CPT203 Software Engineering 1

Lab: Software design

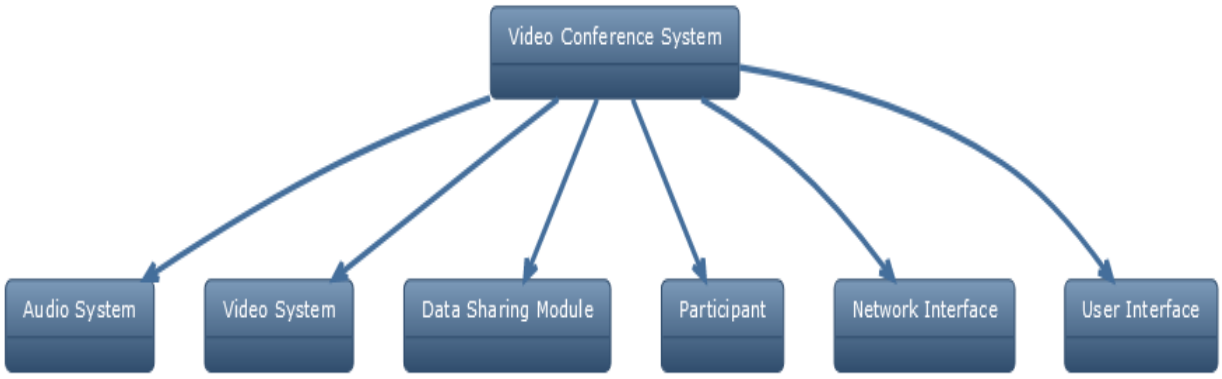
Suggested answers

Q1. Draw diagrams showing a logic or called conceptual view and a process view of the architectures of the following systems:

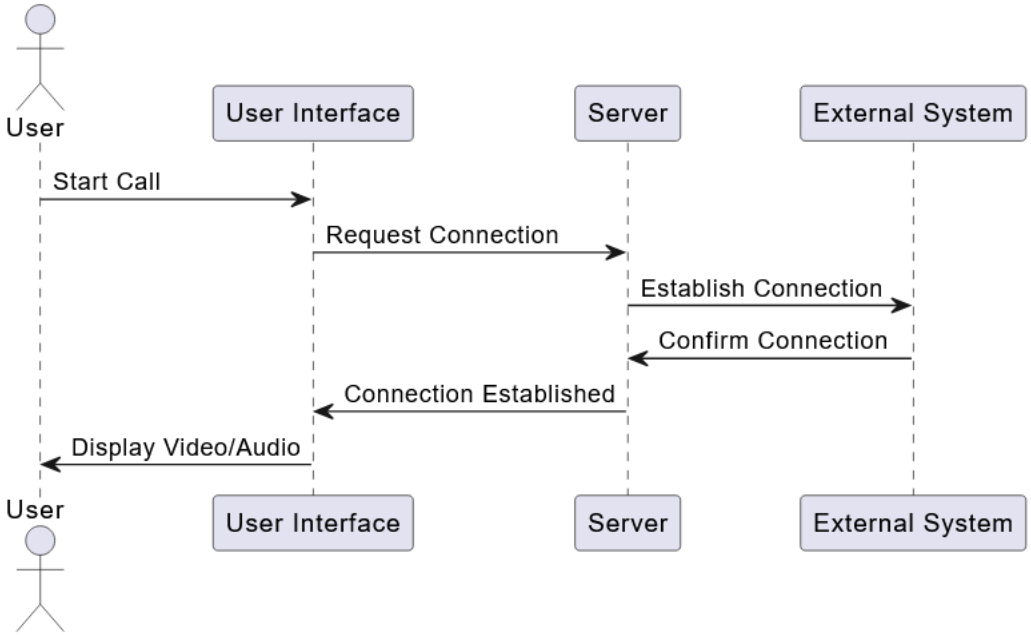
1. A computer-controlled video conferencing system that allows video, audio, and computer data to be visible to several participants at the same time.

