

LEARNING JOURNAL

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Course: SOEN 6841 – PROJECT MANAGEMENT

Journal URL: <https://github.com/ProjectPiglet/LearningJournal>

Dates Range of activities: JAN 13, 2025 – JAN 26, 2025

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Journal 1: Key Takeaways from Project Management & Project Initiation Introduction Class

The following are the main concepts I took away from today's class on project management and project initiation:

- **Project definition and it's key characteristics.**
- **Various project phases.**
- **Industry and project-related subprocesses.**
- **General understanding of various tasks and activities under project initiation, product initiation, and product implementation**
- **Waterfall model operation**
- **Quality metric characteristics of a software project**
- **Key roles and responsibilities in a software project and how they differ.**
- **Meaning of a project charter, how important is it, and what does it contain?**
- **Project objectives are SMART goals that quantify and define a project's success.**

Additional Observations and Insights

Beyond the core concepts, the following points caught my attention:

- A project is any activity that has a specified goal to be achieved within a specific timeframe (has a definite start and finish date) and budget. Software projects are no different from other types of projects, however they can present challenges during development.
- Routine jobs are less uncertain on the uncertainty scale than exploration tasks, which have the highest level of uncertainty, while projects are in the centre.
- The same tasks and activities from the project's initiation phase are included in the software product implementation tasks.
- The planning, monitoring, and control phase of the waterfall model includes industry-related subprocesses.
- A project manager's primary duty is to supervise the software project lifecycle, however I'm not clear how this differs from the manager's job description on **slide 20**.
- The project charter is a crucial document prepared by top management that outlines the project's purpose and objectives. It defines the project scope and boundaries, provides an initial schedule, and includes cost estimates covering human resource salaries, hardware, and software expenses. Additionally, it details stakeholder information and requires their approval through signoff.
- Once the initial cost and project schedule are refined and finalized, they will be established as a baseline. This baseline will serve as a reference for comparing actual project expenses and the time taken for project completion in the future.

- One aspect that piqued my curiosity was the ability to define the required quality level of a software product within the project scope. This led me to explore whether developing an acceptable low-quality software product is possible. I found that in certain cases, such as MVPs, prototypes, and low-risk projects, lower quality may still be considered acceptable. However, the level of acceptability ultimately depends on the specific use case, target audience, and industry standards.

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Journal 2: Key Takeaways from Effort, Cost Estimation & Risk Management Class

The following are the main concepts I took away from today's class on Effort, Cost Estimation & Risk Management

Effort, Cost Estimation understanding:

- Learned the various estimation techniques like experience based and algorithmic cost modelling
- Under experience estimation techniques I learned the detailed steps for estimation using analogy including the calculations. I see the main factor is the Multiplication factor as well as the size ratio that drives the estimation by comparing the new project to past similar projects.
- Following analogy, I learned how estimation is done using Function Point which is an experience-based technique. This technique seemed to be more tedious for me while studying since I need to first list out all the data functions, transaction functions, calculate the unadjusted function points, then based on the scale applied on the 14 general system characteristics we must calculate the Total Degree of Influence using which the Value adjustment factor is calculated. The constants that are used in the calculations are based on real time observations, real world data. The final Function point is a product of Unadjusted FP and Value adjustment factor.
- I learned that compared to other techniques like Analogy or FP, Delphi is an estimate based on Team effort where individual estimates are discussed and finally the whole group arrives at an accepted estimate.
- In the initial phase due to higher level of uncertainty a $\pm 25\%$ range of the accepted estimate is considered and as the project progress since the level of uncertainty decreases a range of $\pm 15\%$ is considered.
- Though I have learned the experience-based techniques, the most important point that stood out is ultimately if the team has no experience on new technologies as required in the new project, then these experience-based techniques will fail to provide accurate results.
- Finally, I learned Algorithmic Cost Modelling, which is based on mathematical function where project, product, process attributes are considered and due to its complexity, it is applicable only on aerospace and the defense systems.
- As an example of algorithmic cost modelling, I have learned COCOMO cost modelling and that it has 4 models. The early design stage example seemed to be too difficult to understand.

Risk Management understanding:

- Learned definitions for Major types of risk, Risk, Risk Category and how risk can affect a project.

- All the steps in doing risk assessment.
- Learned risk analysis using both qualitative and Quantitative.
- Learned the 4 risk response strategies.
- Learned formula for Risk exposure and Risk reduction leverage.
- Learned resource risk strategy ie. mitigation of risks using KMS.
- Learned Mitigation using quality checks/gates
- Finally Learned Risk Prioritization, risks of waterfall models and why risk is minimal in case of iterative projects.