INTRODUCTION TO PROJECT MANAGEMENT

What is a Project?

- A temporary endeavor undertaken to create a unique product, service, or result.

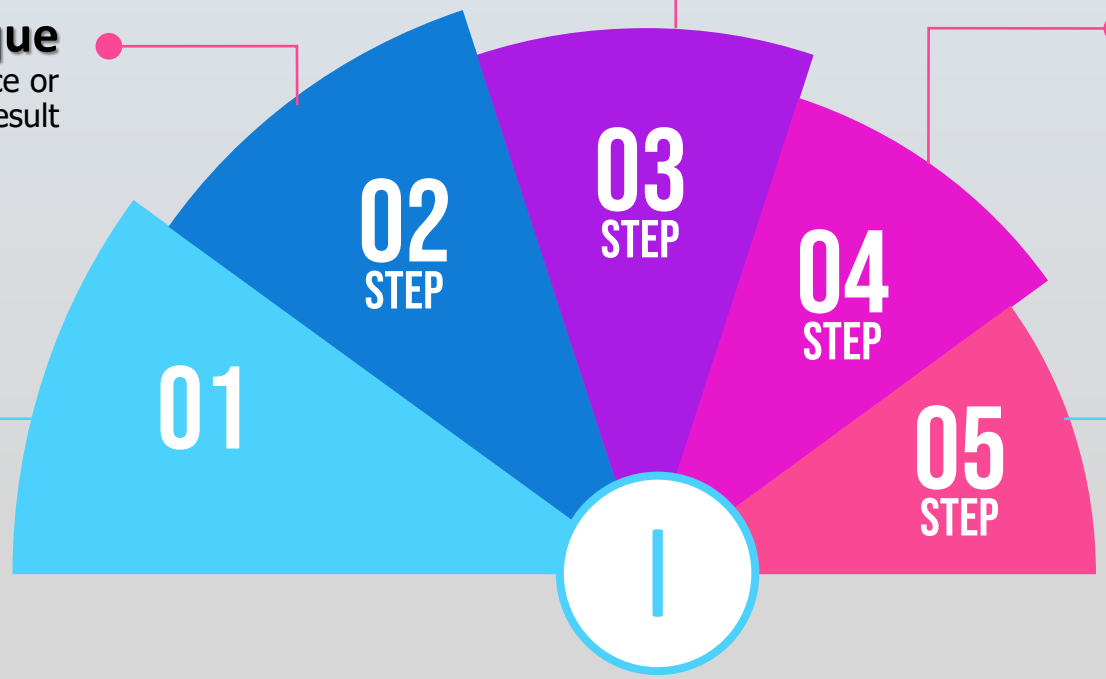
Project Management Institute, Inc. (2017). *A guide to the project management body of knowledge*.

What’s a Project?

Progressive elaboration
Means Development in Steps

Unique
Creates product service or result

Uncertainty
Means that all planned future decisions as built on assumptions.



Temporary
Means that every project has a definite start and definite end.

Drives Change
Moves organization from current state to desired state.

What is a Project Management?

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements.

