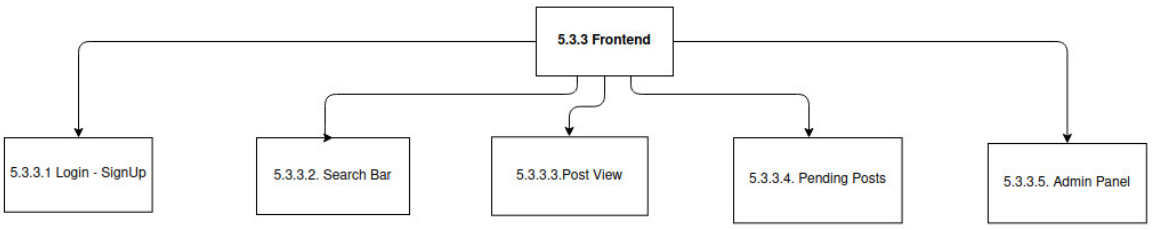

5.1 Feasibility
5.1.1 Market Awareness
5.1.2 Ability to Execute
5.1.3 Customer Experience
5.1.4 Product Breadth
5.1.5 Product Quality

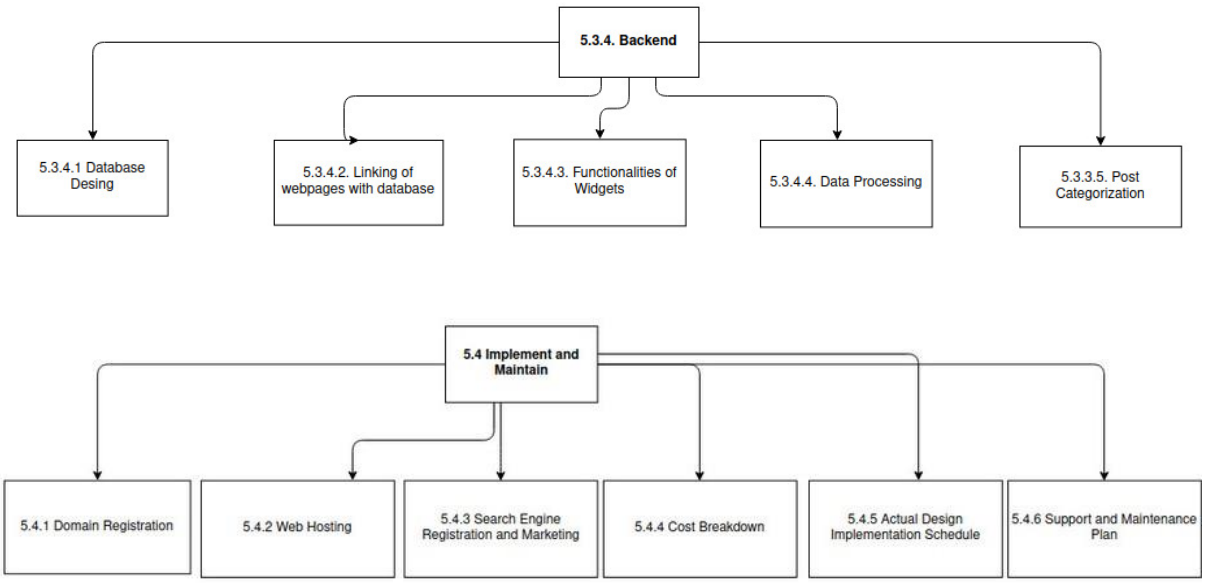

5.2 Research Analysis
5.2.1 Define Business Needs
5.2.2 Explore Existing Online Purchase System and Research


5.3 Design
5.3.1 Software and Hardware Needs
5.3.2 Website Design for Usability
5.3.3 Frontend
5.3.4 Backend


5.3.1. Hardware and Software needs
5.3.1.1. Django Library
5.3.1.2. Python 3.x
5.3.1.3. NLTK Toolkit
5.3.1.4. Anaconda Distribution
5.3.1.5. Minimum CPU - P4/AMD Athlon 1.6GHz +
5.3.1.8. Minimum Network 10/100 MB Network
5.3.1.6.Minimum Disk Space - 2GB
5.3.1.7. Minimum Memory - 512 MB


