Learning Journal Template

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Course: SOEN 6841 Software Project management
Journal URL: https://github.com/amannkumar/Weekly-Journal

Week 1: Jan 18-Jan 27
Date: 27 Jan 2024

Key Concepts Learned: Started learning backend development in NodeJS which is based on JavaScript language. Started off with covering basics in the programming language to working on OS paths, http modules and learning about sync vs async programming,

Application in Real Projects: The learnings would help me become a better software developer by understanding the backend of the software.

Peer Interactions: Discussing to participate in the cybersecurity hackathon hosted by Concordia.

Challenges Faced: Challenges faced while learning the new backend language during development and in class trying to understand some practical examples for the class SDM.

Personal development activities: Started surfing through the internet to find ways that would help in gaining real world experience.

Goals for the Next Week: Set specific learning goals for the upcoming week. Consider areas where you want to focus for deeper understanding. Build projects on NodeJS and express. Focus on classes and getting internships.

Week 2: Jan 28- Feb. 3
Date: 2 Feb 2024

Key Concepts Learned: This week I learned about software risk and the ways to manage it. I learned the kinds of risks exist for a project, the impact may risks have on a project, the strategy is needed to deal with risks.

Reflections on Case Study/course work: While I was working on my personal project, I tried to refactor code after reading the impacts of risk assessment. This helped me to increase my output in my code base by removing few bug fixes

Collaborative Learning: Reflect on collaborative experiences or group activities during the week. Consider how working with peers contributed to your understanding. The collaborative experience with my peers has taught me the way through which we can integrate third party Api’s to get the maximum output.

Further Research/Readings: To improve my backend development skills, I have started implementing a backend project by reading the documentation for the library. It taught me a lot of things such as importance of sync, async, streams, event loops etc.

Adjustments to Goals: Review the goals: Learnt a lot of basic Node.Js and javascript and express. Goals for next week: build few basic and intermediate node and express projects. Start building your own website through flutter and understand software architecture such as MVVM, MVC.

Week 3: Feb. 4 - Feb. 10
Date: 10 Feb 2024

Key Concepts Learned: This week, I plunged into the complex world of Software Configuration Management (SCM). I was able to handle the basic concepts such as version control, change management, and release management effectively. Besides, I learned about significant SCM tools, Git, Subversion, and Mercurial, that are used widely in developing software projects efficiently. I also learnt different configuration management techniques for different project. Also, the functions of configuration management were very beneficial for software development.

Application in Real Projects: If my reflective analysis of how SCM principles are implemented, then there is the understanding that they are vital in ensuring the reliability and integrity of software systems. Implementing robust version control systems can streamline collaboration between team members, facilitate code review processes, and increase overall project transparency. Though I know SCM practices are well being embraced for many technology projects, I also admit some of the challenges that one can face while implementing SCM practices in varied workflows that may require integration into existing tooling and team dynamics.

Peer Interactions/collaboration: It has been quite useful in enriching the learning experience. Considering collaboration with other students to bring me to diverse points of view and engaging me in meaningful SCM best practices and challenges has greatly redefined peer collaboration. Interactions with the classmates have broadened my horizons and deepened my understanding of the collaborative nature of software development. Looking back on the whole course, my personal growth has revealed zones of great breakthrough, like being able to apply what I have studied within the course more effectively and think about ways to overcome problem proactively. Moving forward, I will continue learning and developing my skills in software configuration management.

Challenges Faced: One of the most huge tasks this week has been in trying to understand the subtle implications of branching and merging strategies within SCM frameworks. While theoretically I'm under, it's practically tough to execute this in such circumstances. Furthermore, establishing project dependencies and team dynamics proves more challenges during effectively applying these strategies. Additionally, resolving conflicts in code and keeping code consistency between branches is a task which requires further investigation and refinement.

Personal development activities: Through supplementary readings and online tutorials in relation to enhanced SCM techniques, some efforts on such a subject ensued. Further, I have a participation in SCM-focused webinars and am actively seeking mentorship from seasoned practitioners to be able to comprehend further best practices and emerging trends in the field.

Adjustments to Goals: The goals for the previous week were accomplished. The goals for next week are work on personal website and create the frontend properly and apply all the previous work.

Week 4: Feb. 11 - Feb. 17
Date: 17 Feb 2024

Key Concepts Learned: This week, we explored project planning in software project management with key elements in creating comprehensive project plans, which included scheduling, budgeting, and manpower planning. The presentation showed how continuous planning can always adapt to project dynamics, which resonated with me because flexibility and adaptability are useful while managing software projects.

