Examples

Object Orientated Analysis and Design

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Outline

- Revision Questions

- Group Project
  - ▷ Review Deliverables

- Example System Problem
  - ▷ Case Study

Milestone Dates

- Demonstrate Date
- Submission Deadline

- Exam 3rd Jan 2017
  - ▷ 2 Hours

25th

December

Last Day – Quizzes

Grade Taken

Group Project

- Report
- Submission Date 25th December
- Presentation/Demonstration
- Marking Criteria/Deliverables

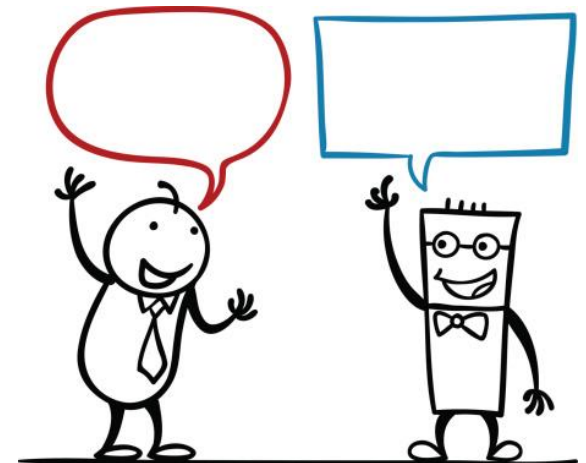Submit single .zip

Student number, e.g., 20939302.zip

Report and any supporting material

Case Study Example

Online Ticket Reservation System

Exercise

■ Write down the steps you'd go through for a Online Ticket Reservation System (5 Minutes)

Example Steps

- Step 1
- - Before entering the system, users have to login
- - Get the username and password from existing users.
- - Give new users the option to sign up.
- Step 2
- - Get the source and destination.
- - Provide a dropdown box for the date.
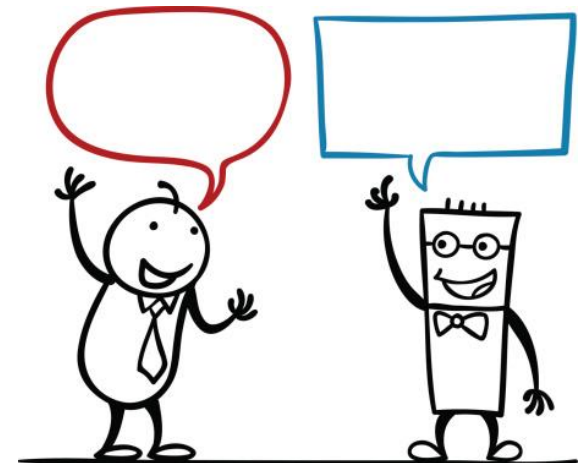- - Check availability of tickets.
- Step 3
- - If tickets are available, get the number of passengers.
- - Get the name and age of all passengers.
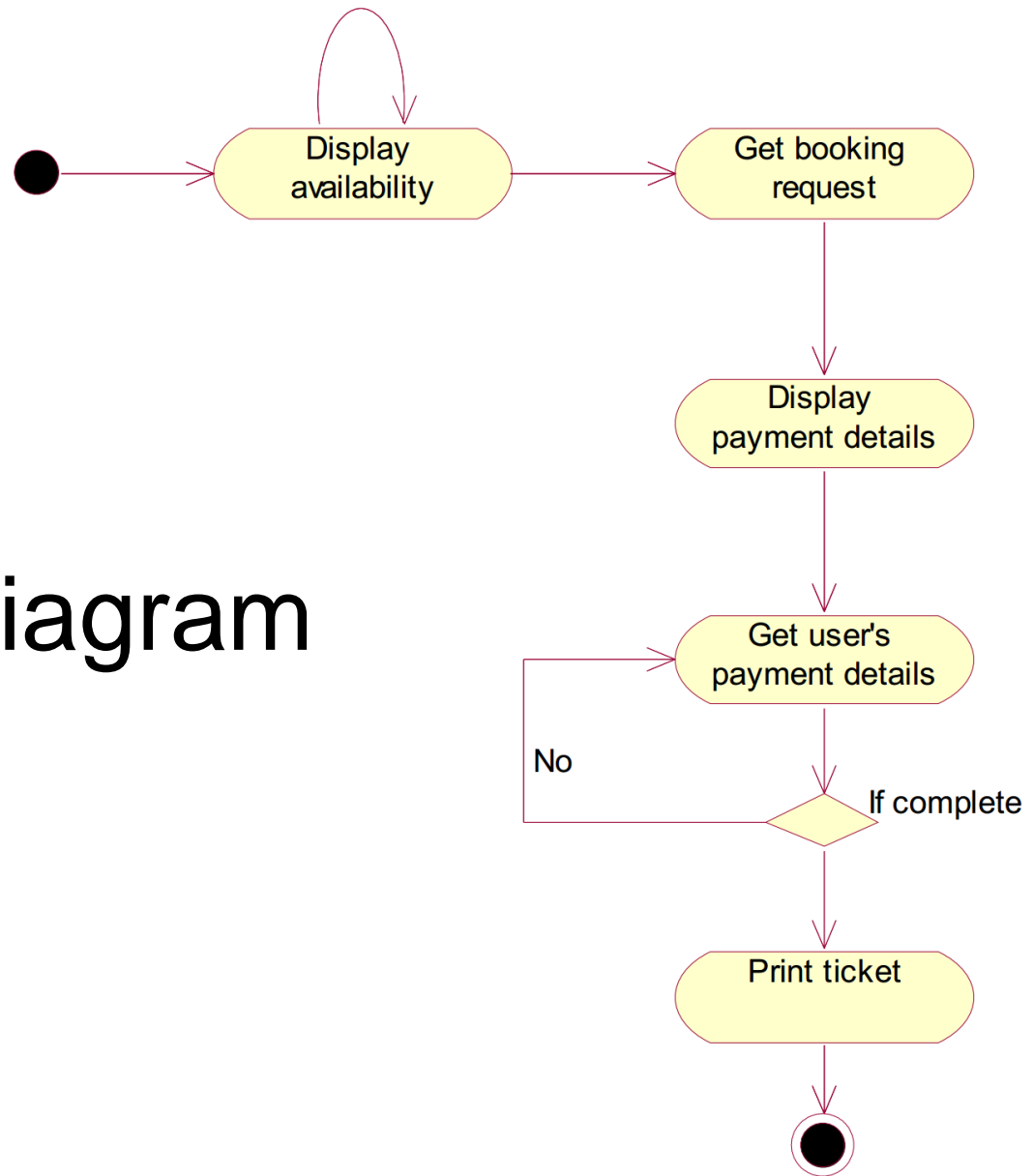- - If tickets are not available, reschedule.
- Step 4
- - Print the cost of the tickets.
- - Get the payment details from the user.
- - Confirm the details and the ticket.
- - Display confirmed ticket to the user
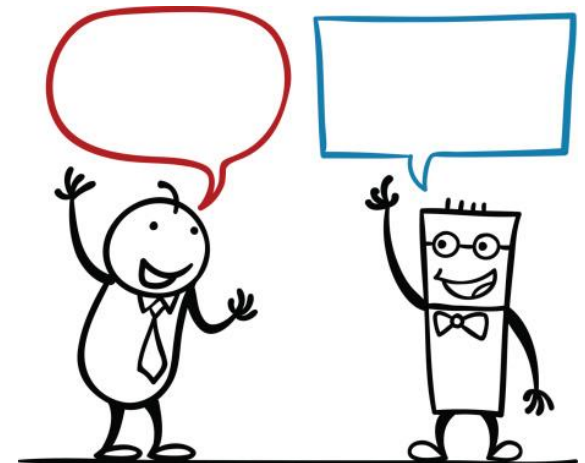
Exercise