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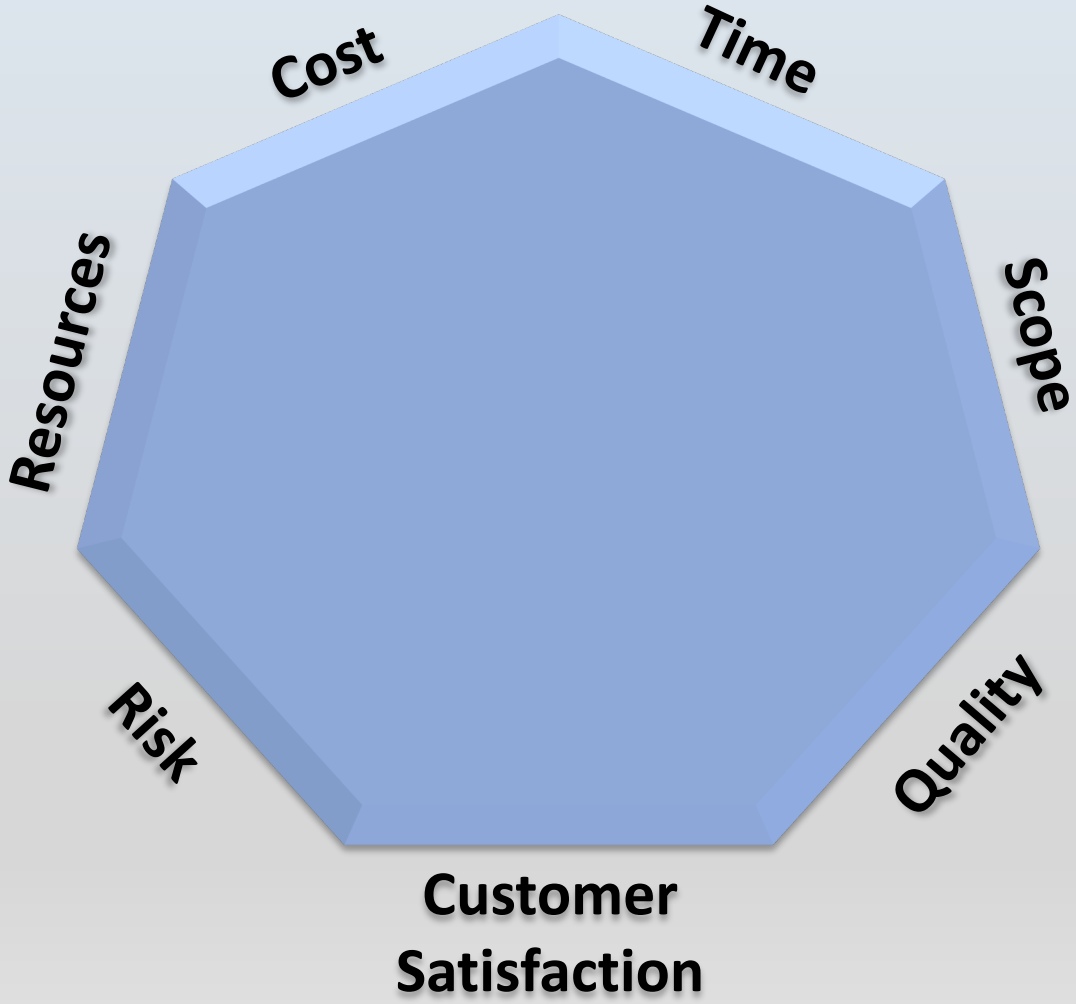
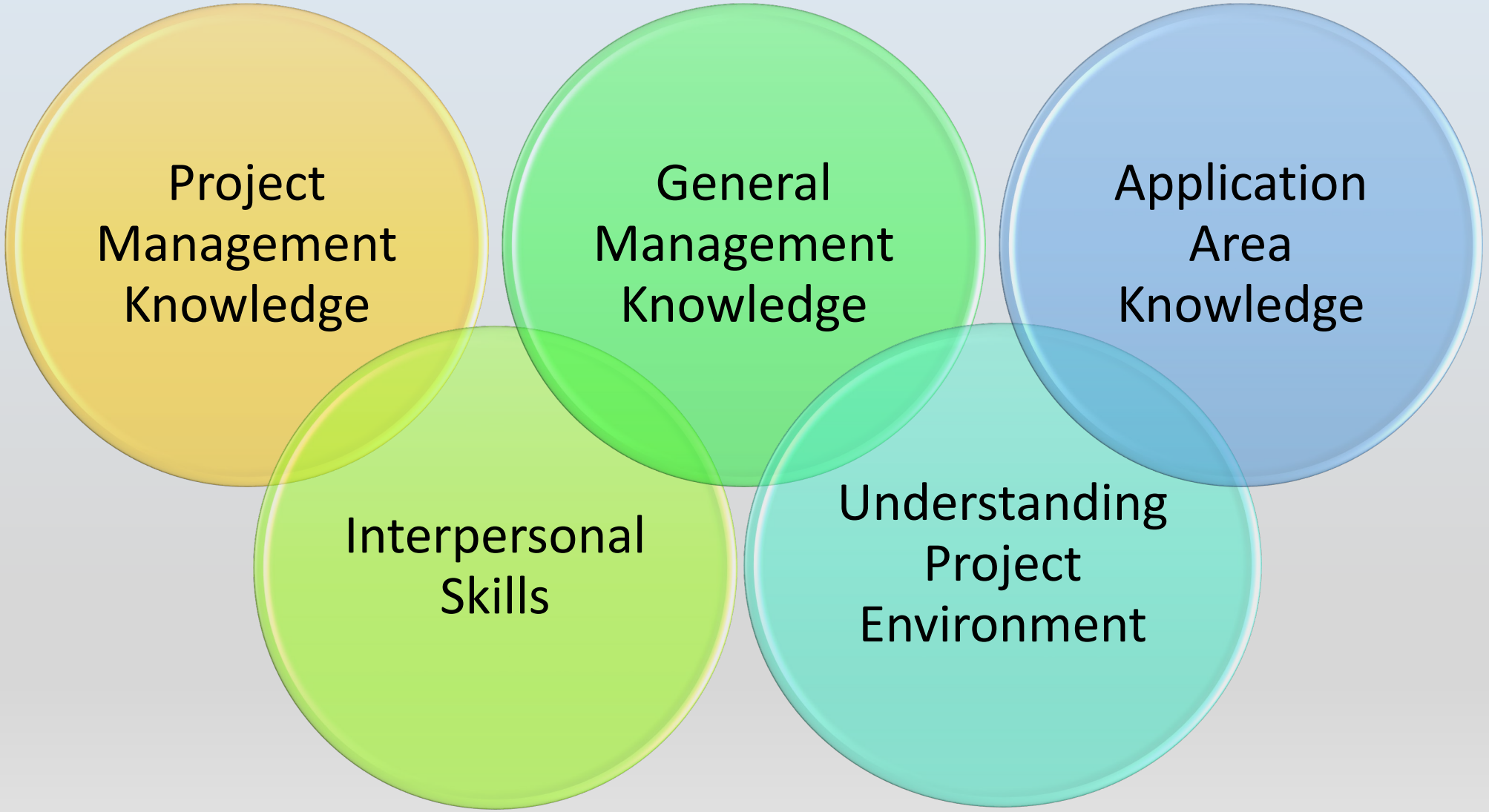
Modern Triple Constraints concept



