Learning Journal 1

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Key Concepts Learned

Chapter 5: I learned how Configuration Management (CM) systems act as the backbone of software projects by controlling changes and maintaining product integrity. Key components include identification, control, status accounting, and audits. The chapter emphasized the risks of uncontrolled changes (e.g., version chaos, defects reappearing) and strategies like change control boards (CCB) to manage them. The analogy of CM as a "speed bump" resonated - it slows down chaos to ensure disciplined progress.
Chapter 6: This chapter deepened my understanding of breaking projects into tasks using Work Breakdown Structures (WBS), resource allocation, and scheduling techniques like top-down/bottom-up planning. I explored the importance of milestones, deliverables, and tools like Gantt charts and critical path analysis. The concept of Goldratt's critical chain method, which removes unnecessary buffers, stood out as a way to optimize timelines.
Chapter 7: Earned Value Management (EVM) became a highlight here. I learned how to measure schedule and budget variances using planned vs. actual metrics. The idea of "slack removal" in iterative projects to tighten schedules and the role of performance indicators (e.g., defect density, resource utilization) gave me practical tools to track project health.
Chapter 8: Closure involves finalizing deliverables, archiving metrics, and documenting lessons learned. The emphasis on version control for source code and filtering meaningful data for future reference clarified how to leave a project "audit-ready."

Application in Real Projects

The concepts from these chapters directly connected to my experiences in past and ongoing projects.

- At EY, I worked on a data pipeline project where version control was crucial in handling multiple data transformations. Understanding CM's role in preventing inconsistencies reinforced why we relied on Git for tracking changes and ensuring team-wide consistency.
- During the CIBC Innovation Challenge**,** our team had to break down the project using a Work Breakdown Structure. Initially, we underestimated dependencies, which led to delays. This chapter's insights on scheduling techniques and critical path analysis helped me recognize where buffer time could have been minimized for a smoother workflow.
- Personal Side Project: I recently started applying Earned Value Management in a small freelance data analytics project. Tracking planned vs. actual progress using EVM metrics helped me assess how efficiently I was using resources and where I needed to adjust deadlines.

Peer Interactions

Peer collaboration was particularly beneficial in solidifying these concepts:

- **Configuration Management Discussion:** A classmate shared how their internship team struggled with version chaos, reinforcing how lack of CM can disrupt software stability. This discussion highlighted why I want to make sure to use structured version control in future roles.
- **Work Breakdown:** While practicing breaking down a project for another course into WBS elements, a peer pointed out a missed dependency that would have led to scheduling conflicts. This real-time feedback helped me improve my ability to structure project tasks more efficiently.
- **EVM fun activity:** Collaborating with a few classmates (as a fun activity created among ourselves) to analyze budget variances using Earned Value Management provided insights into real-world project tracking. A peer suggested incorporating resource utilization metrics, which made me rethink how to measure efficiency in projects.

Challenges Faced

- **Balancing CM without Overhead:** Initially, I found the strict processes of Configuration Management tedious. However, seeing how poor version control led to errors in past projects helped me understand its long-term benefits.
- **Applying Critical Chain Method:** Goldratt's method of reducing unnecessary buffers sounded simple in theory, but we realised that applying it practically was challenging as it was difficult to determine essential vs. excessive buffers as we discussed during the fun activity/discussion we had among ourselves.
- **Interpreting Earned Value Metrics:** Understanding how cost and schedule variances impact project health required practice. Working through class exercises and scenarios discussed by professor in class helped me gain confidence in interpreting these metrics.

Personal Development Activities

- Explored real-world case studies of CM failures to understand their impact on software projects.
- Practiced breaking down a personal project as well as for another course into a structured Work Breakdown Structure to refine scheduling skills.
- Analyzed Earned Value Management metrics as well as watched a few YouTube videos regarding the same to improve my tracking techniques.
- Engaged in casual peer conversations during lecture break to gain diverse perspectives on project closure strategies based on their past work/internship experiences.

Goals for the Next Week

- Deepen my understanding of critical chain scheduling by applying it to a personal project.
- Improve version control discipline by experimenting with branching strategies in Git.
- Collaborate with project members to analyze real project closure reports and extract best practices to be used for the course project work.
- Take a look at how advanced EVM techniques is being used to assess their relevance in large-scale software projects.
- Link the concepts used in previous chapters to the chapters learned this week to see the flow of how a real world project would work so far.
- If time permits, then go through next 2 chapters prior to the lecture to understand better during the lecture hour.

I believe, through the chapters covered so far, I've become more disciplined in structuring projects, from task breakdowns to tracking progress effectively. My confidence in applying project management techniques has grown, especially in estimating work, scheduling tasks, and ensuring version control best practices. The peer interactions have reinforced how diverse perspectives improve problem-solving, which will be helpful for me for my professional journey.