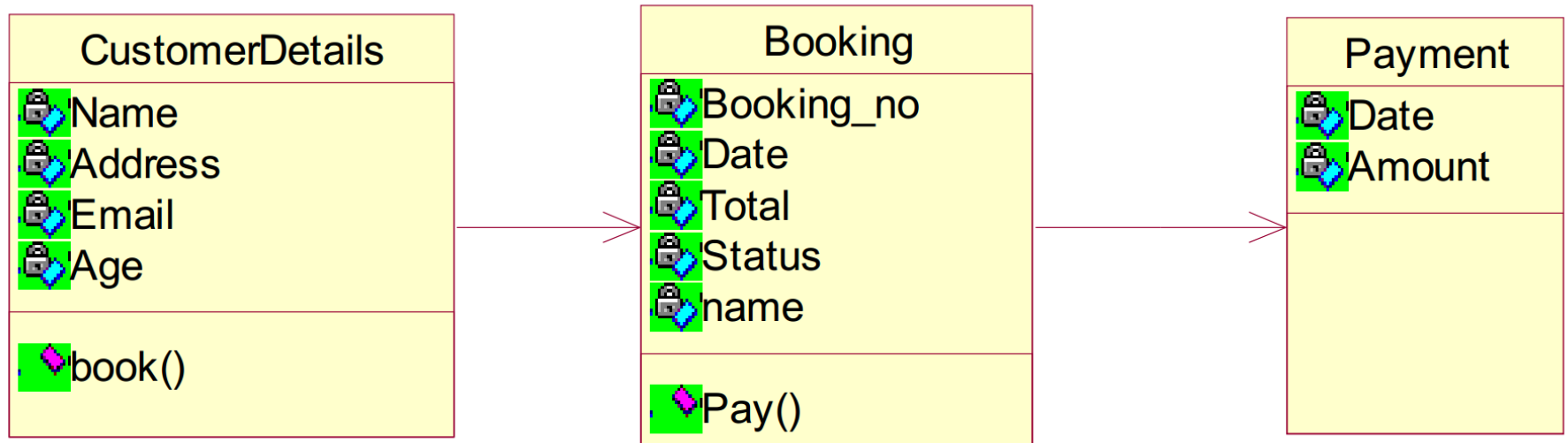- Given your steps, draw an Activity Diagram

