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COLLEGE OF ARTS AND SCIENCE

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DEPARTMENT OF COMPUTER APPLICATIONS (PG)

Course Name   **: SOFTWARE PROJECT MANAGEMENT**

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UNIT-I

Software Project Management

Topic: **Introduction to Software Project Management**

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A project is well-defined task, which is a collection of several operations done in order to achieve a goal (for example, software development and delivery).

A Project can be characterized as:

• Every project may has a unique and distinct goal.

• Project is not routine activity or day-to-day operations.

• Project comes with a start time and end time.

• Project ends when its goal is achieved hence it is a temporary phase in the lifetime of an organization.

• Project needs adequate resources in terms of time, manpower, finance, material and knowledge-bank.

Software Project

A Software Project is the complete procedure of software development from requirement gathering to testing and maintenance, carried out according to the execution methodologies, in a specified period of time to achieve intended software product.

There might be many differences but according to my knowledge there are four basic differences between software project and other projects.

1) software project are based on logical work ,while other are based on physical work.

2) we can't measure complexity of software project until we actually work on it.

3)There is invisibility of progress in software projects. Means customers of software project can't see the outcome in middle of project, because customers don't know about coding and other technical work and as we know an incomplete project will not give an outcome. Consequently it becomes very difficult to satisfy customers of software project that actually their work is being done by team.

4)one good point of software projects is that, they are flexible. Customer only wants final result, so rest of things are in control of programmer ,he can modify software at any stage. While this thing is not in other projects, as every thing is in front of customer he is aware about progress he can view what work is being done by project manager and team so it is not in the hands of project team to make changes at any stage of project development.

Many techniques of general project management also apply to Software Project Management.

- **1. Invisibility:** With Software progress is not immediately visible, however for physical artefacts like Bridge progress can be seen over the period of time.

- **2. Complexity:** Software project contain more complexity than other engineered artefacts.

- **3. Conformity:** Physical systems are governed by consistent physical law while Software developers have to conform to the requirements of human clients.

- **4. Flexibility:** Software system are particularly subject to change.

Software Project Management consists of many activities, that includes planning of the project, deciding the scope of product, estimation of cost in different terms, scheduling of tasks, etc.

- **The list of activities are as follows:**

- Project planning and Tracking

- Project Resource Management

- Scope Management

- Estimation Management

- Project Risk Management

- Scheduling Management

- Project Communication Management

- Configuration Management

1. **Project Planning:** It is a set of multiple processes, or we can say that it a task that performed before the construction of the product starts.

2. **Scope Management:** It describes the scope of the project. Scope management is important because it clearly defines what would do and what would not. Scope Management create the project to contain restricted and quantitative tasks, which may merely be documented and successively avoids price and time overrun.

3. **Estimation management:** This is not only about cost estimation because whenever we start to develop software, but we also figure out their size(line of code), efforts, time as well as cost.

   If we talk about the size, then Line of code depends upon user or software requirement.

   If we talk about effort, we should know about the size of the software, because based on the size we can quickly estimate how big team required to produce the software.

   If we talk about time, when size and efforts are estimated, the time required to develop the software can easily determine.

And if we talk about cost, it includes all the elements such as:

- Size of software
- Quality
- Hardware
- Communication
- Training
- Additional Software and tools
- Skilled manpower

4. Scheduling Management: Scheduling Management in software refers to all the activities to complete in the specified order and within time slotted to each activity. Project managers define multiple tasks and arrange them keeping various factors in mind.

For scheduling, it is compulsory –

- Find out multiple tasks and correlate them.

- Divide time into units.

- Assign the respective number of work-units for every job.

- Calculate the total time from start to finish.

- Break down the project into modules.

5. Project Resource Management: In software Development, all the elements are referred to as resources for the project. It can be a human resource, productive tools, and libraries.

- Resource management includes:
- Create a project team and assign responsibilities to every team member
- Developing a resource plan is derived from the project plan.
- Adjustment of resources.

6. Project Risk Management: Risk management consists of all the activities like identification, analyzing and preparing the plan for predictable and unpredictable risk in the project.

- Several points show the risks in the project:
- The Experienced team leaves the project, and the new team joins it.
- Changes in requirement.
- Change in technologies and the environment.
- Market competition.

7. Project Communication Management: Communication is an essential factor in the success of the project. It is a bridge between client, organization, team members and as well as other stakeholders of the project such as hardware suppliers.

From the planning to closure, communication plays a vital role. In all the phases, communication must be clear and understood. Miscommunication can create a big blunder in the project.

8. Project Configuration Management: Configuration management is about to control the changes in software like requirements, design, and development of the product.

The Primary goal is to increase productivity with fewer errors.

Some reasons show the need for configuration management:

* Several people work on software that is continually update.

* Help to build coordination among suppliers.

* Changes in requirement, budget, schedule need to accommodate.

* Software should run on multiple systems.

- **Tasks perform in Configuration management:**

- Identification

- Baseline

- Change Control

- Configuration Status Accounting

- Configuration Audits and Reviews

People involved in Configuration Management: