Learning Journal Template
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Course: Master of Engineering Software Engineering
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Week 1: 28 Jan - 03 Fab
Date: 3 Fab

Key Concepts Learned:

CH#3

Effort estimation:
It's tough to estimate an effort due to human error although it's the most important thing to estimate for budget.

Different effort estimation techniques:
Experienced Based Technique: Based on judgment.
Using different estimation techniques: Delphi, COCOMO

Algorithmic Cost Modeling:
Size Ratio = Size(New Project)/Size (Old Project)
Estimated Effort (New Project) = Effort (Old Project) * Size Ratio

Data Function Types:

Internal Logical File (ILF):
A user-identifiable group of logically related data or control information maintained within the boundary of the application

External Interface File (EIF):
A user-identifiable group of logically related data or control information referenced by the application, but maintained within the boundary of another application

External Input (EI):
An EI processes data or control information that comes from outside the application's boundary. The EI is an elementary process.

UFP Calculation:

Effort = A *$Size^B$ *M

A is an organisation-dependent constant, B reflects the disproportionate effort for large projects and M is a multiplier reflecting product, process and people attributes.

Cost Estimation:

Different cost estimation techniques:
Schedule estimation
Resource estimation

COCOMO:
Based on LOC (Line of code)

Application in Real Projects

Construction Projects:
Estimating costs is crucial to provide an accurate bid. This involves predicting expenses for materials, labor, and equipment. Effort estimation ensures the project is finished on time.

Software Development:
Estimating the time and resources for coding, testing, and deployment helps in budgeting and setting realistic timelines.

Manufacturing Processes:
Cost estimation determines manufacturing expenses, aiding in budgeting. Effort estimation helps plan production schedules and allocate resources.

Research and Development (R&D) Projects:
Cost estimation is vital for managing research expenses. Effort estimation helps in planning research phases and trials.

Event Planning:
Predicting costs for venue, catering, and logistics, along with effort in task coordination, ensures a successful event.

Aerospace Engineering:
Estimating costs for design, testing, manufacturing, and compliance is crucial for project success and financial planning.

Peer Interactions
Get to know about different techniques and methods to calculate human efforts and cost estimation.
I had a meeting with a full-stack Developer from a well-known IT company Media Platforms **Mr. Kashyap Patel** about budget and effort estimation. He delivered a bunch of well-defined **spirals, agile, and rapid development** methodologies which were damn useful.

Challenges Faced

#1

Tough to understand COCOMO for the first time. Also, need to pay attention as much as possible.

#2

It’s hard to find the best possible way to calculate effort and cost estimation while considering human error.

Personal Development Activities

#For Study

Study project management techniques. Further, Get to know about the most useful estimation techniques for time, effort, and cost after considering all human and mechanical errors.

Moreover, try to learn various methods to solve these errors and try to get the best value-to-performance ratio.

Goals for the Next Week

#Study Perspective

I will look into #CH4 and #CH5 as well. Having said that will cover the reference book for all previous chapters for a better understanding of the core concepts about project management.

#Project Perspective

I found we need more GD to find different solutions so, planned scheduling of virtual and physical meetings will be a great step. Working in a group of 2:2 for various tasks.