Activity Diagram

Exercise

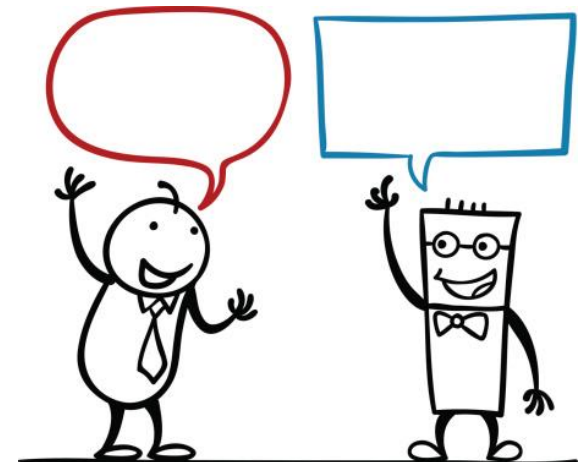■ Extend your understanding of the system to include a Class Diagram

Class Diagram

CustomerDetails

- Name
- Address
- Email
- Age

- book()

Booking

- Booking_no
- Date
- Total
- Status
- name

- Pay()

Payment

- Date
- Amount

Exercise

- Draw a use case diagram of your solution

Choose source, destination

Check availability

Booking Server

Enter details

Customer

Use Case Diagram

Request booking

Make payment

Bank System

Confirm booking