Example answers

logic view



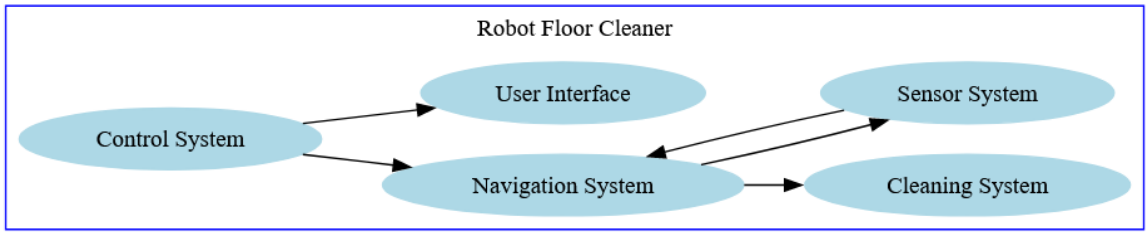
Process View



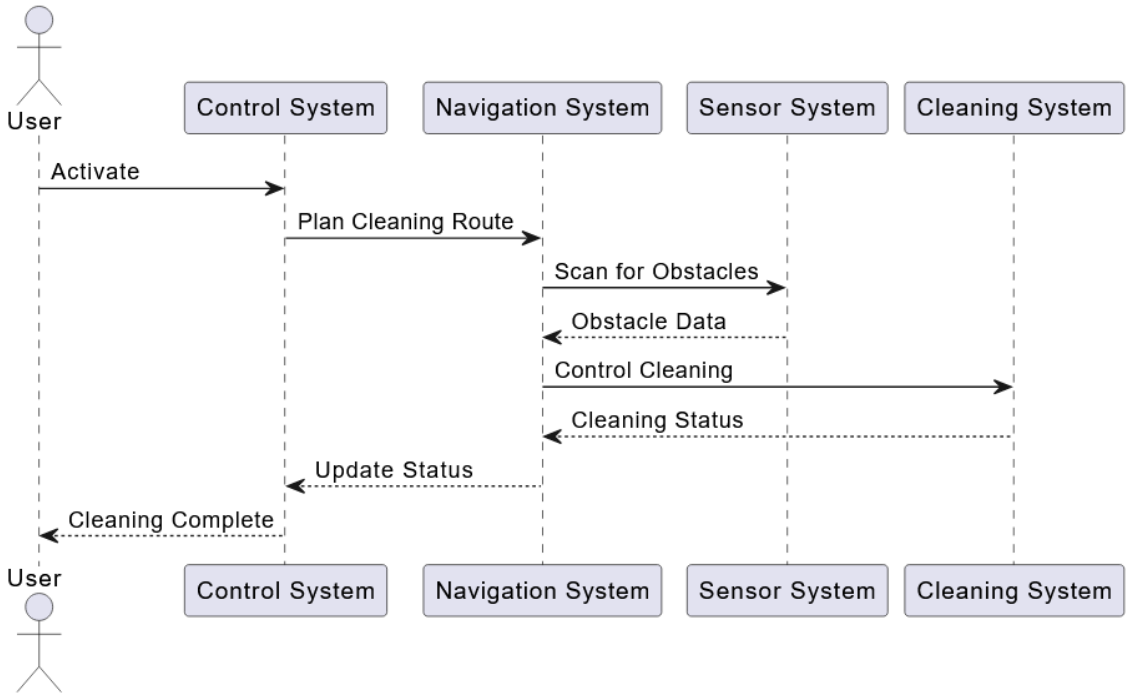
2. A robot floor cleaner that is intended to clean relatively clear spaces such as corridors. The cleaner must be able to sense walls and other obstructions

Example answers:

logic view



Process View



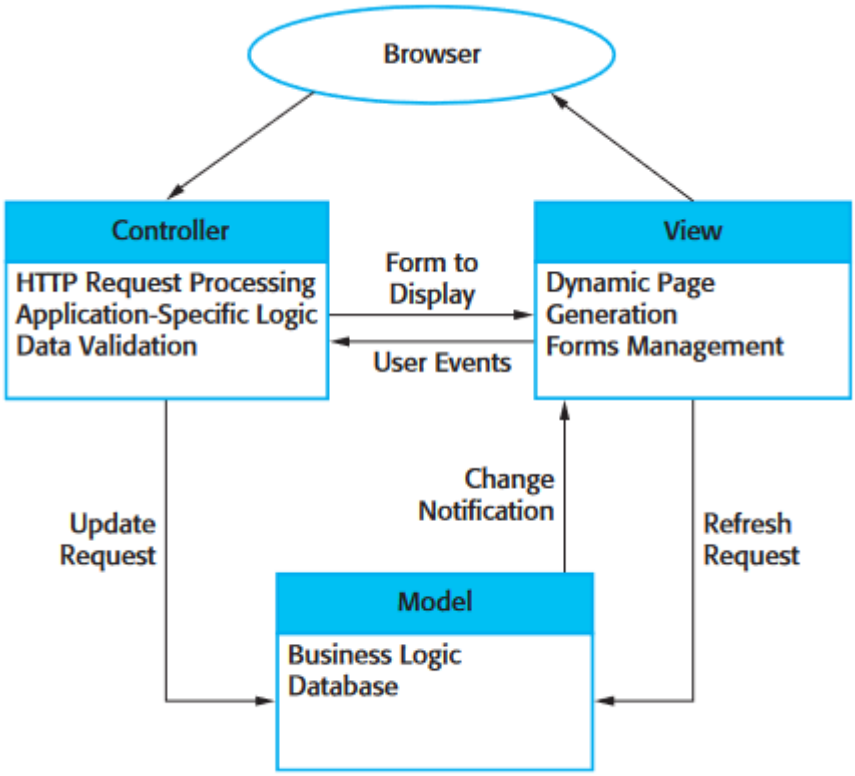
Q2. For each of the following architectural patterns described in the textbook, describe a real-world or example application system which should be designed using the patterns:

- MVC
- Layered
- Repository
- Client-server
- Pipe and filter

Suggestions:

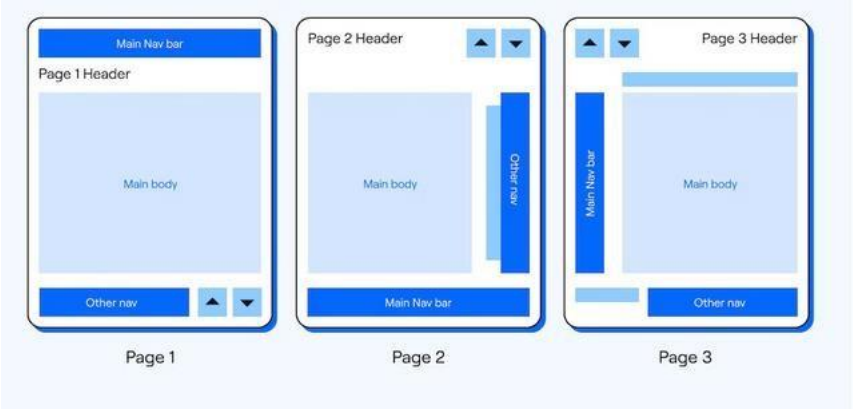
The students can have various answers. When students prepare their answers, please review the lecture note and examples, focusing on the description and advantages of each pattern.

An example answer to MVC:



Q3. Identify the issues in the following interface design and describe how the issues can be fixed.

Design 1



Design 2

Design 3

[redacted]

Example answers:

Design 1 – There is a consistency issue.

Design 2 – The problem include that it has the user in-control issue. Firstly, there is no close button so that a user can close down the unwanted content; secondly; the advertisement is likely a pop-up that is undesired and unexpected by the users.

Design 3 – This design has user in-control issues. The design cannot adapt to the given resolution and to different device sizes. In this case, the web is correctly displayed on a PC yet it may not be correctly displayed on a cell phone with a smaller screen.