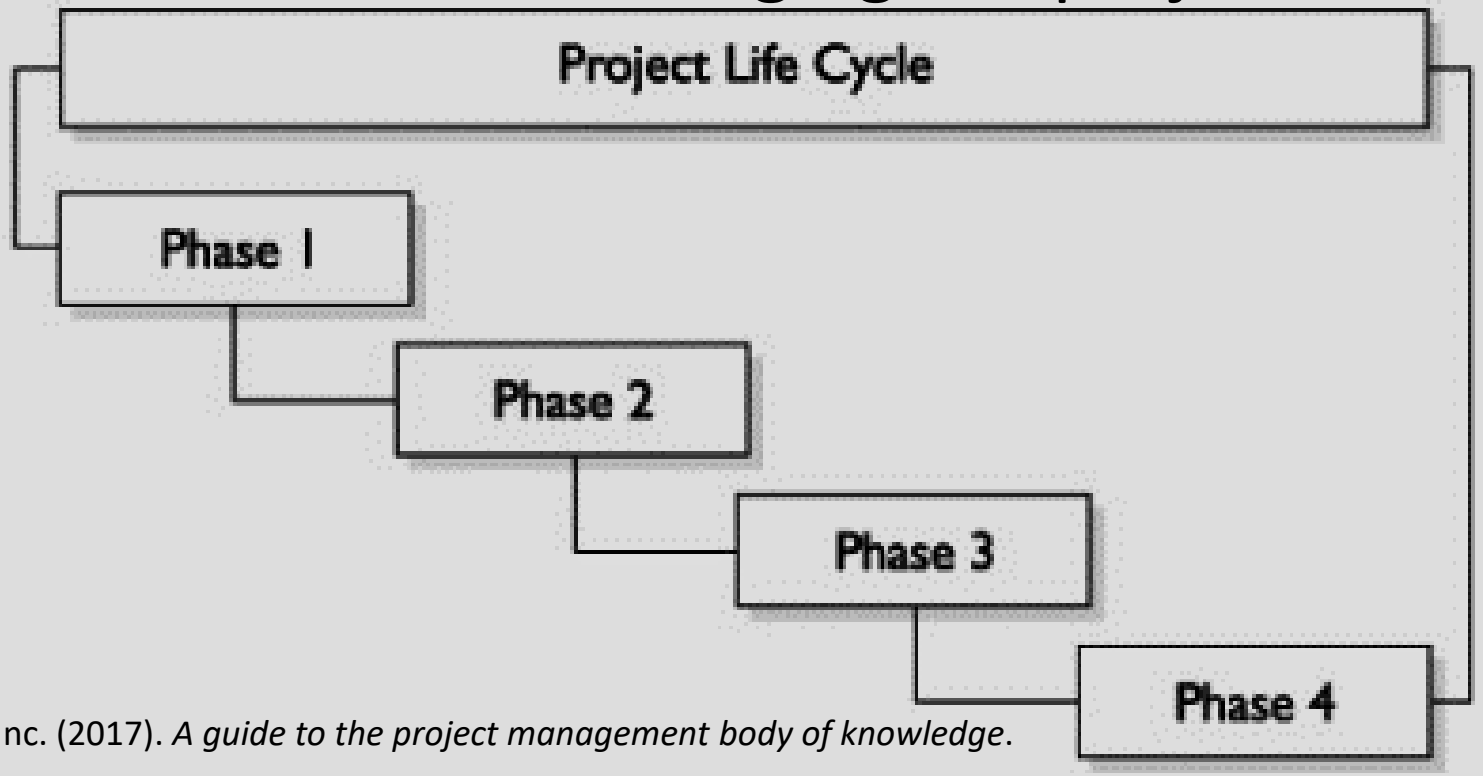
Source: Mulcahy, R. (2020). *Pmp Exam Prep, Tenth Edition*. RMC Publications.

What does project manager need?



Project Life Cycle

- A project life cycle is the series of phases that a project passes through from its start to its completion. It provides the basic framework for managing the project



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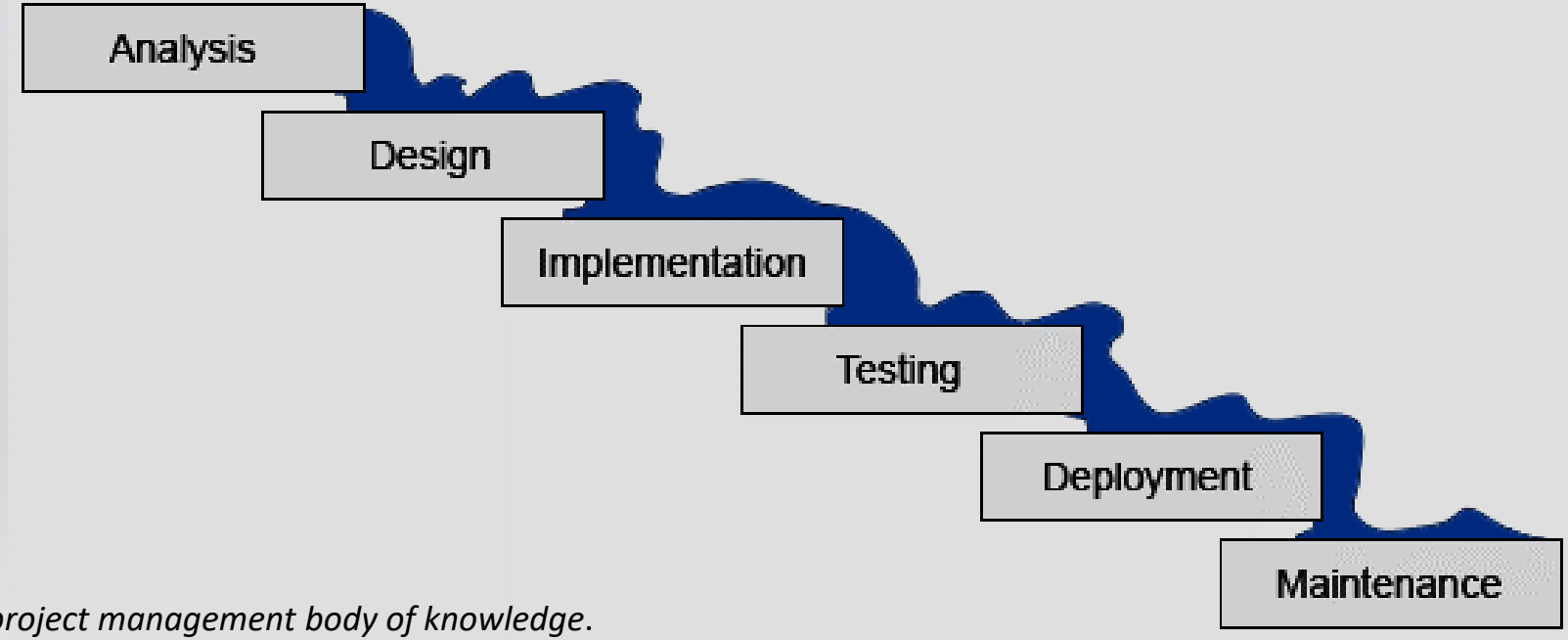
Life Cycle Selection