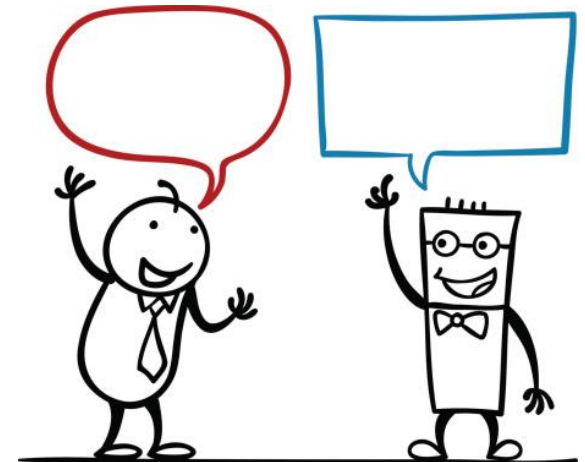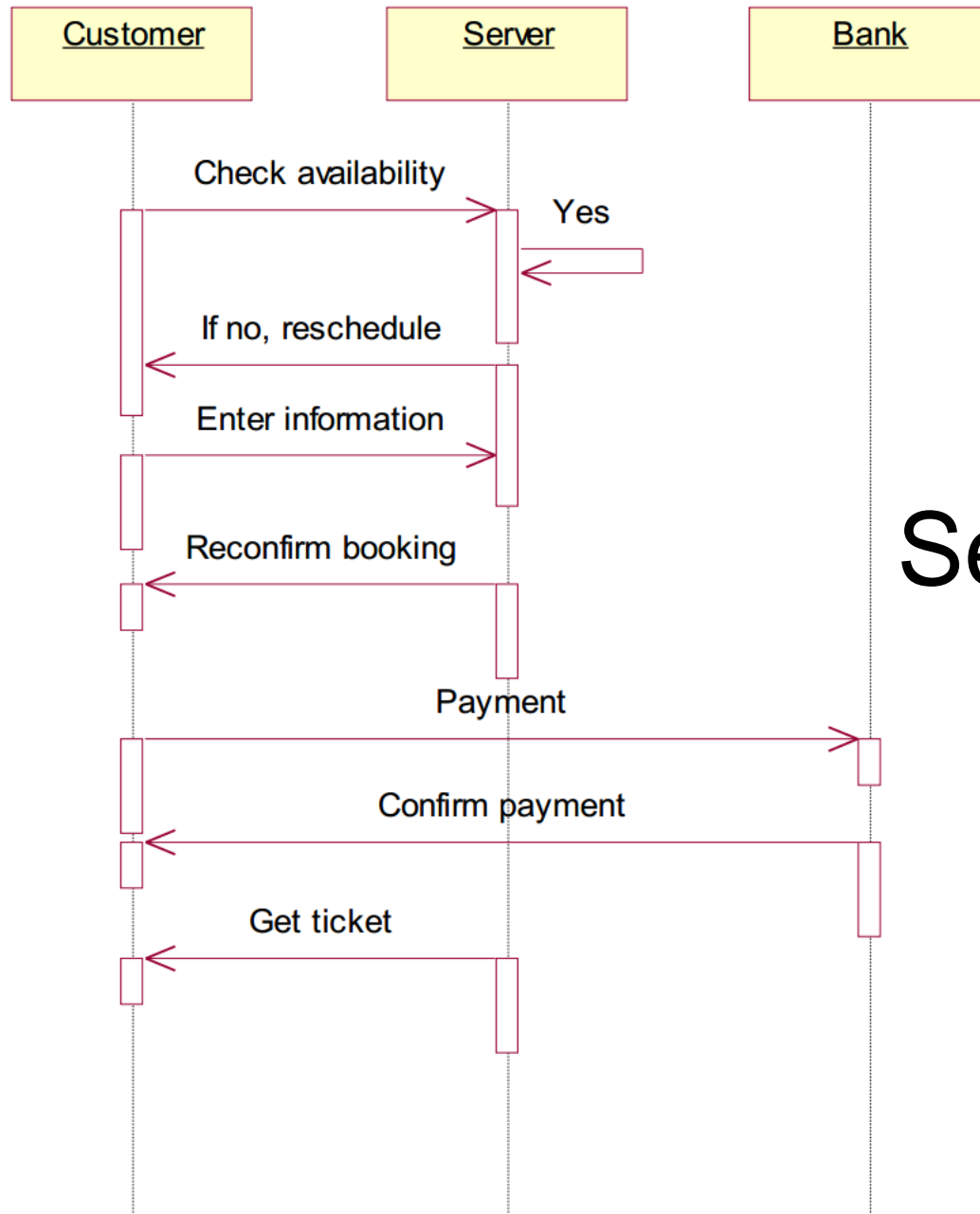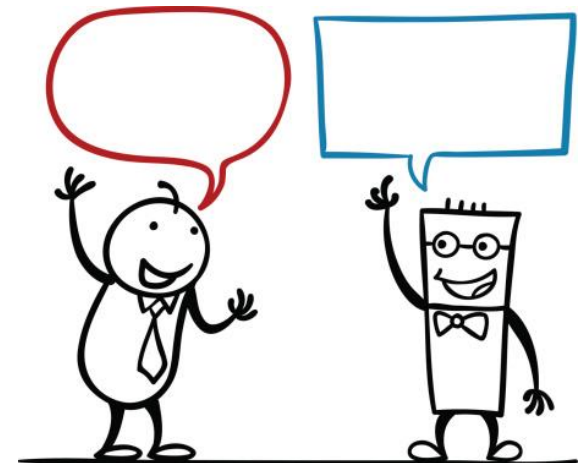
Exercise
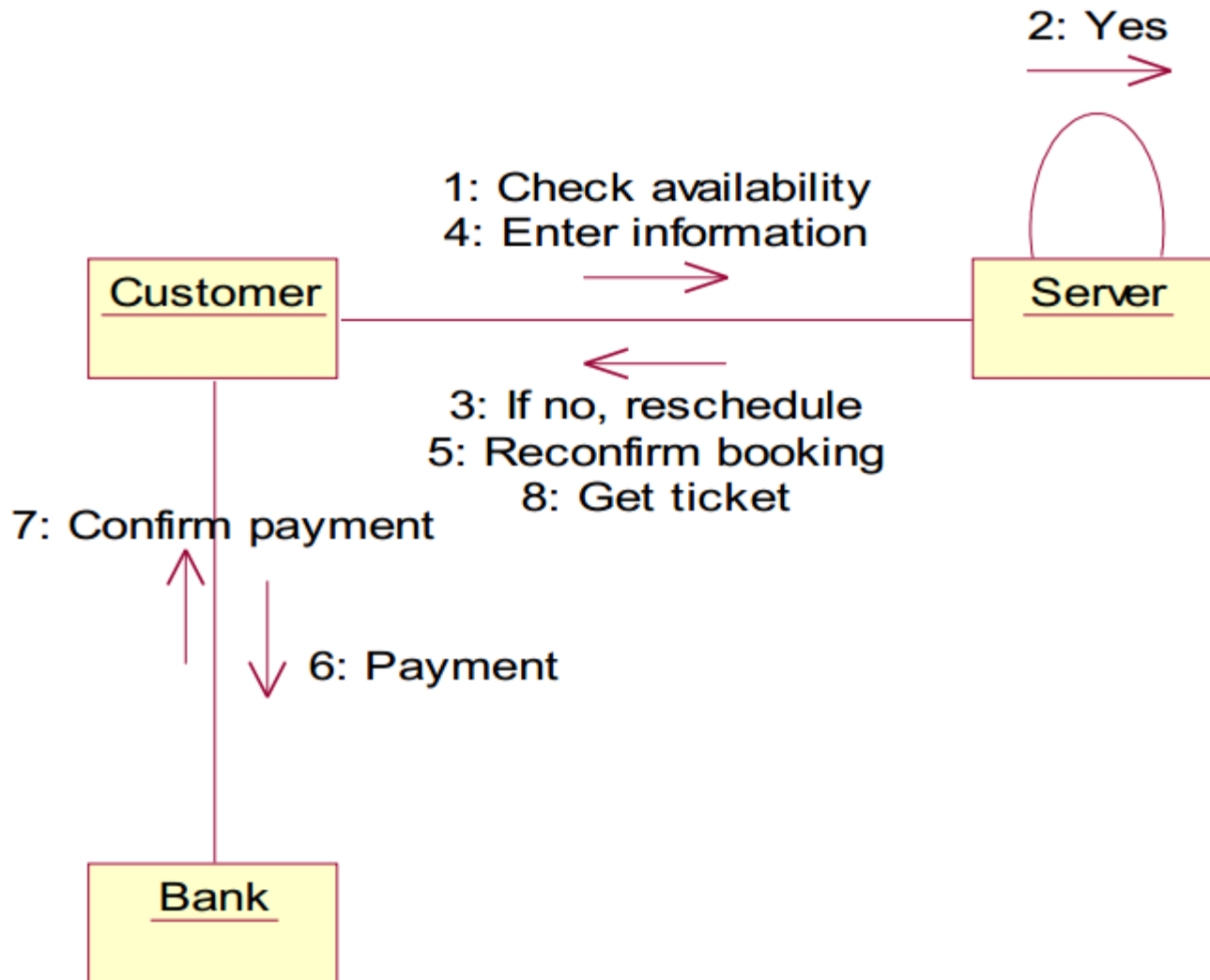
- Draw a sequence diagram of your system
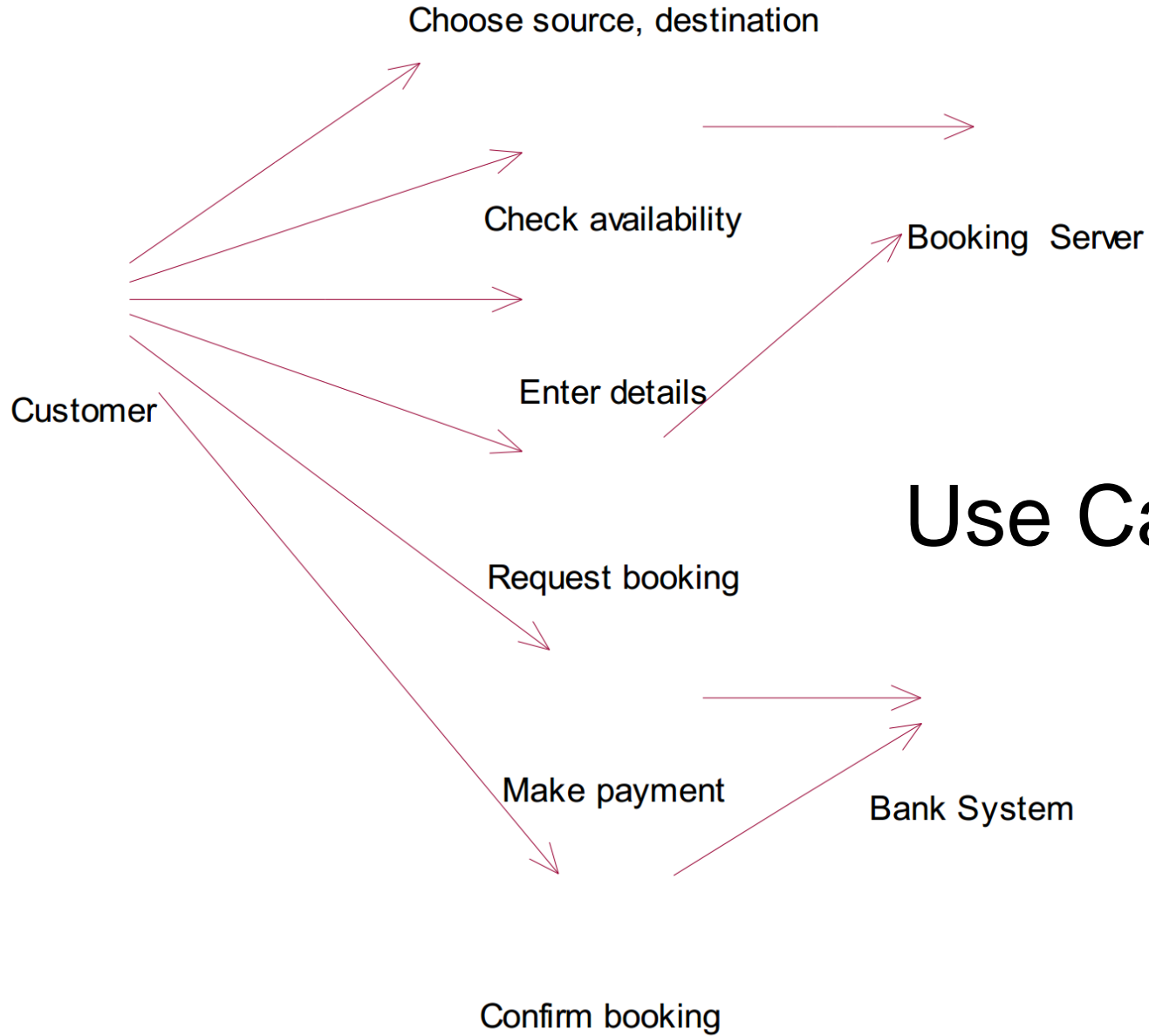
Sequence Diagram