Applications of Concepts to Real Projects: Understanding the components of project planning, such as the Work Breakdown Structure and resource allocation, helped me to better organize and allocate resources in the ongoing software project. By applying the top-down and bottom-up planning approaches, there is better strategic alignment and operational efficiency, especially in task delegation and timeline estimation.

Interactions with Peers: Discussing project scheduling and budgeting challenges with peers provided practical insights into overcoming most of the common problems that come along. Sharing experiences on how one could effectively use contingency planning in response to unexpected changes in a project was particularly enlightening, fostering a collaborative learning environment.

Challenges Faced: One big challenge was getting a clear picture on how to add resources to a delayed project and its potential to further delay the project. It’s a phenomenon known as Brooks' law. It challenged my previous assumptions about project acceleration and motivated me to think critically about resource management.

Personal Development Activities: To deepen my understanding, I got a simulation exercise by creating a project plan for a hypothetical software project. This hands-on practice helped me apply theoretical knowledge to practical scenarios and thus enhance my project management skills. This exercise also will help me a lot for my future understanding of software management and best ways to build it.

Goals for Future Learning: In the future, I intend to delve further into advanced techniques and tools used for project planning so that I can become more efficacious in managing complex software projects. Particularly, I want to be keen on agile planning methodologies that help in boosting flexibility and ensuring a pleasing level of satisfaction to stakeholders. This week's learning has given me depth and applicability for the use of the concepts in project planning

for software project management. The lessons learned not only honed my technical skills but also broadened my perspective on the strategic aspects of project management.

Week 5: Feb. 18- Mar. 9
Date: 9 March 2024

Key Concepts Learned: Content in this week looks more into the very nature of projects—software development, to be particular. I came to find out that, in contrast to routine jobs, projects are unique, transient undertakings with a beginning and an end. They aim at achieving predefined objectives and usually require a temporary assembly of resources. As it is temporary by nature, this kind of undertaking needs a focused management approach. The difficulties that project managers face dealing with software projects are invisibility, complexity, conformity, and flexibility, in which these aspects are often the key obstacles in software development vs. other fields. The course has involved the importance of the phases of the project that take initiation, planning, execution, monitoring, controlling, and closing. Subprocesses within the phase for different industries play a key role, especially the software projects wherein requirement gathering, designing, constructing, and testing steps are required.

Reflections on Case Study/course work: Reflecting on the case studies and midterm exams of the invisible nature of software contributing to the difficulty of project management, most of that is apparent when comparing subtleties of software projects to building projects, where related results are created, and you can see progress being made. Our coursework structure, therefore, will be around mastery in those challenges for software projects using industry-available standard metrics and tools. This report aimed at solidifying the skills of a project manager, which need to be varied in nature, including a blend between technical and soft skills, such as communication and problem-solving all very important to effectively deal with software projects.

Collaborative Learning: In all this, I learned strongly from the peers in our interactions. We role-played in scenarios where a person would have taken different kinds of project stakeholders. This really helped me with my understanding of how every phase was crucial to the life of a project. In a nutshell, my group discussed topics from the integration of diverse disciplines within the projects of software, while managing the flexibility of conformability through a series of group discussions. We had plethora of discussions related to our course project which included the project plan, risk management and mitigation planning, cost management and key features of the project. We shared experiences and strategies, which gave us a richer, more applied comprehension of the coursework.

Challenges Faced: Thus, it has been a very busy week for me, appreciating the depth of what Configuration Management (CM) is all about and how it is key to managing software projects. This was a clear indication of how complexity arises in handling many change requests within the software life cycle. Further, the preparation for the midterm required a kind of revisit to all the chapters in a go, so the process was quite time-consuming. Making sure I was acquainted enough to not only memorize but apply the concepts of each chapter. Each such obstacle could serve as a learning opportunity, and this prompted me further to explore the depth of software project management and software configuration management. I could realize that the entire complex of such activities as effective project management in software went through

organizational processes, and it allowed me to appreciate the value of the well-structured CM system to pass through it successfully.