- Predictive Life Cycle, characterized by upfront planning, where the project scope, time, and cost are determined in the early phases of the life cycle. Any changes to the scope are carefully managed



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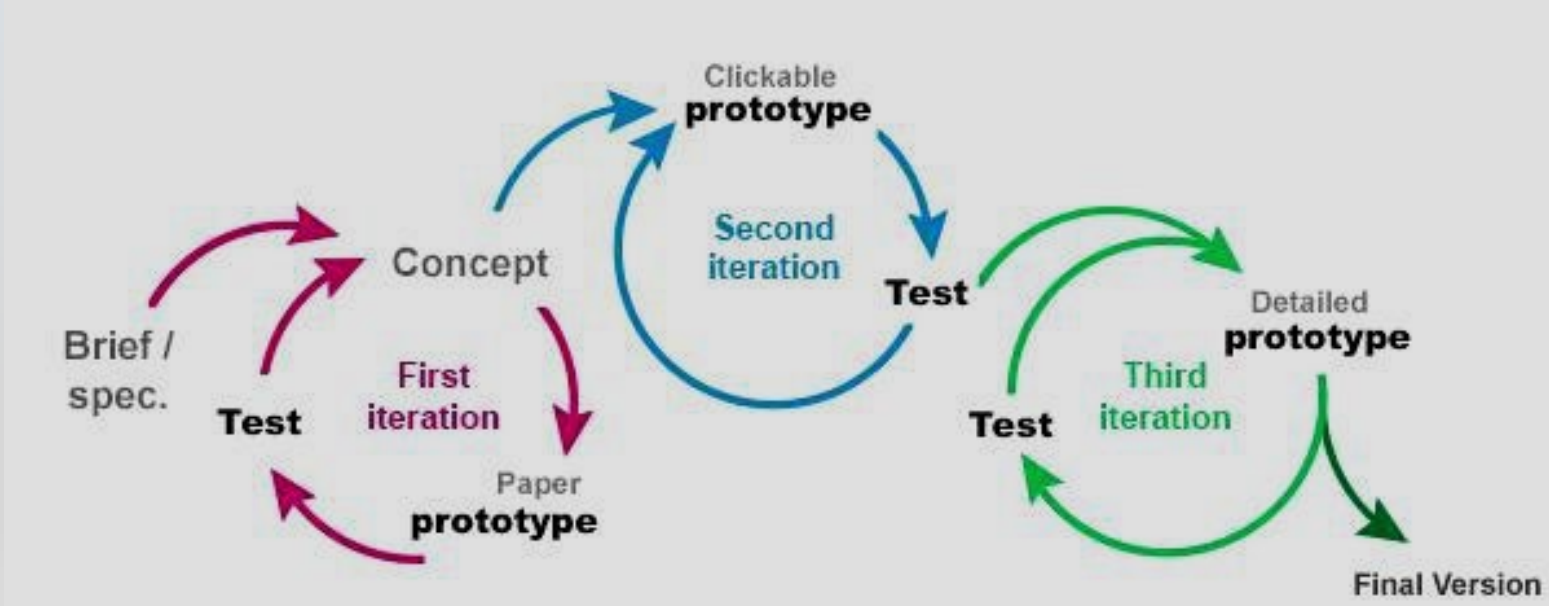
Life Cycle Selection

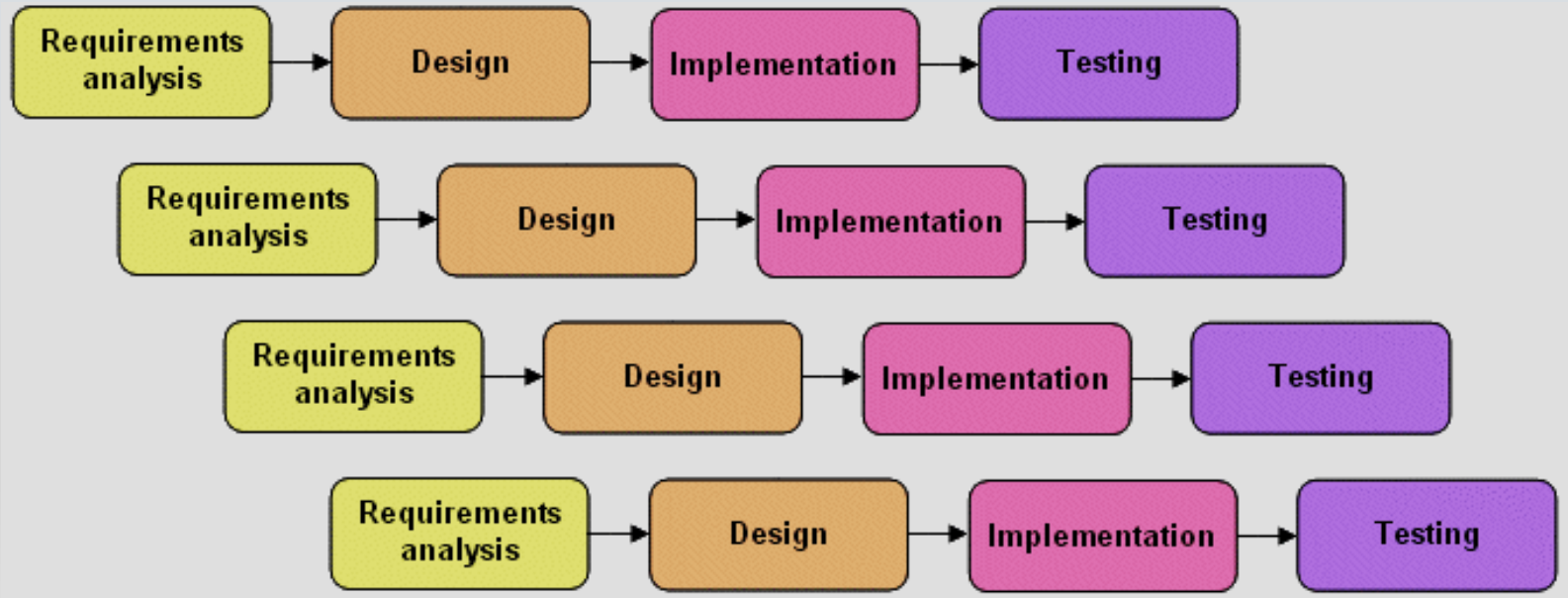
- Iterative Life Cycle An approach that allows feedback for unfinished work to improve and modify that work.



Project Management Institute, Inc. (2017). *Agile practice guide*.

Life Cycle Selection

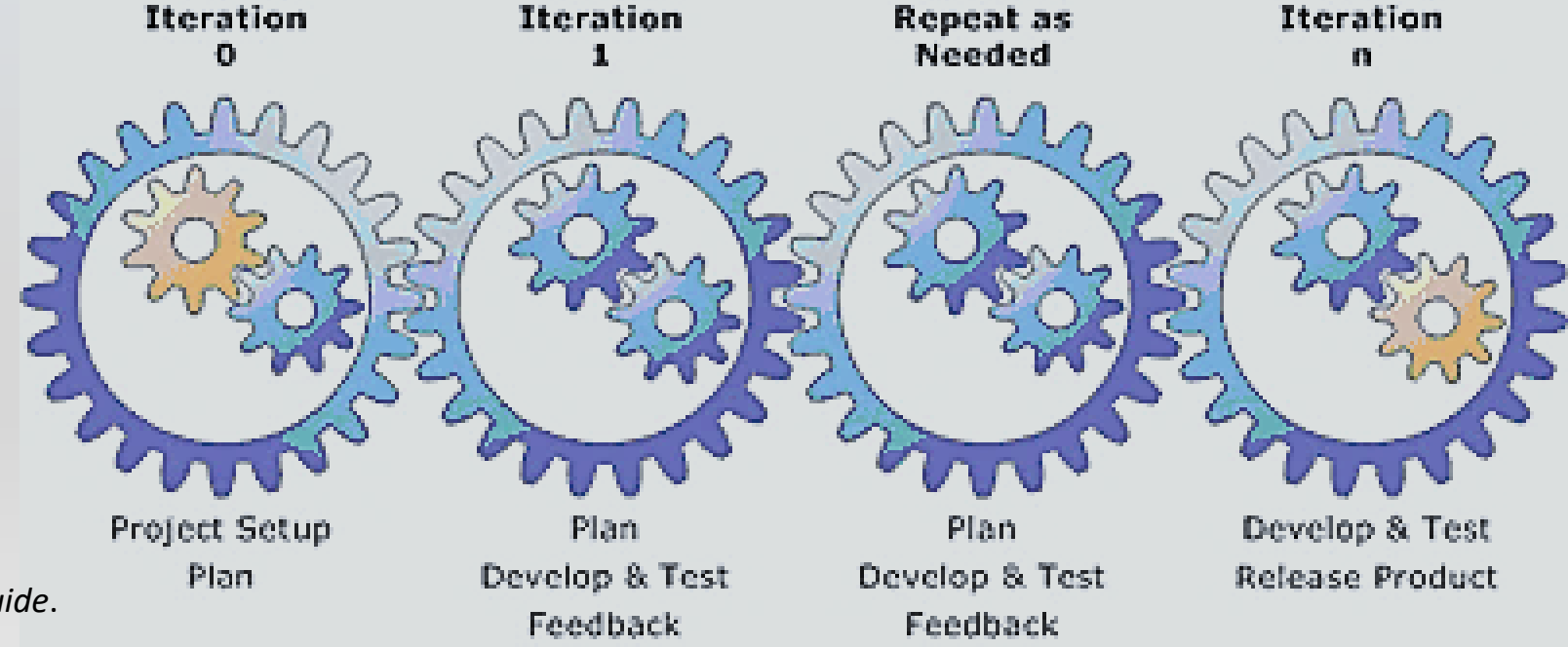
- Incremental Life Cycle, is an approach that provides finished deliverables that the customer may be able to use immediately, while moving on developing other deliverables.



Project Management Institute, Inc. (2017). *Agile practice guide*.

Life Cycle Selection

- **Adaptive (Agile) Life Cycle** combines both Iterative and Incremental approached to refine deliverables and deliver frequently.
- The detailed scope is defined and approved before the start of an iteration.