Exercise

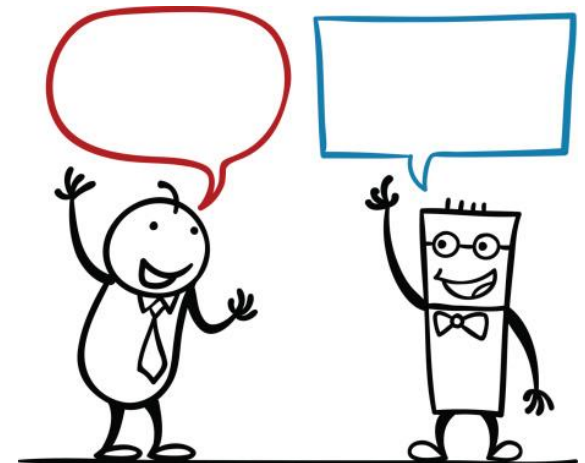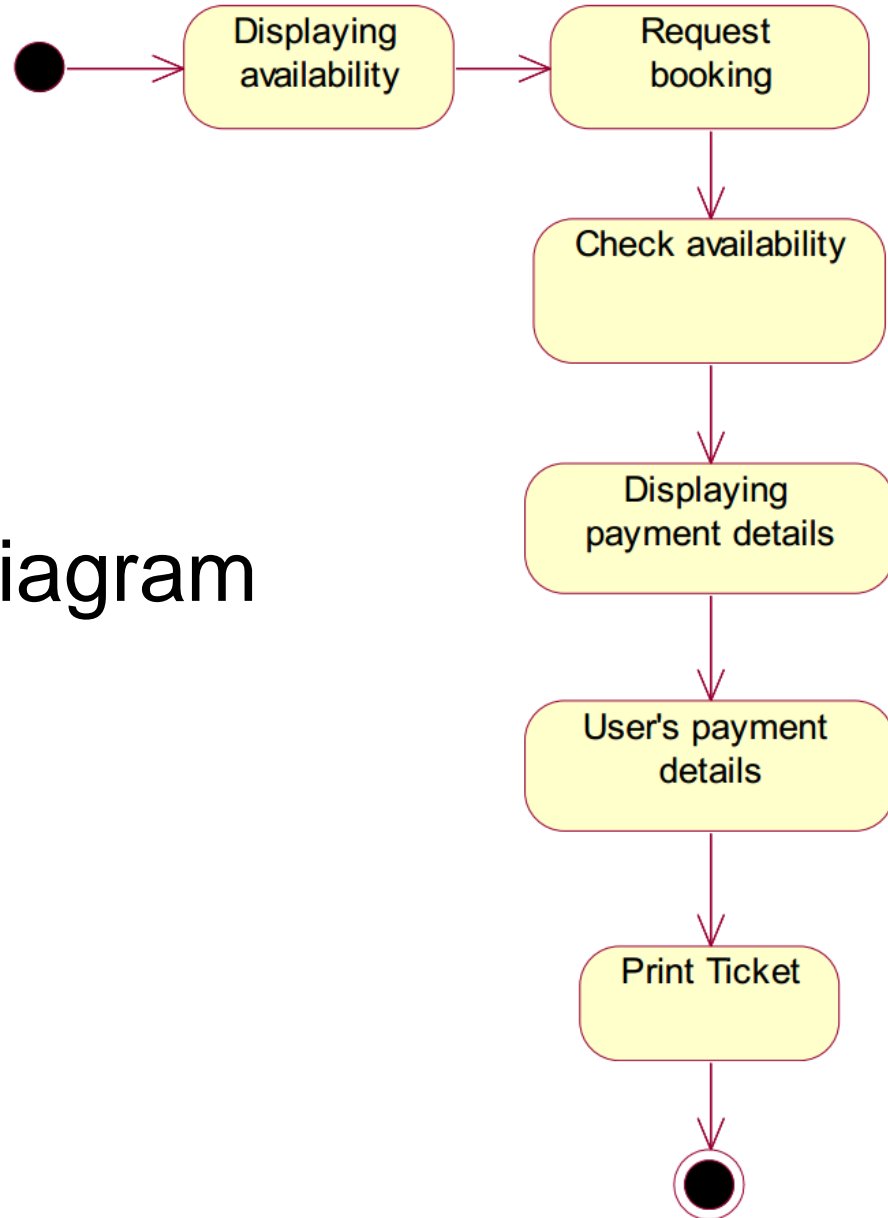- Draw a collaboration diagram of your system solution

Collaboration Diagram

Exercise

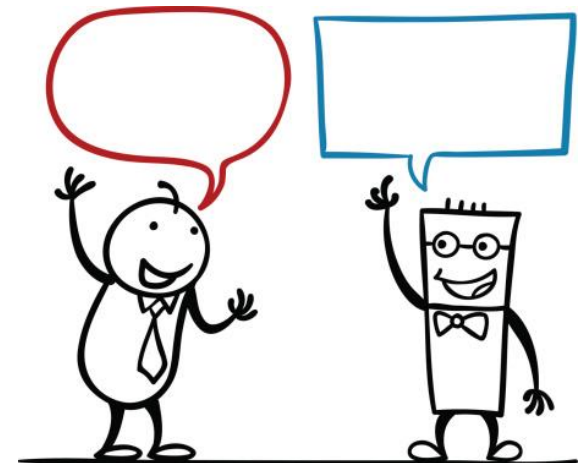- Draw a state chart diagram of your system