5.3.2. Website Designed For Usuability
5.3.2.1. Simple UI/UX
5.3.2.2. Elderly people can easily use
5.3.2.3. Get work done in a few clicks

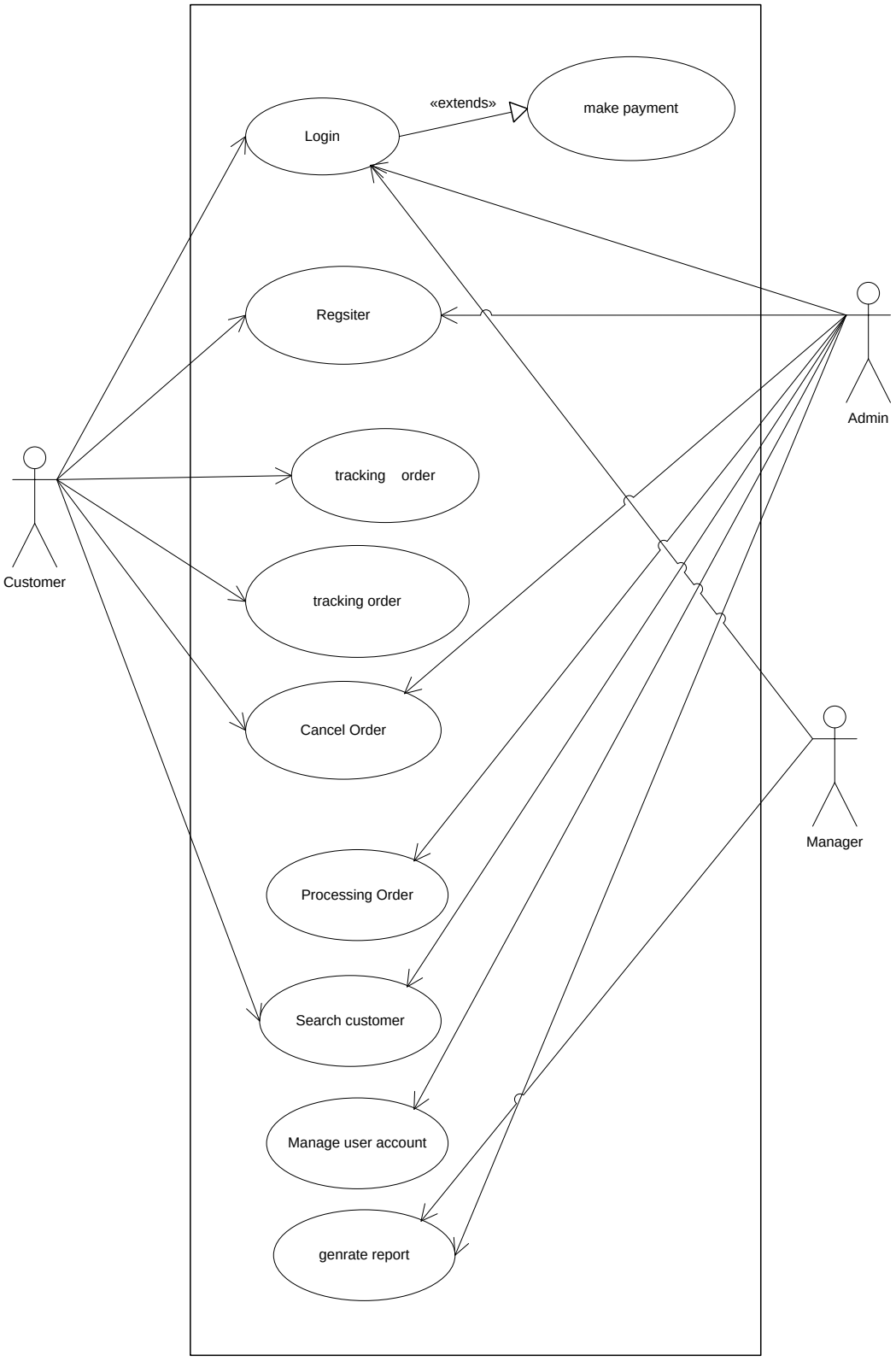

