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Software Project Management

Week: 5

1.

In a web application development project, estimation is important to determine the cost, time, and resources needed. Imagine a company wants to build an online shopping website with features such as user registration, product listings, shopping cart, and online payment. The project manager must estimate how long the development will take and how much it will cost.

First, the team breaks the system into smaller tasks such as front-end design, back-end development, database setup, and testing. Each task is given an estimated number of hours based on experience and past projects. The project manager then calculates the total effort and multiplies it by the hourly rate of developers to estimate the budget.

Proper estimation helps avoid overspending and missed deadlines. It allows the company to plan resources correctly, manage risks, and ensure the project is completed successfully within the planned schedule and budget.

2.

Function Points (FP) is a method used to estimate the size of a software system based on its functionality. Instead of measuring lines of code, Function Points measure what the system does for the user. It focuses on inputs, outputs, user interactions, files, and external interfaces.

Each component is assigned a weight based on its complexity. The total score gives an estimate of the system size. This size can then be used to estimate effort, cost, and development time.

Function Points are useful because they are independent of programming language. They allow project managers to compare projects fairly and make more accurate estimations during the early planning stages.

3.

In this exercise, I created a basic COCOMO estimation model in Google Sheets. I entered the estimated number of lines of code and selected the appropriate project type. Using the COCOMO formula, the sheet automatically calculated the estimated effort in person-months

and the development time.

The formula helped me understand how software size directly affects cost and schedule. By adjusting the input values, I could see how the effort and duration changed. This showed how important accurate early estimation is in project management. Using Google Sheets made the calculation simple and clear, and it helped visualize how mathematical models support decision making in real projects.

4.

In Canva, I created a simple estimation process diagram using squares and arrows. The diagram begins with 'Define Project Requirements.' The next step is 'Break Down Tasks.'

After that, the process moves to 'Choose Estimation Method,' such as Function Points or COCOMO. Then it continues to 'Calculate Effort and Cost.' The next step is 'Review and Adjust Estimates,' where risks and assumptions are checked. The final step is 'Approve Budget and Schedule.'

This diagram clearly explains the estimation process in a structured way. It shows how planning moves from understanding requirements to producing a final budget and timeline. The simple layout makes the process easy to follow and understand.