**Learning Journal Template**

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**Course:** SOEN6841 Software Project Management

**Journal URL:** https://github.com/nisarg291/SOEN6841\_Journal

**Week 2:** 28/01/24 to 03/02/24

**Date:** 01/01/24

**Key Concepts Learned:**

In the efforts and cost estimation chapter, I have learned the importance of effort estimation for any software project. Efforts can be estimated in two ways using experience-based techniques and algorithmic cost modelling techniques. Statistical effort estimate techniques are extremely useful for effort estimation. Moreover, previous similar projects’ data can be used for effort estimation of the current project. Different effort estimation techniques can be used depending on the situation and the information available.

**Experience-based Estimation Techniques:**

1. **Estimation by Analogy:** Estimate new projects by comparing them to similar past projects, preferably decomposing the estimate. Firstly, we need to get the detailed size results for a similar previous project. Secondly, compare the size of the new project to a similar past project. Thirdly, build up an estimate for the size of the new project. Last, create an effort estimate based on the size of the new Project.
2. **Estimation by Expert judgement:** TheExpert uses some techniques for estimation.
3. **Function Point Analysis:** Function point analysis measures the functionality that the user requests and receives. It also measures software development and maintenance independently of the technology used for implementation. The steps to calculate FPA are 1. Determine the type of function count 2. Identify the scope and boundary of count 3. Determine unadjusted FP count (UFP) 4. Determine value adjustment factor (VAP) 5. Calculate the adjusted FP count.
4. **Wide Band Delphi (Delphi Technique)**: This is used to estimate the team efforts on the project. To estimate project effort, each team member estimates the parts of the project individually. After that, they discuss the differences among the individual results and then make the average estimation. Moreover, they calculate the consensus effort (E). Lastly, they calculate a range of effort estimation values.
5. **COCOMO:** This model can be used when previous project data are not available.

**Effort** **Calculation**: Effort = 2.94 \*EAF \* (KLOC)^ E

Moreover, I also understand the difference between the effort estimation for waterfall modelling and iterative modelling. Cost estimation, cost factor analysis, schedule estimation and resource estimation.

**Application in Real Projects:**

When an organization is planning a project, it's crucial to estimate the effort and cost of the project. This helps them to figure out how many team members they need, what skills they should have, and what equipment is necessary. Accurate estimates ensure that they have the right resources at the right time. Moreover, it helps organizations to predict the money needed for the project, including salaries, software, hardware, and other expenses.

A well-planned budget ensures the project stays financially feasible. Additionally, accurate estimates are vital for creating realistic project schedules. Project managers use these estimates to set achievable deadlines, figure out the most important tasks, and organize the project timeline. This makes sure the project progresses in an organized and efficient way.

**Challenges faced during the effort and cost estimation:**

1. **Uncertain requirements:** Incomplete or changing project requirements.
2. **Limited Historical Data:** limited detailed data available for previous projects
3. **Project Complexity:** Highly complex projects are more challenging to estimate accurately.
4. **Inexperienced estimators:** If the estimators lack experience or expertise, their judgments may be less accurate.
5. **Changing Technologies:** if a project uses theevolving technologies.

**Peer Interactions:**

I engaged with my newly formed project team to allocate tasks and conducted online research to grasp the project's details. Additionally, I looked into similar projects that had been undertaken before.

**Further Research/Readings:**

Review certain aspects from Chapter 4, including the definition of project risk, the rationale behind its consideration, and the different categories of risks.

**Personal development activities:**

Explored GitHub projects, examined their project charters, and attempted to write project initiation for those projects.

**Goals for the Next Week:**

Plan for the upcoming week includes reading Chapters 4 and 5, conducting a market analysis for the assigned project, initiating the project, and conducting further research on the project.