5.3.3 Frontend
5.3.3.1 Login - SignUp
5.3.3.2. Search Bar
5.3.3.3.Post View
5.3.3.4. Pending Posts
5.3.3.5. Admin Panel



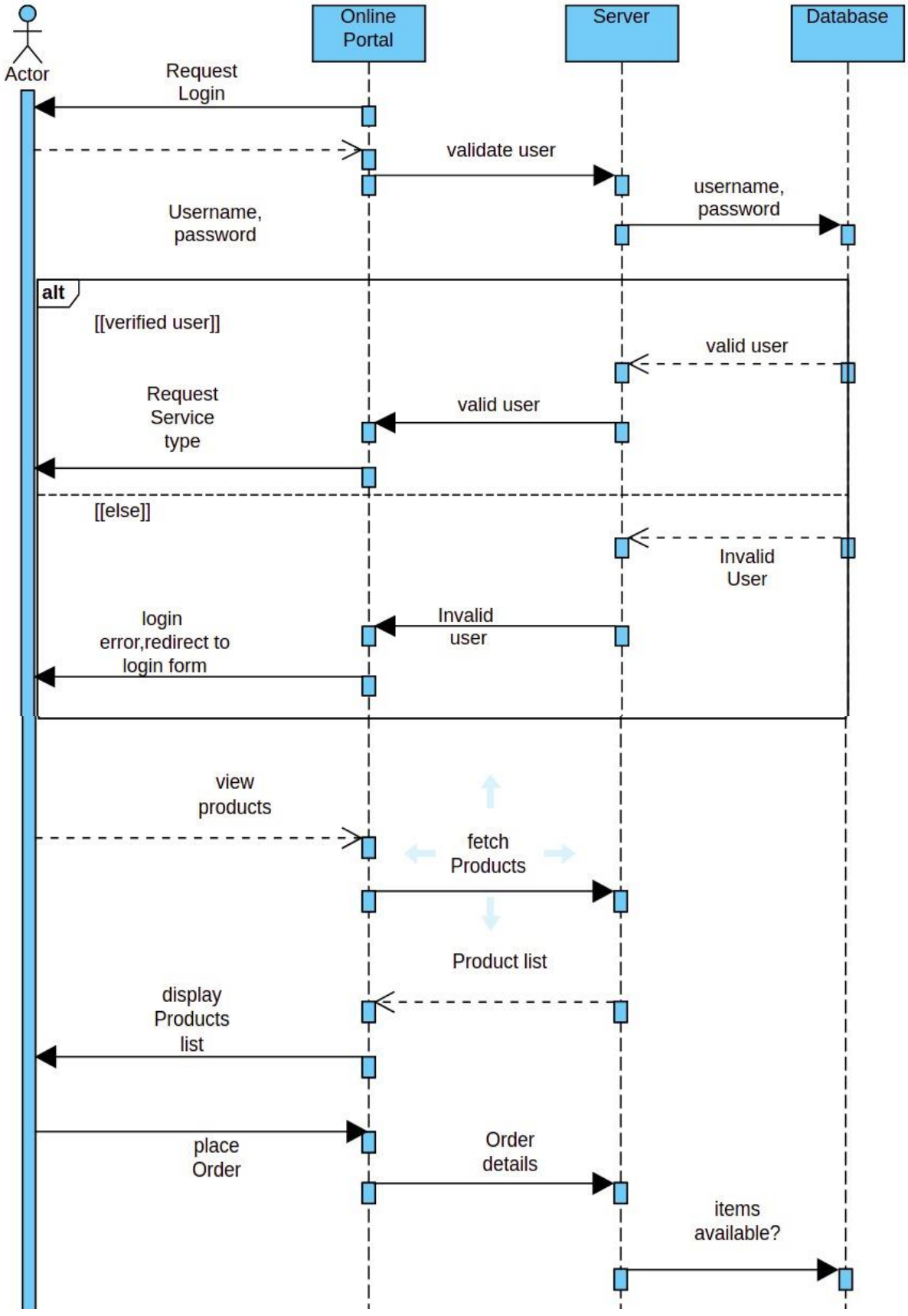
Stakeholders:

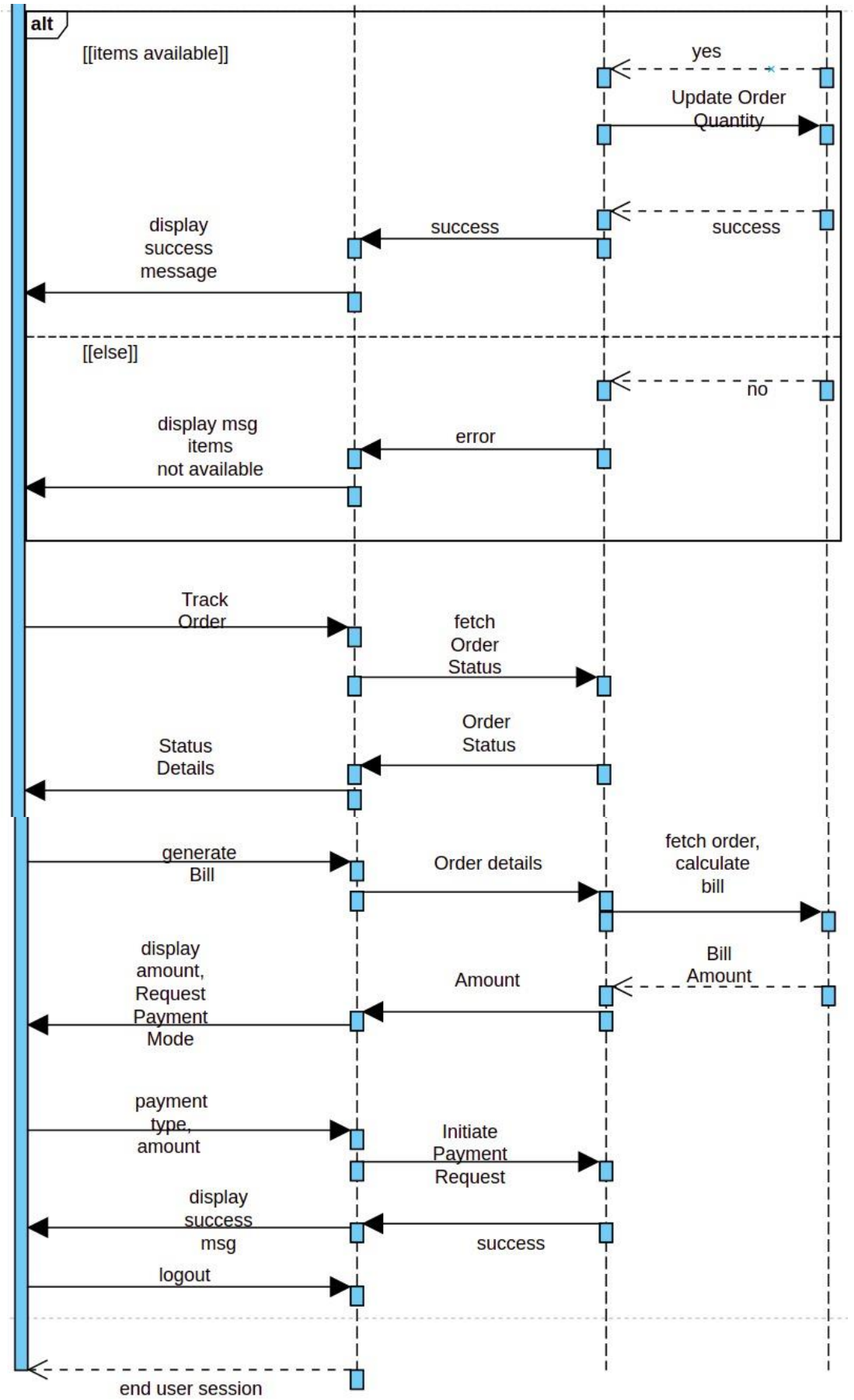
- Admin: Manages Employees Information and the website
- Sender: Sends the package and pays the charges also can track.
- Receiver: Receives the package and can track the package.
- Delivery Service: Picks up package from sender and delivers to receiver.
- Investor: Main “owner” of the post-office service
- Manager: Who watches over the entire process

Use-case diagram:



Sequence diagram:




alt
[[items available]]
yes
Update Order Quantity
success
success
display success message
[[else]]
no
error
display msg items not available
Track Order
fetch Order Status
Order Status
Status Details
generate Bill
Order details
fetch order, calculate bill
Bill Amount
Amount
display amount, Request Payment Mode
payment type, amount
Initiate Payment Request
success
display success msg
logout
end user session