

AKTU

NEXTGEN ENGINEERING

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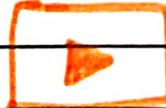
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FREE COURSES



UNIT-01 (SPM)

- Importance of Software Project Management
- Activities - Methodologies [AKTU 2022-23]
- Categorization of Software Projects [AKTU-2021-22]
- Setting Objectives
- Management Principles [AKTU 2022-23]
- Management Control
- Project Portfolio Management [AKTU 2022-23]
- Risk Evaluation [AKTU 2021-22]
- Strategic Program
- Step wise Project Planning

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Software Project Management :-

- Software Project Management is an art and science of Planning and leading Software Projects
- Main goal is to enable a group of developers to work effectively toward successful Completion of Project
- Project Manager is an administrative leader of the team.
- Various Factor make the job very Complex Changeability, Complexity Uniqueness

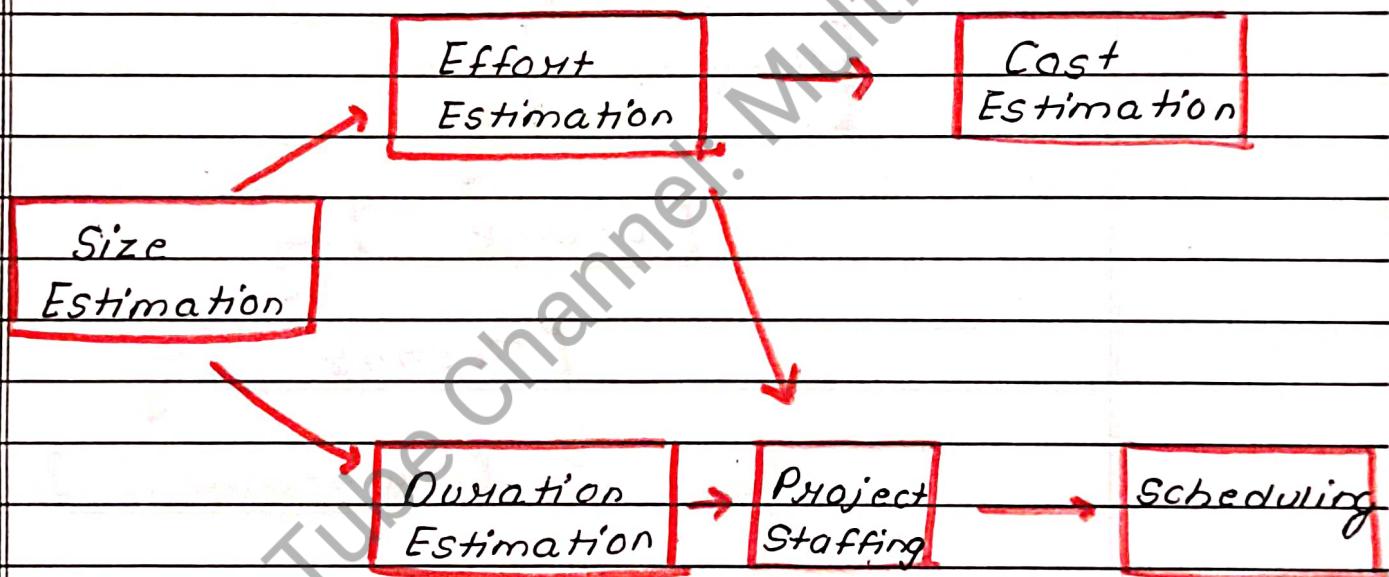
Job Responsibilities of Project Manager

- Planning
- Organizing
- Staffing
- Directing
- Monitoring
- Controlling
- Innovating
- Representing

Project Planning

- Estimation (Cost, Duration, Effort)
- Staffing (staff organization, staff plans)
- Scheduling manpower & other resources
- Risk management
- Miscellaneous plans (Quality assurance plan)

