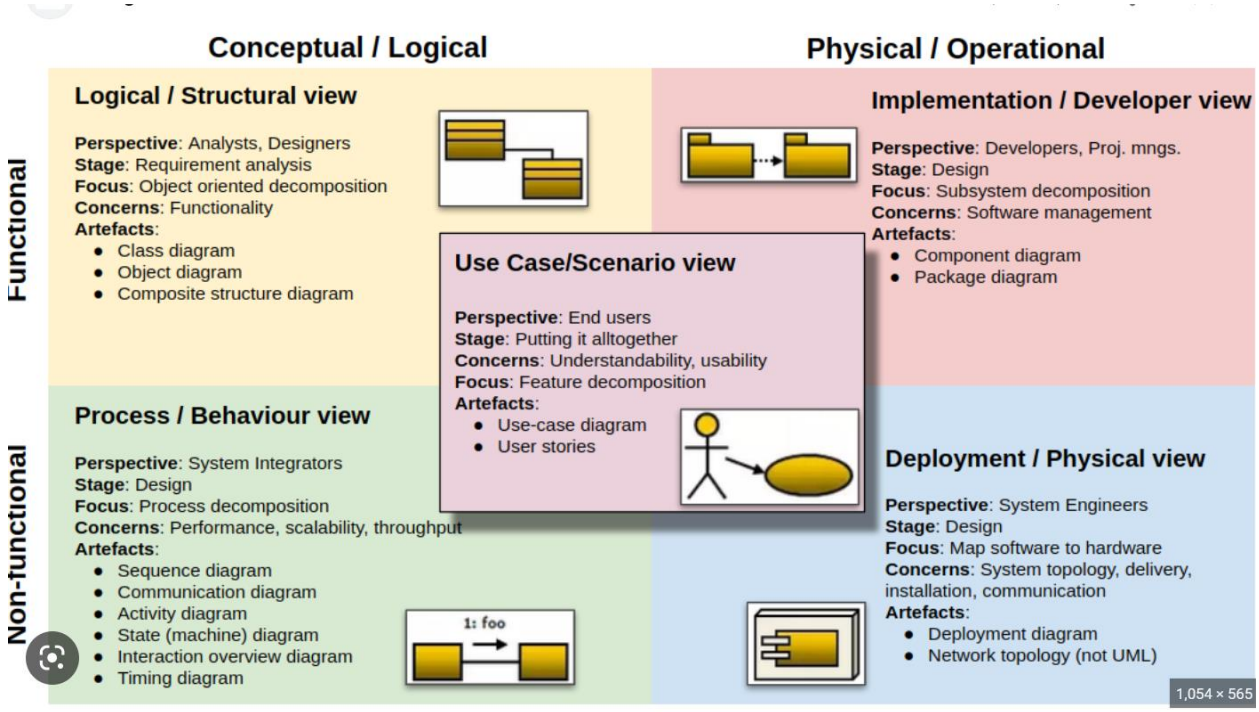
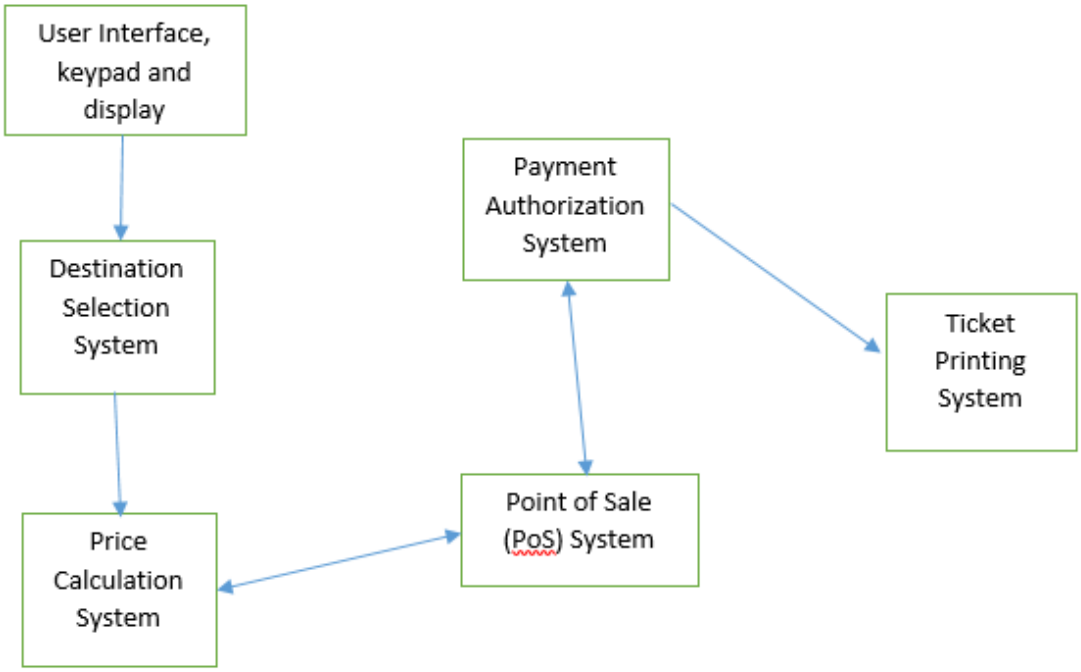


