

Learning Journal 1

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Course: Software Project Management (SOEN 6841 – Fall 2024)

Journal URL: <https://github.com/snehpate111/Software-Project-Management>

Dates Range of activities: September 9, 2024, to September 20, 2024

Date of the journal: September 21, 2024

Key Concepts Learned:

In the two weeks, I studied three chapters. In Chapter 1, I explored what software projects are and how they differ from other types of projects, primarily due to their invisibility, complexity, and flexibility. I reviewed the phases of a project—initiation, planning, execution, and closure—along with the processes and subprocesses involved. Time, cost, and scope—three important factors for software project management—were proposed.

In Chapter 2, the focus shifted to the project initiation phase. I gained knowledge on how to create a schedule for the project and estimate an initial budget. The project division technique, commonly used to improve estimation accuracy, was also introduced. The project charter, along with defining the project's objectives, scope, and specific goals, was a major focus.

The focus of Chapter 3 was on methods for estimating effort and costs, namely algorithmic cost modeling and experience-based methods. I learned approaches like estimation by analogy and expert judgment, as well as specific methods like Delphi and COCOMO cost modeling. Function Point Analysis (FPA) was also covered, providing a standardized way to estimate software project functionality.

Application in Real Projects:

The lessons are directly applicable to software development in the real world. Resources may be estimated with the use of techniques like COCOMO, and improved management is ensured by scope definition. A well-defined estimation and project breakdown are essential to avoid scope creep and budget overruns in projects such as mobile app development. Particularly in AI-related projects, innovative hybrid estimating techniques that combine algorithmic and experience-based methodologies might further improve project accuracy.

Peer Interactions:

Key elements were clarified through peer discussions on effort estimating approaches, especially regarding the application of COCOMO to modern agile projects. We also spoke about how difficult it is to manage work estimates for real-world software projects because of their complexity, especially large-scale products. It was observed that challenges frequently change as a project progresses, requiring revisions to the original timelines and plans. Peer review highlighted the need of using expert opinion in quickly changing technological contexts and supporting changes to estimates when problems occur.

Challenges Faced:

It was difficult to understand how to apply Function Point Analysis (FPA), especially when it came to real-time software since it is not very good at capturing performance requirements. The intricacy of COCOMO's sub-models also needed additional effort to understand.

Personal development activities:

I concentrated on learning more about experience-based methods like Estimation by Analogy and Estimation by Expert Judgment to strengthen my grasp of the effort and cost estimation strategies. In addition, I went over how these techniques, which expand on the course's discussion of COCOMO and Function Point Analysis, can be used on complex software projects. To make sure I understand basic project schedule and budget estimation and can effectively prepare for real-world project issues, I also went back and reviewed Chapter 2. These activities have strengthened my ability to make informed decisions in managing project scope, time, and resources.

Goals for the Next Week:

1. Use COCOMO on a hypothetical project to compare its projections with experience-based estimations.
2. Work together with peers on a small-scale software project using Function Point Analysis.
3. Learn how to control uncertainty and consider risks in project schedules.