

# 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]
- Project Portfolio Management [AKTU 2022-23]
- Risk Evaluation [AKTU 2021-22]
- Strategic Program

- Step wise Project Planning
- Subscribing [Join Telegram]

- Monitoring
- Controlling
- Innovating
- Representing

- 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 administrator leader of the team.
- Various factors make the job very complex Changeability, Complexity, Ubiquity
- Job Responsibilities of Project Manager
- Planning
- Organizing
- Staffing
- Directing
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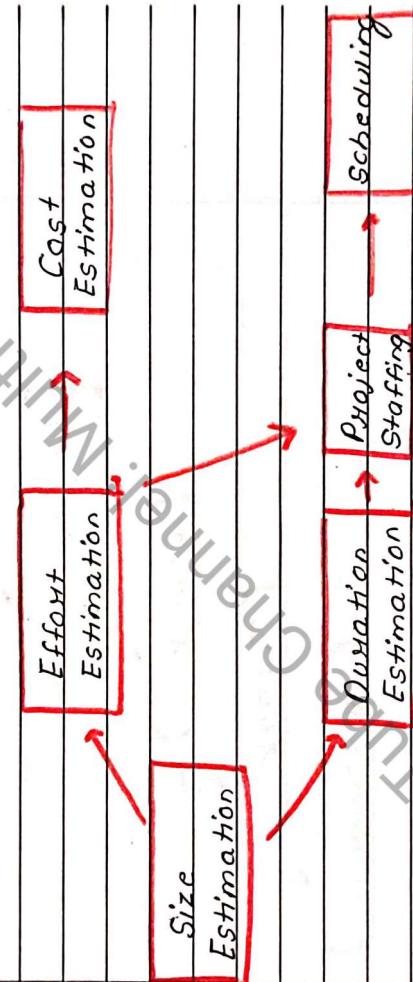
Innovating

Representing

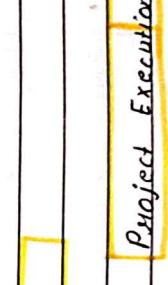
## Project Planning

- Estimation (Cost, Duration, Effort + )
- Staffing (Staff Organization, Staff Plans)
- Scheduling (manpower & other resources)
- Risk Management
- Miscellaneous (Plans & Quality Assurance plan )

### Precedence Ordering

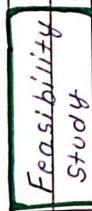


Activities Covered by SPM :-



## Methodologies :-

### Waterfall



- The waterfall model is the simple and classical model of all models

- This model is known as linear sequential model not a practical model

- In this model each an every phase must be complete before moving

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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

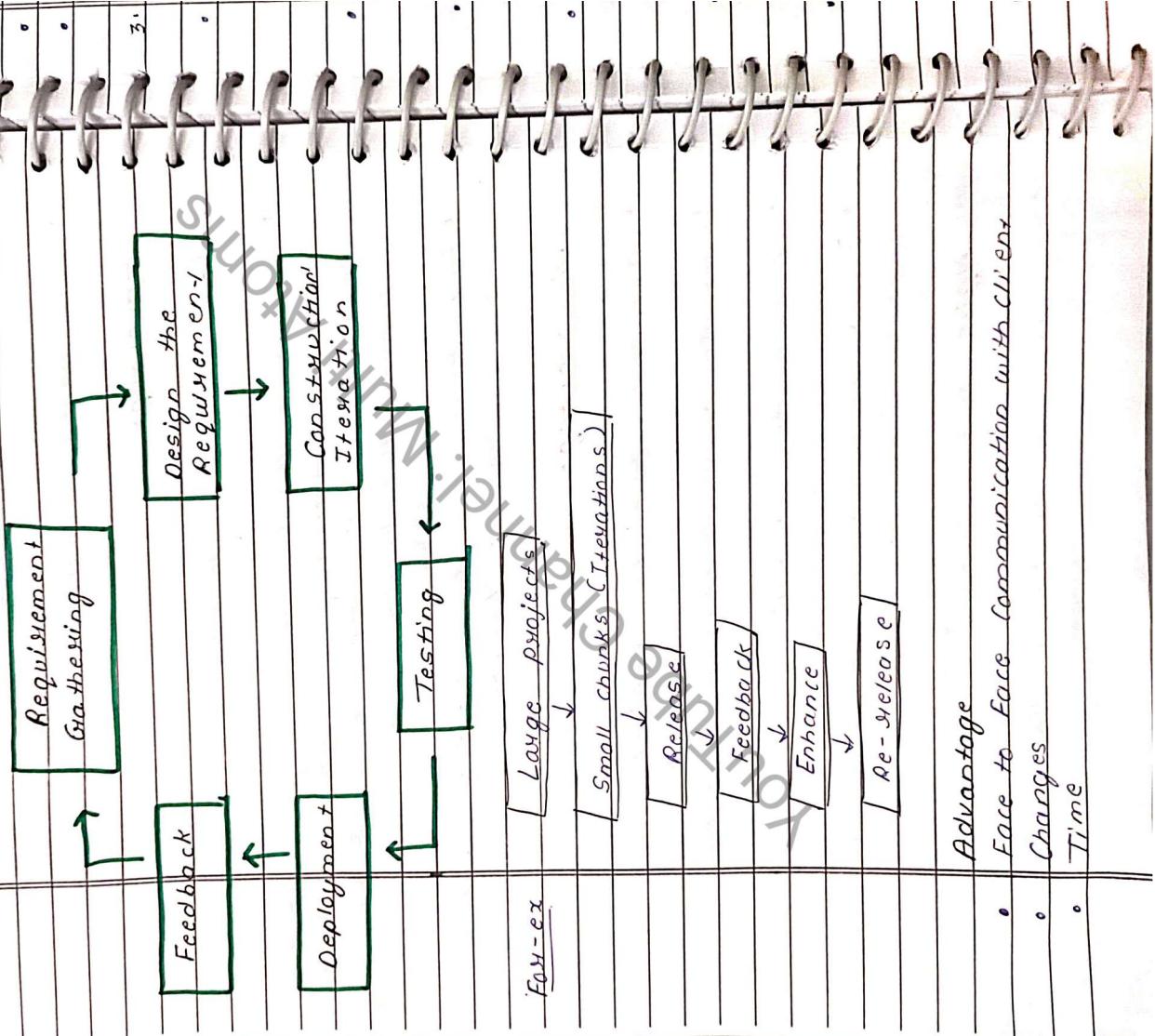
- Each phase has a well-defined tasks
- and a review process

