<u>**Learning Journal**</u>

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<u>**Key Concepts Learned:**</u>

In **<u>Chapter 5</u> -** we discussed on **Configuration Management** it is the process of controlling and documenting change to a system, features in a project can change anytime at any cost. This is not unusual and is a common practice on software projects. There could be **many change requests** during the entire project duration. Thus many different versions of the software product results. Managing change requests and different versions of the software product is done in **configuration management**. CM is the **foundation** of a project, absence of it collapse the project discipline. There can be many reasons by which a project may change, the source of changes for project are:

- Changes in funding.
- Technology advancements.
- Solutions to problems.
- Scheduling constraints.
- Customer expectations.
- Unexpected opportunities for an improved system.

Software are very **easy to change**, they are invisible thats why CM is so important for any software project. Software is often changed during the life cycle. Some of the **benefits of CM** to a project are:

- Reduces confusion and establishes order.
- Organizes the activities necessary to maintain product integrity.
- Ensures correct product configurations.
- Limits legal liability by providing a record of actions.
- Reduces life-cycle costs.
- Enables consistent conformance with requirements.
- Provides a stable working environment.
- Enhances compliance with standards.
- Enhances status accounting.

Documentation is of the main feature of CM, some of the information **needed for documentation** in a CM system are Project name, Time Stamp, Document number, Author, Document type and Version number. A good CM system ensures **secure**, **audit facilities**, branching, version control, access to all teams and continous integration.
The **main purpose of CM** are:
- Configuration identification

- Configuration Control
- Configuration Status accounting
- Configuration Audits

Configuration identification to define baseline components, in this phase the major activities are **data identification**, identify acceptance, **identify configuration**, define baselines to any project. In **Configuration Control** phase a mechanism for preparing, evaluating, approving or disapproving all **changes throughout the lifecycle**. The individuals, group, or groups who are responsible for evaluating, accepting, and tracking the change proposals for the various baselined products . How change requests will be linked to the trouble-reporting system. The procedure that will be followed to update all affected software. In **Configuration Status accounting** phase, **what all changes have I made to the system** reflects, changes remain to be implemented. Provide a mechanism for maintaining a record of the evolution of a system at any time. Report on the traceability of all changes to the baseline throughout the software lifecycle. And the last purpose is **Configuration Audits**, ensuring the s**ystem build satisfy the stated needs of the objective of the project**. Provide a mechanism for determining the degree to which the current state of the system mirrors the system pictured in baseline and requirements documentation. Every incorporated requirement change shall be traceable back to an approved change request.

Chapter 6 - deals completely with **Project Plan**, It is one of the most time-consuming project management activity. Plans must be regularly revised as new information becomes available. In this phase we create **baseline** structure here which is used to execute, **monitor** and **control** the **project**. Top down planning and bottom up planning. But first of all we need to break the entire project work into manageable small tasks. In top down planning we first assign time duration for the entire project. **Work breakdown structure** (WBS) is the systematic way of **breaking down the complete project work into smaller tasks**. WBS also maintains relationship among tasks so that it is possible to know which tasks precede another tasks, which tasks can not start before completion of some other task.

Resource allocation should be based on closely matching required skills with those availabl. **Difficulty** of a problem is defined as the cost of developing a solution. Adding people to a "late" project makes it "later" because of communication overheads. **Activities** in a project should be organized to produce **tangible outputs** for management to judge progress. **Milestones** are the end-point of a process activity. **Deliverables** are project results delivered to customers.

Project Scheduling - It is defined as **split project into tasks** and estimate time and resources required to complete each task. Organize tasks concurrently to make optimal use of workforce. **Minimize task dependencies** to avoid delays caused by one task waiting for another to complete. **Graphical notations** are normally used to illustrate the project schedule for example **GANTT Chart**. Bar charts show schedule against calendar time. The **critical path** is determined by adding the times for the activities in each sequence and determining the longest path in the project. The critical path determines the **total calendar time required for the project**.