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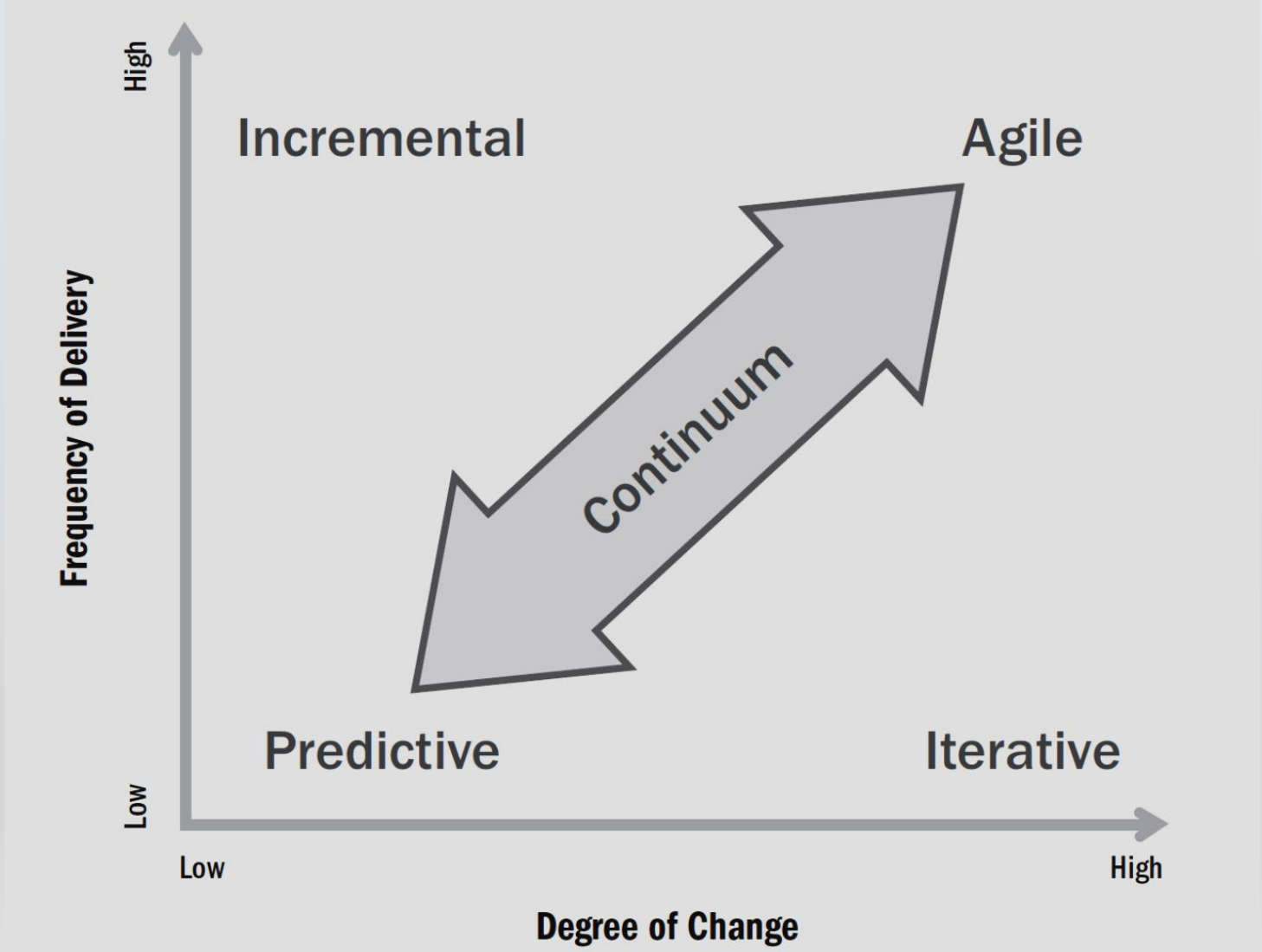
Continuum of Life Cycles



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PROJECT SCOPE PLANNING

Are what stakeholders need from a project or a product.

A good requirement states something that is **Necessary**, **Verifiable**, and **Attainable**.

The Deliverable X must be able to withstand 200 Kilos of pressure.

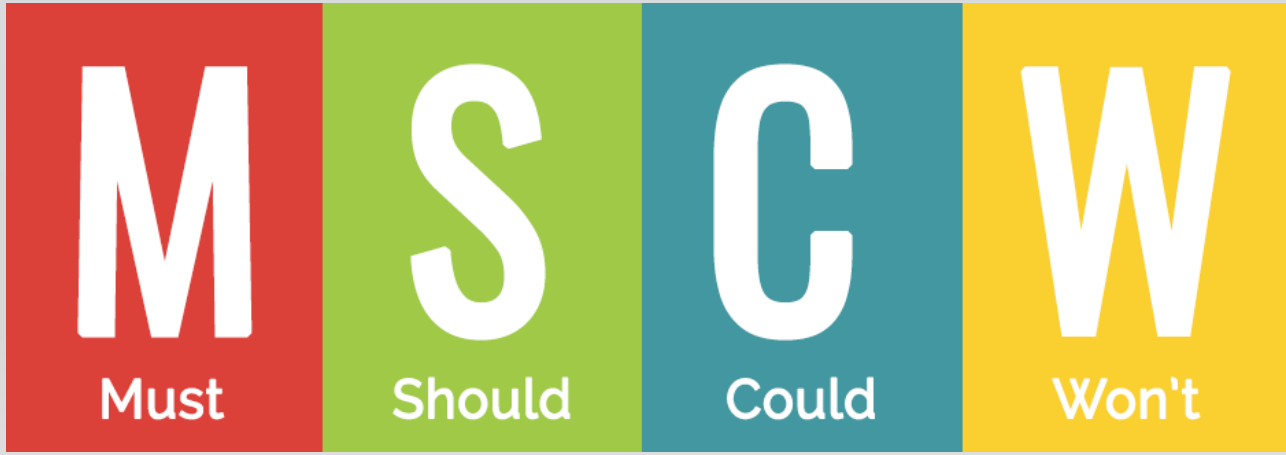
Daily report to show the number for calls received and the duration of each call.

I want a desk with the following dimensions:
H=75 cm, L=120 cm, W=60 cm


PRIORITY
SETTING

MoSCoW Analysis

MoSCoW prioritization, also known as the MoSCoW method or MoSCoW analysis, is a popular prioritization technique for managing requirements. The method is commonly used to help key stakeholders understand the significance of initiatives in a specific release.



What is MoSCoW Prioritization?: Overview of the MoSCoW Method. ProductPlan. https://www.productplan.com/glossary/moscow-prioritization/.