Q1. Draw diagrams showing a conceptual view and a process view of the architectures of the following systems:

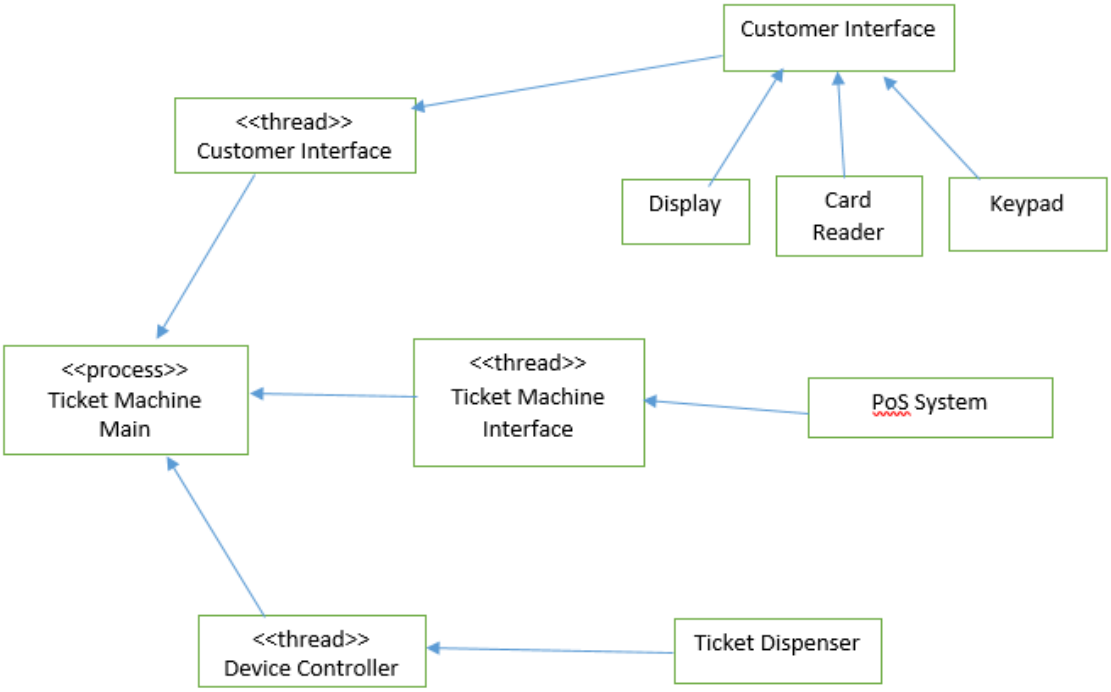
a. An automated ticket-issuing system used by passengers at a railway station.

Answer

conceptual view



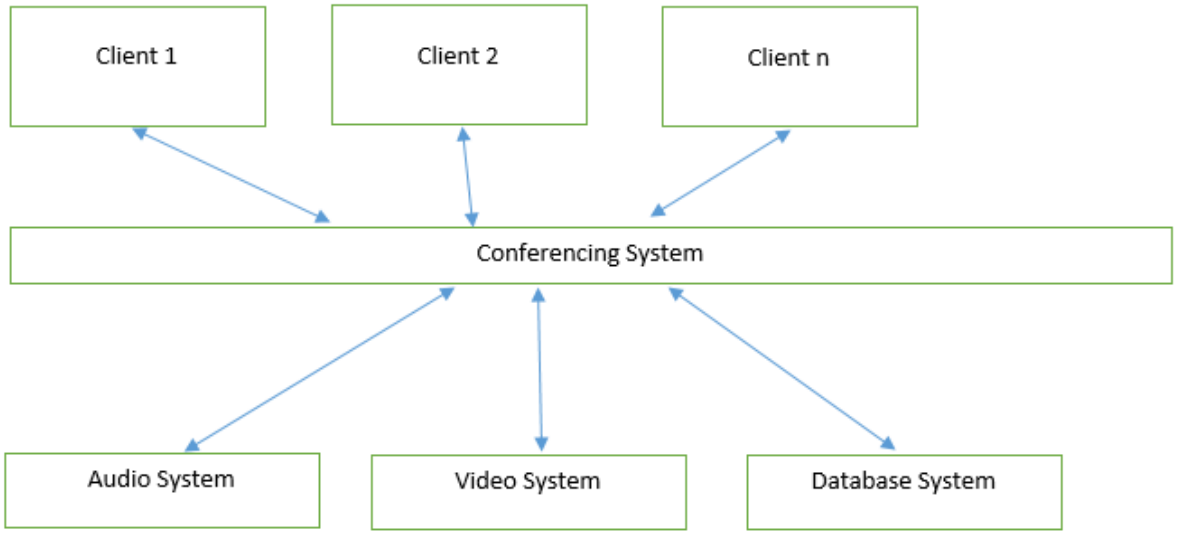
Process View



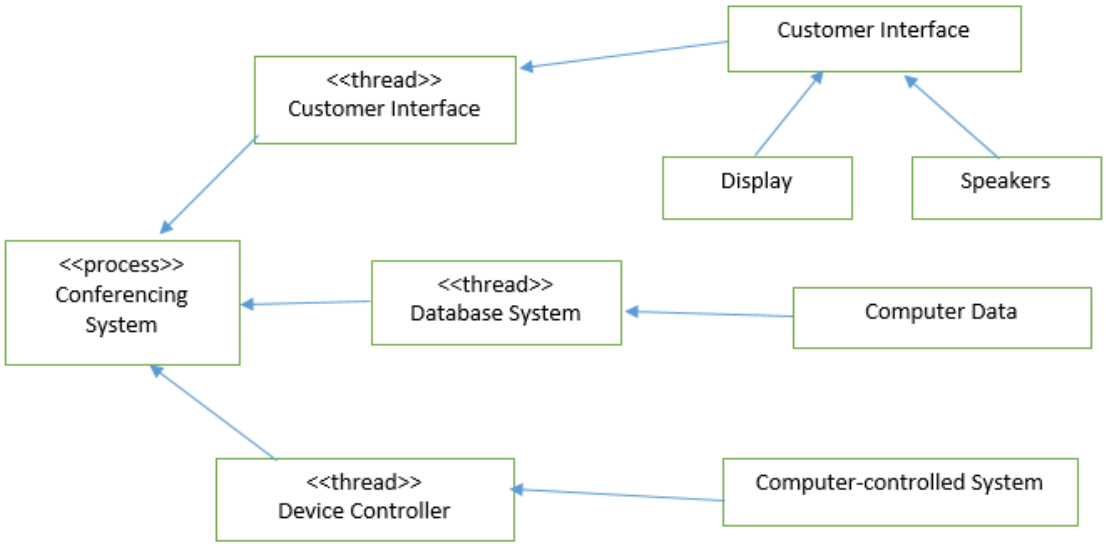
b. A computer-controlled video conferencing system that allows video, audio, and computer data to be visible to several participants at the same time.