Precedence Ordering



Activities Covered by SPM :-

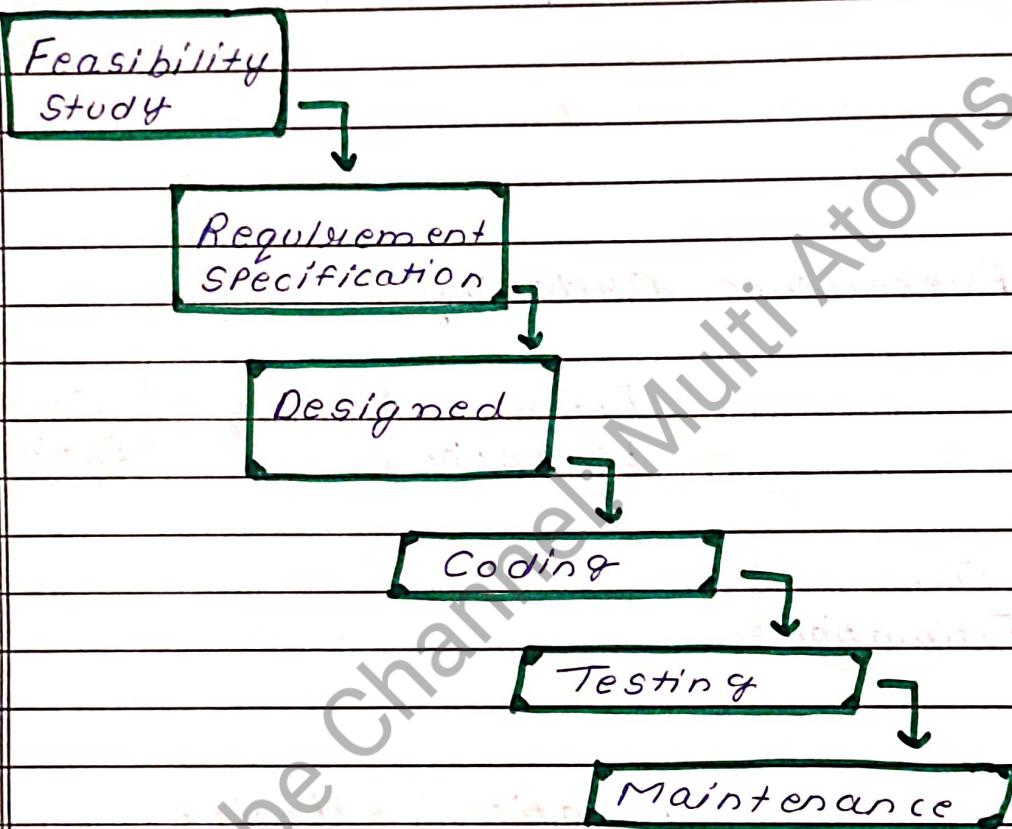
Feasibility Study

↓
Plan

Project Execution

Methodologies :-

1. Waterfall



- The Waterfall model is the simple and Classical model of all model
- This model is known as Linear Sequential model
- This model is the theoretically model not a practical model
- In this model each an every Phase must be complete before moving

