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**TUNKU ABDUL RAHMAN UNIVERSITY COLLEGE**

FACULTY OF COMPUTING AND INFORMATION TECHNOLOGY

BAIT2133 WEB ENGINEERING

TUTORIAL 9

**Answer all the questions:**

1. Discuss **TWO (2)** functionality categories.

User-Level (External) Functionality. These categories include functionality that directly affects users’ experience of the WebApp

Application-Level (Internal) Functionality. These categories relate to functionality that is necessary to support the WebApp, but which will only be visible to users as a second-order effect.

1. Compare the classifications of information structure.

Linear structure presents information in a specific order and controls the navigation of users by progressing one webpage at a time. This structure might be used for a tutorial site to ensure that users don't skip steps or perform them out of sequence or for a site that presents information in a chronological or historical order.

A hierarchical structure is like tree map. The home page is at the top. Underneath it breaks into categories which can be further broken into different sub-categories.

The network structure is a newer type of organizational structure viewed as less hierarchical (i.e., more “flat”), more decentralized, and more flexible than other structures.

The matrix structure is a type of organizational structure in which individuals are grouped via two operational frames.

1. Discuss the components as the result of decomposition of use case.

Information selection (i.e., functionality associated with the identification and/or selection of information to be presented to the user).

Information compilation (i.e., functionality associated with merging information together into a composite to be presented to the user).

Information processing (i.e., the analysis or calculation of data).

System interaction (i.e., functionality associated with interactions with other systems external to the WebApp).

1. Discuss what state modeling is.

State modeling is to describe the sequences of operations that occur in response to external stimuli. As opposed to what the operations do, what they operate on, or how they are implemented.

1. Compare the *Granularity Level* of pattern in web application design.

Architectural patterns is level of abstraction will typically relate to patterns that define the overall structure of the WebApp, indicate the relationships among different components. Next, Component patterns is level of abstraction relates to individual small-scale elements of a WebApp.

Design patterns is address a specific element of the design such as an aggregation of components to solve some design problem, relationships among elements on a page, or the mechanisms for effecting component-to-component communication.

1. You are required to develop a college map guide that is going to be implemented as part of the college web site. The college map guide will navigate the user to a specific venue within the college. You are currently in the progress of designing the pattern for this college map guide. Draft a pattern for the college map guide which consist of *title, use when, solution and why sections*.

Title: Map Navigation User When: The site has the possibility to search for a specific location. Solution: Show a map with the point of interest and provide navigation links in all corners. Why: We know maps from the real world, and we are comfortable with seeing them on the web.

1. You would like to create a pattern for a web application base on a given template. How do you observe or evaluate the suitability of the pattern template? Analyze **THREE (3)** criteria of the pattern that you are considered.

-Determine whether the pattern is suitable for WebApp domain -determine whether the pattern is suitable for design focus and granularity of the problem -determine whether the pattern be used without making any trade-oofs or compromises that are incompatible with the current WebApp design

1. Discuss the intentions of *pattern*.

The intent of each design pattern is to provide a description that enables a designer to determine whether the pattern is applicable to the current work, the pattern can be reused, and the pattern can serve as a guide for developing a similar, but functionally or structurally different pattern.

1. How do you identify design pattern? Describe any **TWO (2)** ways.

he idea of Christopher Alexander was finding "timeless way of building" or design patterns in architectures  addressing a recurring design problem that arises in specific design situations and presents a solution to it .

The trace diagrams can be used to find strong and weak patterns within program execution。