MoSCoW Analysis

M

Must Have

Non-negotiable needs for the project, product

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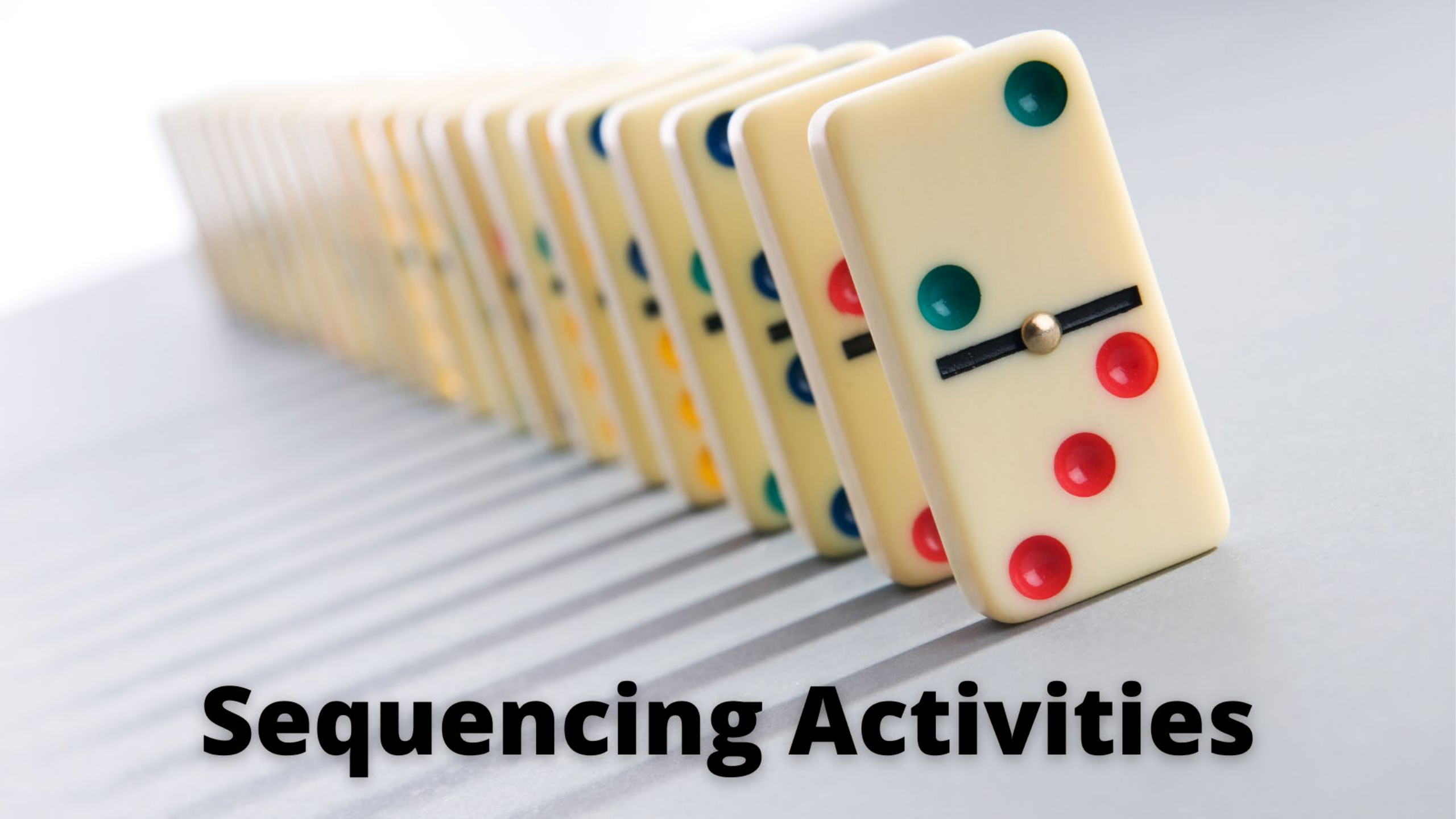
PROJECT SCHEDULE PLANNING


activities



Sequencing Activities

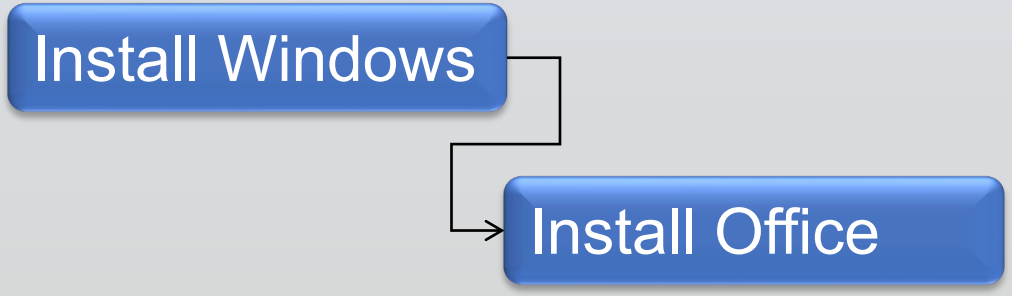
Preceding Diagramming Method (PDM)

- PDM is a method of constructing a project schedule network diagram used by most project management software packages
- It is also called Activity on Node (AON)

Preceding Diagramming Method (PDM) (Continued)

Finish-to-Start

Finish Activity A to Start Activity B



Finish Installing Windows in order to start installing Office

Preceding Diagramming Method (PDM) (Continued)