State Chart Diagram

Exercise

- Draw a component diagram of your system
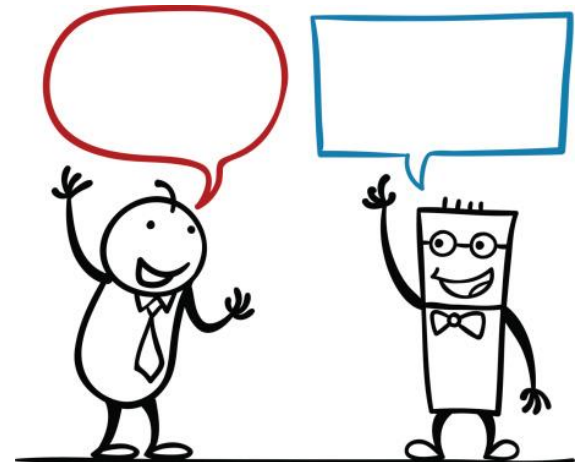
Component Diagram
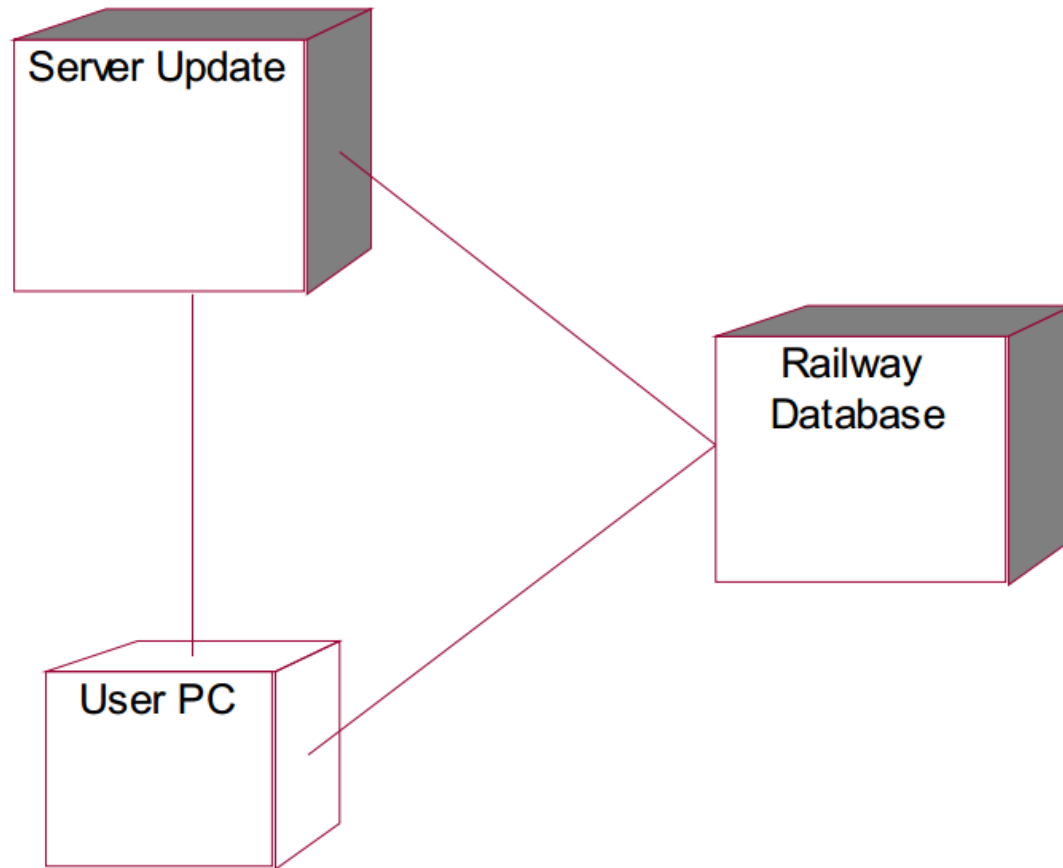
Bank

