Learning Journal 3

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Course: Software Project Management (SOEN 6841)

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Dates Rage of activities: 10/02/2025 - 21/02/2025

Date of the journal: 21/02/2025

Key Concepts Learned:

This week's sessions focused on Configuration Management (Chapter 5) and Project Planning (Chapter 6)—two critical aspects of software project management. **Configuration Management (CM)** involves controlling and documenting changes in a project. It ensures that all project artifacts, like source code, documentation, and testing tools, are properly tracked and versioned. Key components of CM include:

- Configuration Identification: Defining baseline components and maintaining a clear system structure.
- Configuration Control: Managing change requests through a structured process involving the Software Configuration Control Board (SCCB).
- Configuration Status Accounting: Tracking all changes and ensuring accurate documentation.
- Configuration Auditing: Verifying that the project aligns with baseline requirements.

Project Planning involves Work Breakdown Structure (WBS): Breaks down the project into smaller, manageable tasks and defines dependencies between tasks.

Planning Techniques:

- Top-Down Planning: Assigns time durations to larger tasks first, then breaks them into smaller tasks.
- Bottom-Up Planning: Assigns time durations to smaller tasks first, then aggregates them for larger tasks.

Scheduling Tools:

- Gantt Charts: Visualize task timelines and dependencies.
- Critical Path Method (CPM): Identifies the longest path of tasks to determine project duration.

Resource Allocation: Matches tasks with resources based on skills and availability.

Quality Assurance: Ensures the software meets required quality standards through planning and reviews.

Application in Real Projects:

The concepts from this week, particularly Configuration Management (CM) and Project Planning, are crucial for managing real-world software projects efficiently.

In practice, Configuration Management ensures that all project artifacts, including source code, documentation, and testing tools, remain consistent and traceable. For example, during software development, version control systems like GitHub help manage multiple versions of code, preventing issues like working on outdated files or reintroducing previously fixed bugs. Effective change control ensures that any modification is evaluated for its impact before implementation, reducing the risk of unexpected failures. Similarly, Project Planning plays a vital role in ensuring project success. The Work Breakdown Structure (WBS) simplifies complex projects into manageable tasks, making it easier to allocate resources and estimate timelines. For instance, in a mobile app development project, breaking down the work into design, development, testing, and deployment phases helps identify task dependencies and allocate resources efficiently. Moreover, scheduling techniques like critical path analysis and Goldratt's Critical Chain Method ensure that projects stay on track by identifying critical activities and removing unnecessary buffers. Milestones and deliverables provide checkpoints for evaluating progress, ensuring that project goals are met on time. Ultimately, the application of CM and project planning frameworks enhances project transparency, accountability, and quality, while minimizing risks and avoiding costly rework.

Peer Interactions:

This week, my peers and I collaborated extensively to prepare for our project pitch meeting. We refined our project scope, identified key deliverables, and created a presentation to communicate our ideas effectively. Additionally, we studied together for the upcoming midterm exam, discussing complex topics like effort estimation models, risk measures, and configuration management strategies. These combine studies helped clarify challenging concepts while strengthening our teamwork and problem-solving skills.

Challenges Faced:

Understanding the various estimation models and how they apply to real-world projects was challenging, especially when comparing techniques like Function Point Analysis (FPA), COCOMO, and Algorithmic Cost Modeling. Grasping the risk measures associated with project planning, such as qualitative vs. quantitative risk analysis and impact vs. likelihood assessment, also required additional effort. Additionally, understanding how configuration audits ensure project quality and how change impact analysis is performed for change requests initially felt complex. However, reviewing lecture notes, discussing with peers, made these concepts clearer.

Personal Development Activies:

To strengthen my understanding, I explored real-world case studies on how companies implement configuration management systems to maintain version control and avoid rework. I also practiced creating a Work Breakdown Structure (WBS) for our project, breaking down tasks into manageable units while aligning them with project milestones. Additionally, I explored online tutorials on critical path and critical chain methods, which helped me understand how project managers identify task dependencies and optimize scheduling.

Goals for Next Week:

Next week, I plan to revise Chapters 5 and 6 to strengthen my understanding of configuration management and project planning techniques, while also reading Chapters 7 and 8 to stay ahead for the next class. I will prepare for the upcoming quiz, ensuring I can confidently tackle questions related to project estimation, planning, and risk management. Additionally, I will collaborate with teammates to refine our project, finalize key deliverables, and align our work with project milestones. With the midterm approaching, I will continue my preparation, focusing on estimation models, critical path analysis, and risk mitigation strategies to build a strong foundation for success.