

Victoria University

OF

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Analysis and Design

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Ans to the Q: NO.1

System design: System design is the process of determining elements of a system like modules architecture, components and their interfaces and data for a system based on the specified requirements. It is the process of defining developing and designing system which satisfies the specific needs and requirement of a business or organization.

Differences between system analysis and system design:

System analysis is the process of studying and existing system to identify its components and their interactions and to determine the requirements for a new or improved system. This involves analyzing the business needs and goals

identifying the problems with the current system and gathering requirements from stakeholders.

The difference between system design and user interface design is that system design refers to the overall design of the system, while user interface (UI) design focuses specifically on the design of the users' interaction with the system, such as buttons, menus and screens.

UI design involves creating the visual and interactive elements of the system with a focus on usability, user experience and accessibility. This involves designing the layout, typography, color schemes and

and other visual elements, as well as the interaction patterns and user flows.

In summary, system analysis and system design are both important phases in the software development process, with system analysis focused on gathering requirements and identifying problems, while system design is focused on designing the system to meet those requirements. User interface design is a specific aspect of system design that focuses on creating an intuitive and user-friendly interface for the system users.

Ans to the Q. NO. 2

System: A system is a group of interacting or interrelated elements that act according to a set of rules to form a unified whole.

There are three types of systems in thermodynamics: open, closed, and isolated.

An open system: can exchange both energy and matter with its surroundings. The stovetop example would be an open system because heat and water vapor can be lost to the air.

A closed system: on the other hand, can exchange only energy with its

surroundings, not matter, if we put a very tightly fitting lid on the pot from the previous example, it would approximate a closed system.

An isolated system is one that cannot exchange either matter or energy with its surroundings. A perfect isolated system is hard to come by but an insulated drink cooler with a lid is conceptually similar to a true isolated system. The items inside can exchange energy with each other which is why the drinks get cold and the ice melts a little, but they exchange very little energy with the outside environment.

The system model is a process-oriented representation that emphasizes the input or a flow, of information between modules

A systems model describes how process interact and what operations these process perform, but it does not go into details as to how these process are implemented.

Ans to the Q. NO. 3

There are four basic element of a data flow diagram: processes, data stores, external entities and data flows.

Elements: Elements are the tiny particles that make up matter. Science describes an element as a pure substance made of only 1 type of atom can not be broken down further into their substances. example: hydrogen oxygen are elements but water which is made of hydrogen and oxygen is not

Types of Data flow diagrams (DFD)

There are two distinct types of data flow diagrams: The logical DFD and the physical DFD. Logical DFD's take the perspective of the business or its activities, looking at what information is moving through the system. Meanwhile physical DFD's focus on how information flow is implemented.

A great example of this would be that a logical DFD of a grocery store checkout process would include things like an item number, prices, and payment details like a credit card number. It's almost as though the logical DFD is how a customer or cashier

Because of the nature of logical vs physical DFDs, it can be easier to start by describing the logical process. A logical DFD will help you describe the process as its users experience it, which can help you identify inefficiencies or challenging steps to eliminate. With your understanding of the logical flow, you can then more easily think through how that information physically moves along the same process. The physical DFD will include more technical details to help you build or optimize your system.

Ans to The Q. NO. 4

The Advantage and Disadvantage
Bottom-up Strategy.

Advantages :

More informed decisions: Top level managers work collaboratively with team members to chart a course of action, which prevents potential process blind spots that might otherwise be made without team input.

Better team morale: greater buy-in from team members because everyone is given the equal opportunity to influence decisions and project outcomes regardless of seniority.

More creative opportunity: Feedback brainstorming, and constructive criticisms from team members can often lead to better system and outcomes.

Disadvantage:

* Reduced momentum: too many collaborators can make it harder to arrive at a decision and as a result, processes can slow down. There is a need for one or two group leaders in this instance.

* Change in team dynamics: it's not always easy for team members to give honest feedback in front of management. Smaller group breakouts or anonymous feedback surveys can help.

Lack of high-level insight: projects are still impacted by higher level factors like company goals budgeting forecasting and metrics that aren't always available at the team level.

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A flow chart is visual representation tool that you can use to describe a project system, process, or algorithms. These diagrams are popular among many professionals for presenting complex process in an easily understandable form. They use various symbols to represent the order of operations between each aspect. Flow diagrams can be simple images that depict minor projects, or digitally generated charts showing relationships between multiple complex procedures.