Online
Booking Server

Customer
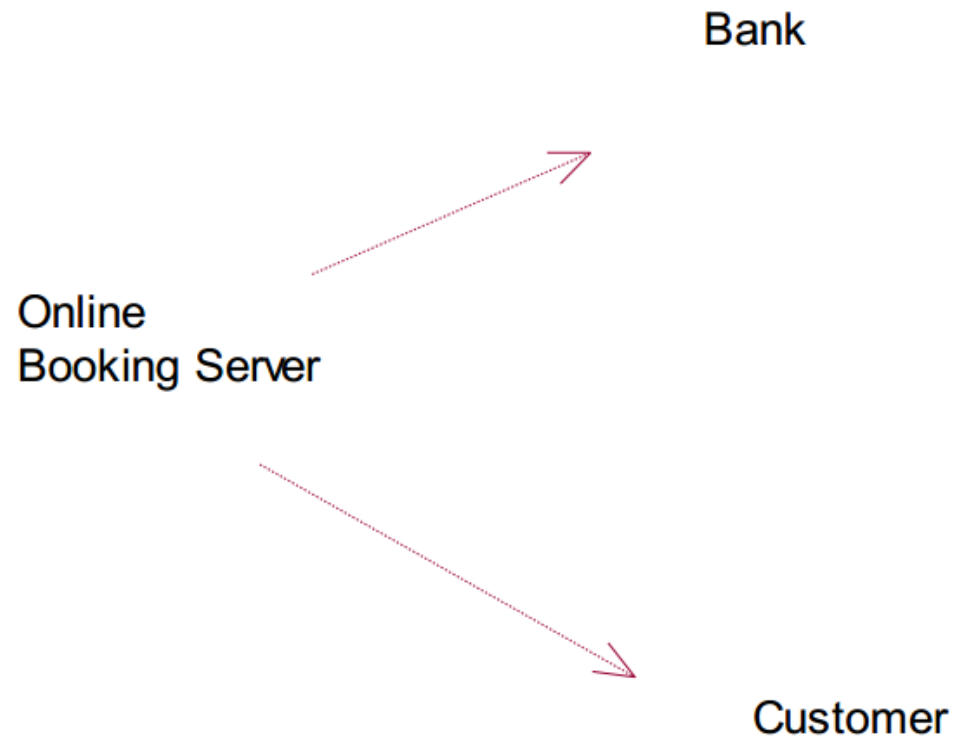
Exercise

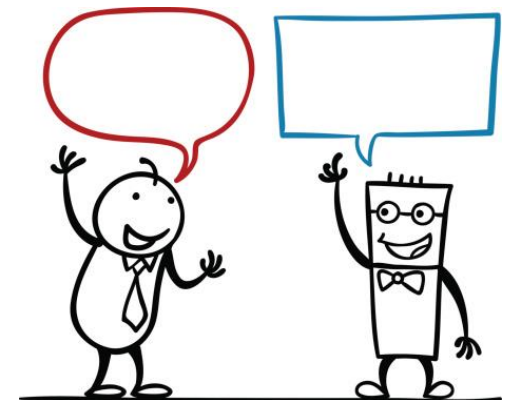- Draw a deployment diagram of your system

Deployment Diagram

Question

- Write down the differences between Agile and Plan-Driven development (5 Minutes)

Agile	**Answer**	Plan-Driven

Agile

- Project is small
- Experienced teams with a wide range of abilities take part
- Teams are self-starters, independent leaders and others who are self-directing
- Project is an in-house project and the team co-located
- System is new with lots of unknowns
- Requirements must be discovered
- Requirements and environment are volatile with high change rates
- End-user environment is flexible
- Relationship with customer is close and collaborative
- Customer is readily available dedicated and co-located
- High trust environment exists within the development teams and customer
- Rapid value and high-responsiveness are required

Plan-Driven

- Project is large
- Teams include varied capabilities and skill sets
- Teams are geographically distributed and/or outsourced
- Project is of strategic importance
- System is well understood (scope and features set)
- Requirements are fairly stable
- System is large and complex (critical safety/high reliability requirements)
- Project stakeholders have a weak relationship with the development team
- External legal concerns
- Focus is on a strong, quantitative process improvement
- Definition and management of process are important
- Predictability and stability of process are important

Question

- Briefly summarize the importance of using inheritance
  (5 minutes)
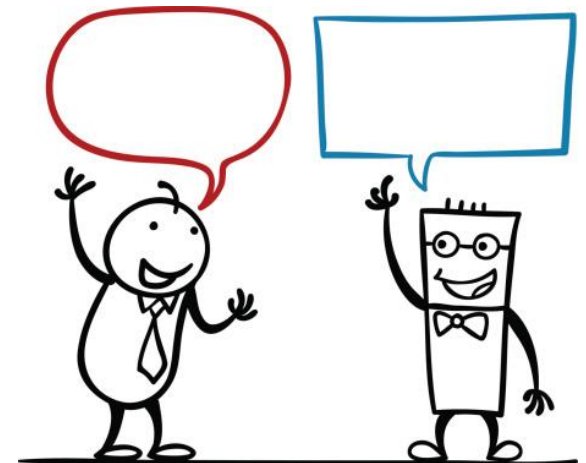
Answer

- Inheritance is one of the most powerful features of object oriented programming. Most important advantages of inheritance are:
- Reusability
- Saves times and efforts
- Closeness with the real world
- Easy modification
- Transitive Nature of inheritance

Summary

- Review
- Case Study
- Example Problems/Solutions
- Final Exam (January)
- Group Project
- Review Questions

This Week

- Review Slides
- Coursework
- Reviewing Quiz Questions
- Reviewing Associated Chapter

Question

- Deadline for final group project submission?

Answer

- 25th December

Also deadline for online quizzes

Questions/Discussion