Further Research/Readings: During preparation for my midterm exams, I reviewed all chapters, read again, and then actually re-read each more critically. This really helped me fit the big picture of Software Project Management as a coherent whole, rather than just a collection of independent parts. Most interesting, and impactful, is the integrative view of how each flow into the next and how the stage set for successive activities is that set out from initial planning. To complement that reading, I added some readings about modern methodologies in project management, which would contextualize the traditional methodologies mentioned in the lectures with current methodologies. After my midterm exams, I was able to concentrate on my personal project and using work breakdown structure I was able to devise a bottom-up plan to complete my deliverables timely.

Adjustments to Goals: My initial ambitions were set to grasp the entirety of project management within the confines of software development. But this week's digging really deeper into the faults of software projects meant I could refocus my goals much more toward teasing out the minutiae of the Initiation and Planning phases. The above elaborated refined goals are what I hope to apply in the continuing personal project to manage them with a keen eye on the critical early stages. Along with thoroughly reading chapter 7 to retain a deeper understanding of the topics project monitoring and control so that it helps to establish me baselines of all key factors in project management.

Week 6: Mar. 10 – April 14
Date: 14 April 2024

Key Concepts Learned:
For my final week in the learning journal, I grasped crucial concepts from software project management and engineering. I learned about the importance of project initiation, where setting clear goals and scope at the start ensures a strong foundation. Moving on to risk management, I grasped the significance of identifying potential threats and opportunities early in the project lifecycle. By learning to anticipate issues that could derail our objectives, such as budget overruns or technological mismatches, and planning contingencies, we could ensure smoother project progression. Another area was configuration management, which involves managing changes to the project's software configurations. This ensures that our project adapts to changes without compromising on quality or timelines. The discipline it requires to track all alterations and maintain consistency across versions of software products has been enlightening. Lastly, project closure emphasized the importance of wrapping up projects neatly and learning from them for future endeavours.

Reflections on Case Study/course work:
In the final week, the reflection of all the chapters from project monitoring and control to project risk management were covered. With the final exam on approach, I reviewed all the chapters from the book as well as the ppt to get a thorough clarity of all the concepts. To complement that reading, I added some readings about the different poster papers that were provided by the professor. The focus of our coursework was on mastering issues for software projects utilizing common measurements and techniques that are available. The purpose of this

posters was to reinforce the various talents that a project manager must possess. These skills include a combination of technical and soft skills, such problem-solving and communication, which are all crucial for managing software projects successfully. These readings not only enriched my theoretical knowledge but also provided practical insights that I could apply directly to our ongoing projects and personal development projects.

Collaborative Learning:
Working on the automated code review system project, I actively engaged with peers. Working closely with peers, we fostered an environment of open communication and knowledge sharing. Through discussions, we shared insights on improving code quality and streamlining the review process. Collaborative problem-solving sessions helped us overcome technical challenges, enhancing our solution's effectiveness. This interaction not only strengthened our project but also enriched my learning experience. It was very insightful to hear about others' experiences with contingency planning to handle unforeseen changes in a project, as this promoted a cooperative learning atmosphere.

Challenges Faced:
One of the main challenges was integrating new technologies into our automated code review system. Initially, there was a steep learning curve. The complexity of configuring these models to accurately assess and review code was higher. However, through dedicated research and team discussions, we managed to overcome this hurdle, which was a significant learning point for me. We also identified major risks that had a good probability in our project and prepared different risk management plans to prevent it. We also developed a budget for the implementation of our project given in the project report. This hands-on practice helped me apply theoretical knowledge to practical scenarios and thus enhance my project management skills.

Further Research/Readings:
For my final week, I read he the book thoroughly irrespective of the topics covered in class or the presentation available. The text topics covered like impact analysis, configuration management, continuous integration, regression testing and traceability. These topics provided a in depth explanation of various vague topics in my mind. One key area of further research was in advanced configuration management tools. I explored various industry-standard tools such as GitLab and Jenkins, reading about their integration capabilities and how they could automate workflows in our projects. This helped me understand how to better streamline our development processes and ensure consistency across project stages. I found several valuable resources that discussed modern risk assessment techniques and mitigation strategies, which were particularly useful. These readings helped me better prepare for potential issues that could arise during the lifecycle of our software projects.

Final Reflections:

Overall Course Impact: The course until now has helped in the understanding of feasibility when it comes to software development. It has also helped me to understand the risk factors associated when it comes to building a new project and budget of the project. For the third week the course has helped me to look at the overall project through a business perspective. The course has taught me to always follow iterative model to analyze the risk associated with the deliverables. After week four, the project planning my understanding the importance of putting effort into proper detailing for better project planning, coupled with my strength in explaining the feasibility of projects and allocation of resources efficiently, has been very helpful. The iterative model for risk management is very valuable in project planning; it underlies many of the other approaches. In week 5, with this course, my view on software project management changed, and it changed a lot. For that, I have really learned to appreciate invisible threads that tie the phases of a project together and the skilful viewpoint it takes to lead a project from imagination through to completion. In truth, the iterative model we have studied is a framework and a mindset in managing the fluid nature of software development. It will help me better understand the risk associated with my projects moving forward and how to handle it efficiently. Throughout this learning journey, I maintained a well-organized approach, regularly updating my journal entries at least twice a week. This discipline helped me track my progress and reflections effectively, ensuring a comprehensive understanding of the course material and its application.

Application in Professional Life: With trying to build my own personal website. The course has taught me to manage the implementation of the development to get maximum output and taught me time management. In the third week I have learnt about risk management and the ways to deal with it which involves risk mitigation, risk avoidance etc. I have tried to implement these learning in my current project to make it more efficient and for a timely delivery. The project planning techniques from Week 4 have been life-changing for my personal website. Gaining practice in the segregation of tasks with a Work Breakdown Structure has greatly facilitated the development process, optimizing time management and resource utilization. The week's talk on risk management strategies, such as avoidance and mitigation, has given me the confidence to be ready for prospective issues and reduced the time gaps during project execution. The teachings from this course in project management directly impacted the approach I took with some of my own projects. I will be initiating building a website; I will try to plan it as efficiently as possible. This structured approach helped a lot not only in being able to see the efficiency in the process of development but, importantly, in being effective in managing my time to produce a product that surely would be something I am proud of.

Peer Collaboration Insights: The Peer collaboration in the project has taught me the possible solutions to a problem and the power of brainstorming. When we talk about market analysis for the project, we talked about the potential challenges the project might face and risks associated with challenges. We talked about the challenges that has helped me to think critically, problem-solve effectively, and adapt to evolving industry practices. The discussions have been very interactive and helpful, especially during project planning. It was encouraging because it honed a sense for my peers and me to come up with creative methods to tackle market analysis and potential problems within a project. This collaborative environment has sharpened my critical thinking, helping me to approach software project management as a one-stop shop for many phases and being able to adapt to market trends more effortlessly. On 15th

Feb we also had a pitch related to our project. In week 5, the most interesting thing and the best learning that I learned from this course was the collaborative learning experiences that took place. From many discussions, one learns how multiple perspectives can come together to give a wholesome solution to a problem. The combined wisdom from my peer group contributed largely to my learning and taught me that while software might be developed by code, leading projects stem from solid teamwork. Moreover, me and my group members discussed about the project plan for the automated code review system. For the final week our group was able to devise a budget and risk management plan for the project and implemented it according to the work breakdown structure. We also anticipated or identified 10 risk factors that might happen and so devised different strategies to solve or mitigate the risks. Hence completing our group project and concluding the presentation.

Personal Growth: I have undergone the study of software configuration management has challenged me to think critically, problem-solve effectively, and adapt to evolving industry practices. I have identified areas of improvement in my SCM skills and actively sought opportunities for enhancement through self-directed learning and hands-on practice. Additionally, reflecting on my experiences and engaging with peers has contributed to honing my communication and collaboration skills, enabling me to articulate ideas effectively and contribute. Since Week 3, the deep dive into software configuration management (SCM) has enriched my technical knowledge and stimulated further analyses that may aid the effective interworking of features in the Web Development Program. I have identified and developed some gaps in SCM skills that require further learning in the respective fields. The peer collaborative sessions have refined my soft skills, sharpening my ability to present complex ideas succinctly and effectively contribute to collaborative projects. This has, therefore, necessitated even more critical a look at the conceptual and practical undertakings of software project management as a learner. This course has really pushed me beyond the level of understanding I originally held and made me develop a detailed perspective on the complexity a person goes through while managing software projects. Moreover, I acquired a further confidence, really making me apply such principles to real cases—an added value to my personal and professional growth. This learning journey has been exceptionally rewarding. I gained a deep understanding of software project management and engineering concepts. Applying these concepts in real-world projects, like the automated code review system, and personal development projects using Node.js, Express, iOS, and Flutter, I've seen significant growth in my technical and project management skills. The challenges faced and overcome during this period have prepared me for future software development endeavours, making this experience invaluable.