Answer

conceptual view

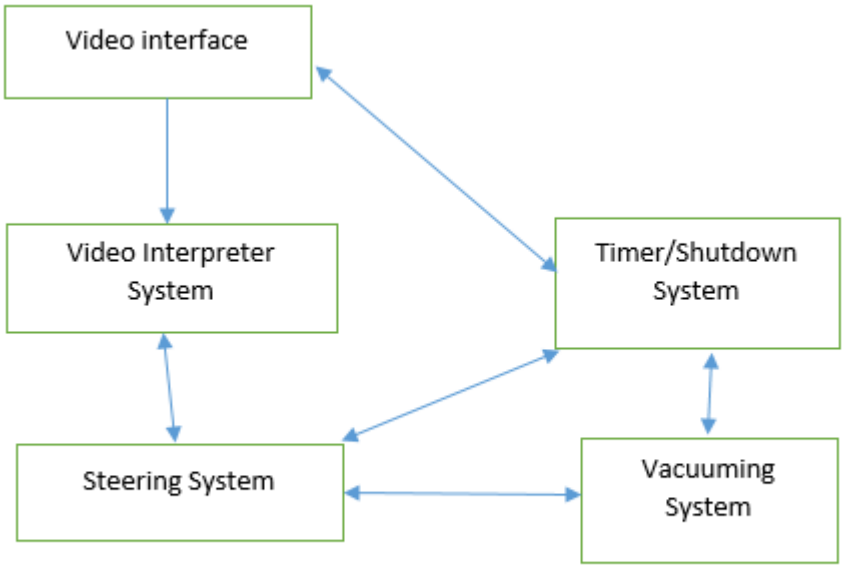


Process View

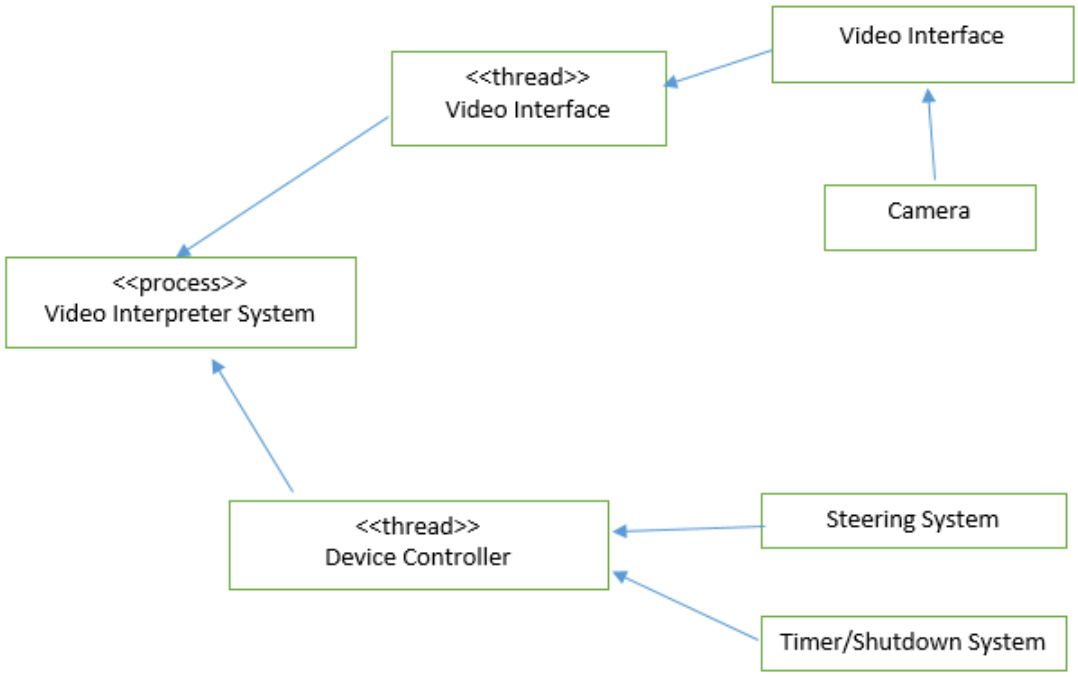


c. A robot floor cleaner that is intended to clean relatively clear spaces such as corridors. The cleaner must be able to sense walls and other obstructions

conceptual view



Process View



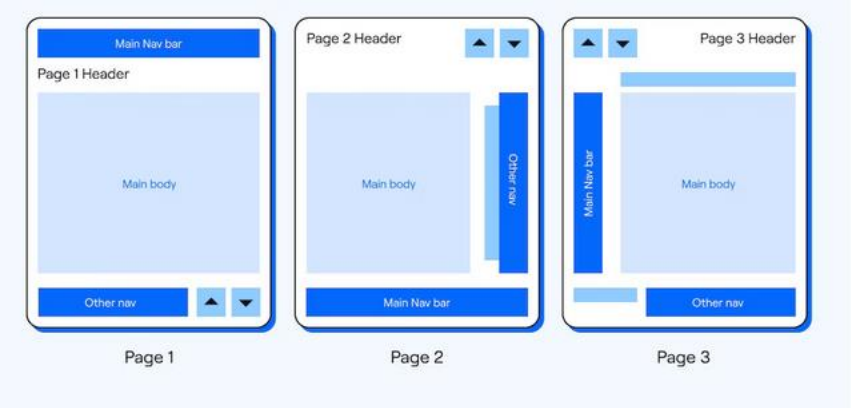
Q2. For each of the following architectural patterns described in the textbook, describe a real-world or example application system which should be designed using the pattern.

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

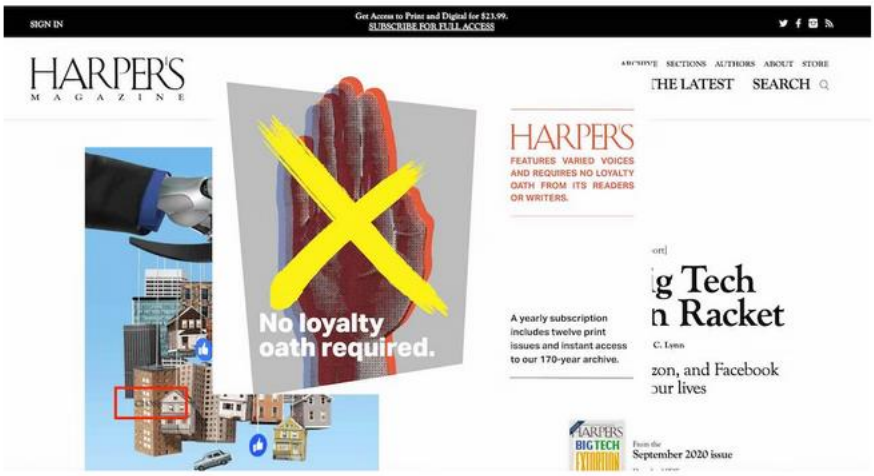
Answer: The students can be varied. When you prepare the tutorial session, you may review the PPT content from page 12 to page 22 together with students, focusing on the description and advantages of each pattern.

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

Design 1



Design 2



Design 3

[redacted]

Answer:

Design 1 – consistency issue (PPT page 61).

Design 2 – place the user in-control issue (page 49-55)-> first, there is no close button; second; the advertisement is likely a pop-up that is undesired and unexpected by the users.

Design 3 – place the user in-control issue (page 49-55) -> the design cannot adapt to the given resolution and device size. 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.