

Object Oriented Software Engineering

Term Assignment

Question #1:

Give an overview of System Design Activities diagrammatically.

Ans:

SYSTEM DESIGN:

A system diagram is a visualization of a system as a flow-chart-like diagram.

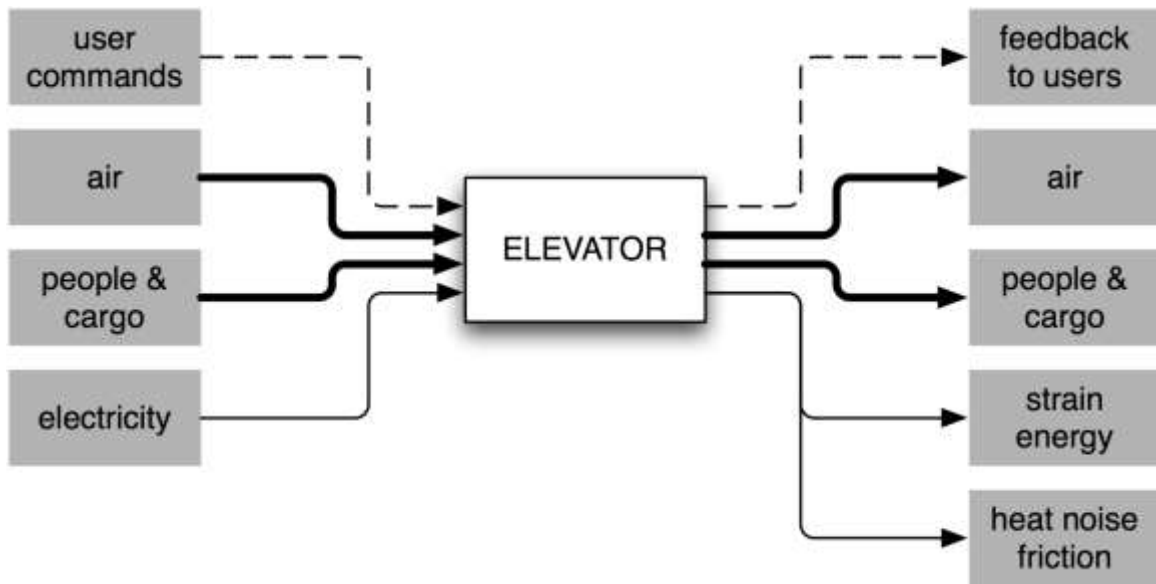
A system is marked by a box. The box marks the boundary of the system and completely contains it. The boundary need not be physically distinct. We place a label in the box identifying the system.

Since systems transform their inputs into their outputs, we use labelled arrows to represent specific interactions between the systems:

- mass transfers are noted with thick arrows;
- energy transfers are noted with thin arrows; and
- information transfers are noted with thin, dashed arrows.

Inputs are arrows coming from outside the system, and either:

1. ending at the system's boundary if no subsystems have been established yet; or
2. passing through the subsystems and eventually exiting the system, if subsystems have been established.



A simple system design

The above system design is an example of a very simple system diagram. It shows the very beginning of a system design for an elevator. We have marked the elevator system as a labelled box, and indicated the principal inputs and outputs as different types of arrows.

Question #2:

Explain any two Project Interaction Types along with examples.

Ans:

Interaction Diagram are used in UML to establish communication between objects. It does not manipulate the data associated with the particular communication path. Interaction diagrams mostly focus on message passing and how these messages make up one functionality of a system. Interaction diagrams are designed to display how the objects will realize the particular requirements of a system. The critical component in an interaction diagram is lifeline and messages.

Interaction diagrams help you to visualize the interactive behavior of a system. Interaction diagrams are used to represent how one or more objects in the system connect and communicate with each other.

Interaction diagrams focus on the dynamic behavior of a system. An interaction diagram provides us the context of an interaction between one or more lifelines in the system.

In UML, the interaction diagrams are used for the following purposes:

- Interaction diagrams are used to observe the dynamic behavior of a system.
- Interaction diagram visualizes the communication and sequence of message passing in the system.
- Interaction diagram represents the structural aspects of various objects in the system.
- Interaction diagram represents the ordered sequence of interactions within a system.
- Interaction diagram provides the means of visualizing the real time data via UML.
- Interaction diagrams can be used to explain the architecture of an object-oriented or a distributed system.

Process interactions can be in several different forms in which the basic project management processes, such as the initiating, planning, executing, monitoring, and controlling, as well as closing, can interact with each other during the course of conducting project activities. For example, processes associated with monitoring and controlling can affect the executing process. Items associated with the initiating process can affect planning. In some cases, items associated with the execution process can have drastic effects on the closing process. It is interesting to contrast how these knowledge areas correspond to and interact with the five process groups...