to the next Phase

- This model is suitable for small Project

Advantage

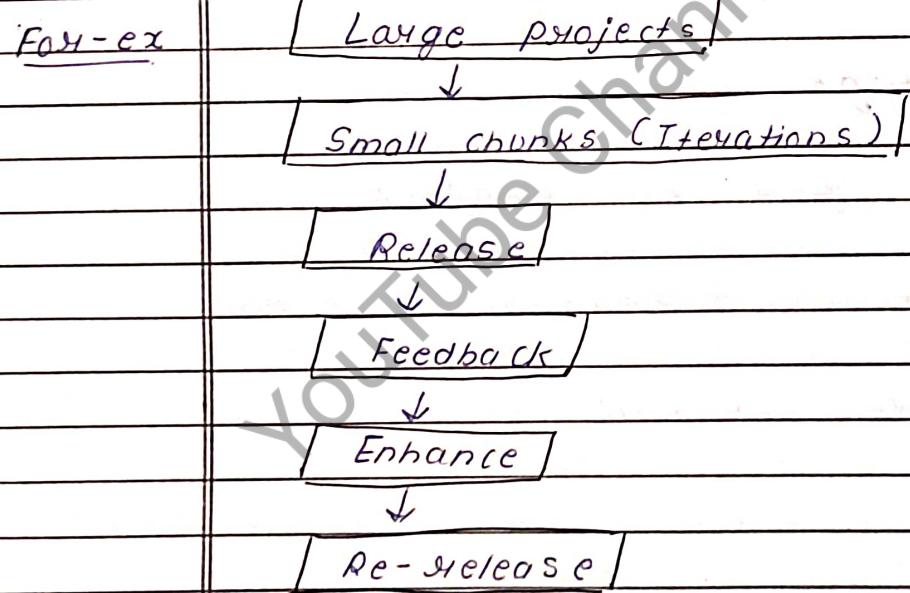
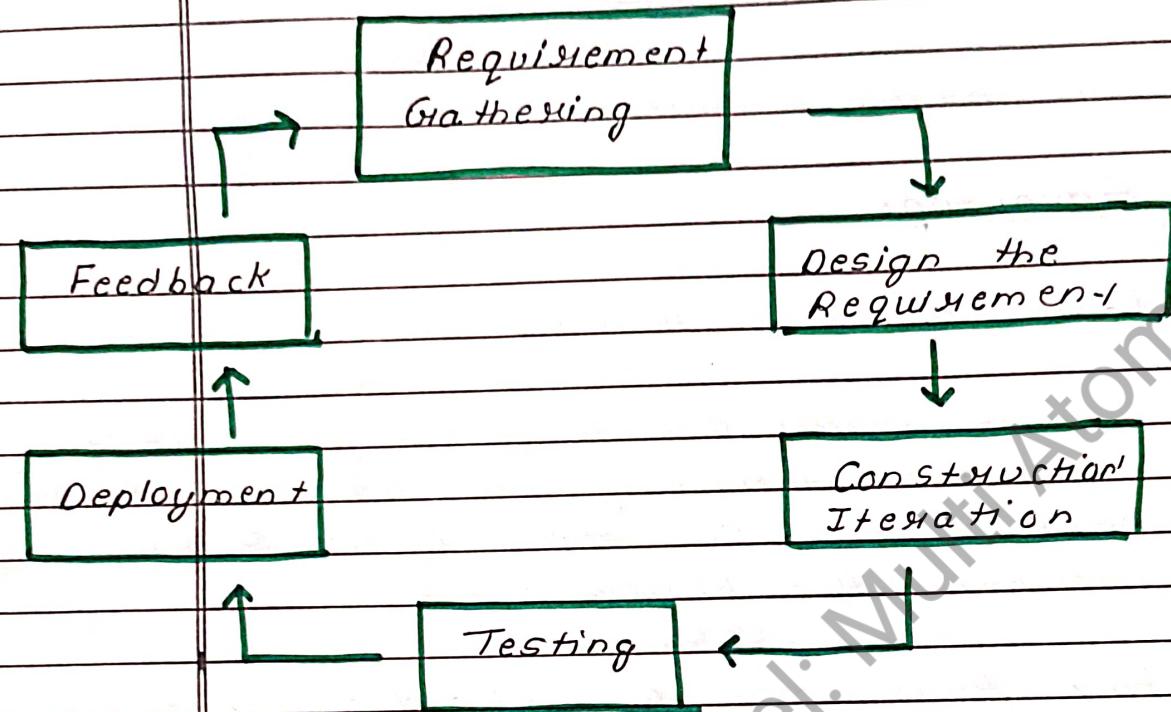
- Waterfall model is very simple and easy
- In this model once a phase is successfully completed then only we can move to the next phase so, there is no overlapping between the phase
- Each phase has a well-defined task and a review process

Disadvantage

- Not use for big-project
- we can't move back in last phase
- This model contains high risk
- It is poor model for complex and object oriented projects

2. Agile [AKTU - 2021-22]

- The word Agile mean "Move Quickly"



Advantage

- Face to Face communication with client.
- Changes
- Time

Disadvantage

- Less documentation
- Maintenance Problem

3. PRINCE 2

- PRINCE2 stands for Project in Controlled Environment 2 and it's a structured Project management methodology
- It came out of the UK government and has spread around the world
- It consists of 7 Principles, 7 themes and 7 Processes
- It is not used in the smaller Project

Critical Path :-

- Critical Path is a way to visualizing your Project
- Critical Path method is a diagram which shows the sequence of activities of a Project along with their Earliest Start and Earliest Finish time.
- Critical Path is the flow of activities