Disadvantage

- Not useful 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"



Disadvantage

- Less documentation
- Maintenance Problem
- PRINCE2
- PRINCE2 stands for Project in Controlled Environment 2 and it's a structured Project management methodology
- It come out of the UK government and has spread around the world
- It consists 7 principles, 7 themes and 7 processes
- It is not used in the smaller project

Critical Path:

- Shows the sequence of activities of a project along with their earliest start and latest finish time.
- Critical Path method is a diagram which
- Critical Path is the flow of activities.

Different types of Software

1. System Software to manage & operate Computer (OS)
2. Application Software for specific Task or Fun such browser
3. Real time Software
4. Business Software
5. Utility Software → to enhance performance

Categorization of Software - 2021-22]

1. Compulsory v/s voluntary users
  - To compulsory users may organ using bar code or ID cards for each employee to enter & leave work place. This is compulsory for each employee
  - MS Word, Games, Power Point are voluntary system as the organization may or may not use these application system

## 2. Information V/S embedded System

- Any data in our system like Stock Control, Library management system are called Information System
- System which automatically controls the temp in building, sequencing of a washing machine are called embedded System
- 3. Objective driven V/S Product driven
  - It's to satisfy a specific goal
  - In Object driven Project 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 at the project is remaining.

## Management Principle

1. Division of work
  - Increase Parallelism
  - Increase Productivity
  - Increase Efficiency
2. Authority and Responsibility
  - Right of Supervisor to give order to his Subordinate
  - Obligation for performance
3. Discipline
  - Respect of Auth → Smooth functionality
  - Unity of command
    - Subordinate receive orders from only 1 Supervisor otherwise great confusion
  - Unity of direction
    - Related category under same group & under the control of Manager
4. Functioning
  - Vision and mission
    - Every project or initiative should begin with the end in end.
5. 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 org' approaches Proj' prioritization, resource allocation, budgeting scheduling and other major component

- Project Portfolio management is a team used by Project manager on Project management organization to describe method for analyzing and collecting managing a grp of current or proposed projects based on numerous key characteristics

- 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 Techniques:

- Cost : Back Back Analysis  
Determine if the Benefits of the Project Out weight 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's financial benefit by comparing value of future profit to its initial investment
5. Risk Management
  - Process of identifying assessing (analyzed) & mitigating (minimize) risks to minimize the impact of risk
6. Risk Assessment
  - Identify and Evaluate Risk.
7. Risk Identification
  - Identify Risk that could affect Project & Organization
8. Risk Analysis
  - After identify → They need to analyzed to understand their nature, cause and consequences
  - Quantitative
  - Qualitative

1. Risk Prioritization
  - (a) Risk Prioritization based on their significance & impact . Take Immediate Action
2. Risk Control
  - Taking action to manage
3. Risk Planning
  - (a) Produce a plan & delay with each Risk
4. Risk Monitoring
  - (b) Keeping a close watch on list to detect any changes on new risk
5. Risk Resolution
  - (c) Taking appropriate action to minimize the impact of risk
6. Strategic Project Management
  - IS about planning and execution
  - Project in a way → to achieve goals and objective
  - ex:- Prioritize Project

## Steps in Project Planning

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

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