Along with supplier planning for any software or hardware, **quality planning** should be clearly outlined with the supplier so that **quality does not differ** on software products made by the supplier to the ones made inhouse. **Communication** with customers and suppliers will be done and to ensure that miscommunication does not occur. **Quality assurance** is one of the most important aspects of any project. Using techniques like **WBS, CPM**, Goldratt's critical chain method or any suitable technique, a complete project schedule structure should be made for the project. **Project budgeting** is again one of

the most important project planning tasks. For iterative projects, the entire project plan spans several iterations

Reflections on Case Study/course work:

In the class we had long lectures covering both the chapters, while explaining all the concepts we had a live examples for the topics and I use to **compare it with any of the software project** that previously I was a part of. For me chapter 5 **concepts like the purpose of CM**, last two purposes I had few doubts, but during the lecture one of my peer asked a clarification to professor, she cleared it with a simple example now the concept is much better. About chapter 6 - the concepts were quite easy as compared to chapter 5 because some of the topics like **GANTT chart** In was already aware, while doing one of my assignment in other course. So with an example and how difficulty is measured and all was very well explained in class, also acquired more knowledge by reading textbook.

We were also introduced to the planning in a project, which has terms like activity, milestones, deliverables which was common to all. Eventhough the right meaning and while planning how to assign these things was also explained with an example in the lecture class.

Collaborative Learning:

Class is active in Collaborative learning as we had many discussions in class and anyone can answer others doubts. During the lecture time, under **CM section** many were having doubts including me, since its a **bit confusing** to grasp the concept. The main thing is, if someone has any doubt anyone can answer if they are willing to, this makes the class free to **share their thoughts and ideas**. When we moved to project planning, the whole class were able to interact in class as its a pretty common topic, even though there are few strange topics, we had really good interactive session during the lecture.

Also regarding the course project, since we have submitted the initial phase and market analysis, last week we had to **pitch our project** idea infront of the class. We had few team meeting, all of them actively researched for the pitch of the project, **divided the part of the project to present.** Had few practices before the lecture and finally presented our idea, the present was quite nice. I think the panel head were impressed by our pitch of the project.

Further Research/Readings:

Because of the packed term this term and had many submission the last week, I could only read chapter 5. While reading itself I had many doubts in the session, it had many terms which werent familiar to me, But after the lecture, I had again read the chapter now the concepts seems clear as if now I can relate it to examples which were discussed in class. Also for the pitch of the project, we had researched a lot on the web, at that time I got to read many companies project. By just reading the companies product, I tried to figure out there, scope and the effort by which I could relate the concepts which were discussed in the class. After the seminar, since we have our midterm exams next week, I have started preparing for the exams. I initially started with chapter 1 and 2, which were the easiest out of six. Both reading the ppts and the textbooks, helps to have a clear knowledge on the topics discussed in the lecture classes.

Adjustments to Goals:

Last week we didnt have lecture class, instead it was the pitching of project ideas, which went well. Now next week is the midterms, since I have already started with the preparation for midterm with the starting chapters, now my plan for this is to complete the remaining chapters too. Since I have few

assignment deadlines of other course in between, I'm planning to cover up atleast one chapter as day from now, that is covering both the ppt and textbooks topics. So that the last two days I can keep for revising all the topics from 1-6. Since exams are going to be mcqs and fill the gaps, I need to read the textbook really well and be thorough with all the concepts discussed in class. I have already marked few topics, that I have few doubts in. I would need to cover up reading and understanding that topics too. Also before the midterms, after covering up the topics, I'm planning to read the journals also which I have submitted so far, which would really help me understand atleast few topics with the examples discussed in the class to relate to. Also I will be creating a small notes of main topics to keep in mind before the exam and to revise before the exam.

<u>Abbreviations:</u>

SPM - Software Project Management.
CM - Configuration Managment
WBS - Work breakdown structure
QA - Quality assurance
CPM - critical path method