Different types of Software

1. System Software

manages & operate Computer Co's

2. Application Software

Perform Specific Task or Funⁿ
Web browser

3. Real time Software

4 Business Software

5 Utility SW

Provide tools → to enhance Performance

Categorization of SP [AKTU-2021-22]

1. Compulsory v/s Voluntary Users

- In Compulsory users may organⁿ using bar code or ID Cards for each employee to enter or leave workplace. This is compulsory for each employee
- MS Word, Games, Power Point are voluntary Sy^m as the organization may or may not use these application Sy^m

2. Information VS embedded System

- Any data in or out system like Stock Control, library management system are called Information System
- System which automatically controls the temp in building, sequencing in a washing machine are called embedded System

3. Objective driven VS Product driven

- It is to satisfy a specific goal
- In Object driven projects the main objective of the final outcome is considered. But doesn't take much effort to build the finalized Fully Functioning expected version at the initial iteration
- Here the base problem is identified and only have to develop a previously determined or designed product. That means only the implementation part of the project is remaining.

Management Principle

1. Division of Work

- Increase Specialisation
- Increase Productivity
- Increase Efficiency

2. Authority and Responsibility

- Right of Superior to give orders to his subordinate
- Obligation for performance

3. Discipline

Respect of Auth" → Smooth functionality

4. Unity of Command

Subordinate receive order from only 1 Superior otherwise creates confusion

5. Unity of Direction

Related category under same group & under the control of manager

6. Vision and mission

- Every project or initiative should begin with the end in mind.

7. Salary Should be Paid on time

Management Control

- Achieved goal within a set of time
- Process of monitoring and regulating activities within an organization to ensure that goals and objective are achieved effectively
- Comparing actual & planned performance

Project Portfolio Management (PPM)

- Find best combination of resource to achieve objective
- PPM define how an orgⁿ approaches Projⁿ prioritization, resource allocation, budgeting scheduling and other major component
- Project Portfolio management is a term used by project manager or project management organization to describe method for analyzing and collectively managing a gp of current or proposed projects based on numerous key characteristic
- Project Portfolio management has become a key component in organization as they look to enhance their ability to manage

multiple Projects

Objectives of PPM :-

- It Create a descriptive document, which contain vital information such as name of Project, timeframe, Cost and business Objectives
- Selection of the team players, who will work towards achieving the Project Objectives

Benefits

- Strategic Alignment
- Resource Optimization
- Risk Management

Cost Benefit Evaluation Technique :

Cost : Back Back Analysis

Determine if the Benefits of the Project outweigh its Costs

- It is one of the important and common way of carrying out an "economic assessment" of a Proposed information system

1. Net Profit

Total cost Spend - Total income earn

2. Payback Period

Time taken to payback the initial investment

3. Return on Investment

How much profit you can expect in the future

4. Net Present Value

Determine Investment is financially beneficial by comparing value of future profit to its initial investment

Risk Management

→ Process of identify assessing (analyze) & mitigating (minimize) risks

1. Risk Assessment

→ Identify and Evaluate Risk.

(a) Risk Identification

→ Identify Risk that could affect Project & Organization

(b) Risk Analysis

→ After identify → They need to analyzed to understand their nature, cause and consequences

→ Quantitative

→ Qualitative

(c) Risk Prioritization

Prioritize risk based on their significance & impact. Take Immediate Action

Risk Control

Taking action to manage.

(a) Risk Planning

Produce a plan + delay with each risk

(b) Risk Monitoring

Keeping a close watch on risk to detect any changes or new risk

(c) Risk Resolution

Taking appropriate action to minimize the impact of risk

Strategic Project Management

Is about planning and execution

Project in a way → to achieve goals and objective

ex:- Prioritize project

Software Project Planning

Process of defining Project goal, tasks, timelines & resource requirement

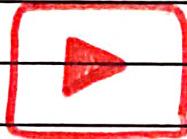
For the successful execution of a Software development project

Estimate Efforts & cost

Steps in Project Planning

1. Select Project
2. Identify Project Scope and Objectives
3. Identify Project Infrastructure
4. Analyze Project Characteristics
5. Identify Project Products and activities
6. Estimate effort for each activity
7. Identify activity risk

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