Start-to-Start

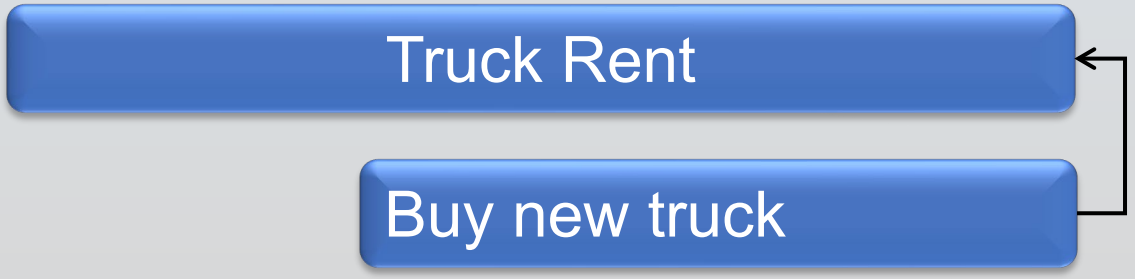
Start Activity A to Start Activity B

Start Staff Hiring(Activity B) when Site Preparation(Activity A) starts

Preceding Diagramming Method (PDM) (Continued)

Finish-to-Finish

Finish Activity A to Finish Activity B

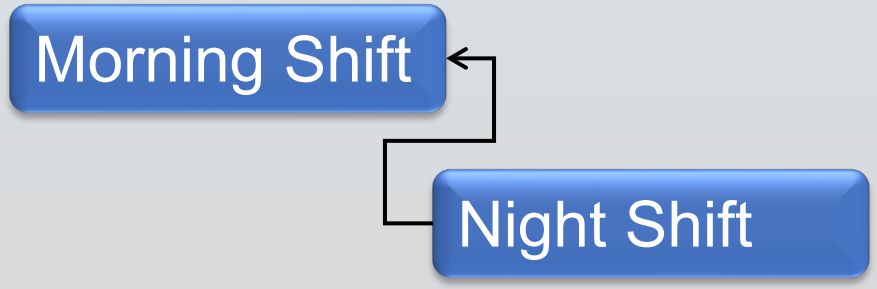


Finish buying the new truck in order to end finish ending rent contract

Preceding Diagramming Method (PDM) (Continued)

Start-to-Finish

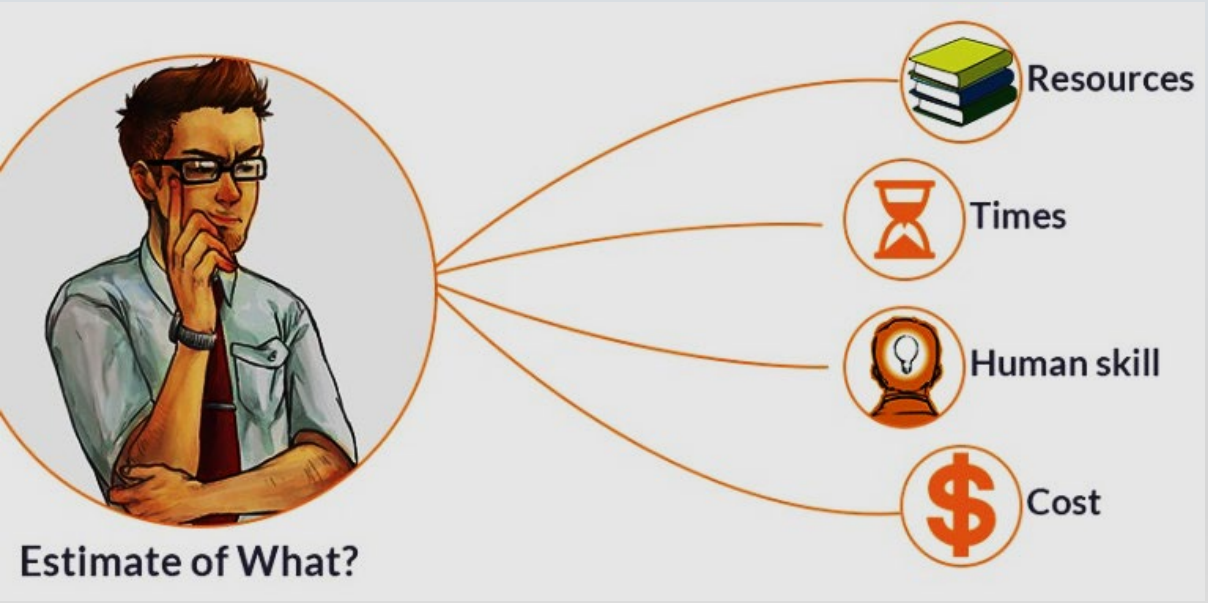
Start Activity B to Finish Activity A



- Start night shift to finish day shift

Estimate Activity Resource

- Estimate activity resources is the process of estimating the type and quantities of material, human resources, equipment, or supplies required to perform each activity



TT-1:Organization Charts and Position Descriptions

- Responsibility Assignment Matrix (RAM)
  - RACI Format
    - R = **Responsible** - Those who do work to achieve the task. There can be multiple resources responsible
    - A = **Accountable** - (Also Approver) The resource ultimately answerable for the correct and thorough completion of the task. There must be exactly one A specified for each task
    - C = **Consulted** - Those whose opinions are sought. Two-way communication
    - I = **Informed** - Those who are kept up-to-date on progress. One-way communication

Organization Charts and Position Descriptions

- Responsibility Assignment Matrix (RAM)
  - RACIS Format

	Mohamed Farouk	Rami Ezzat	Inas Yousry	Walaa Mekkey	Customer
Analysis	R	R	A	C	S
Design	I	A	R	C	S
Test	I	I	A	R	S
Implement	A	I	C	R	S

R = Responsible A = Accountability C= Consult I = Inform S = Sign off

Estimate Activity Durations

- Estimating activity durations process is the process of estimating the number of work periods needed to complete individual activities with estimated resources

Expert judgment

- One time estimate means one estimate per activity is received.
- Disadvantages:
  - Padding (providing worst-case estimates)
  - Hiding information about risks and uncertainties
  - Untruthfulness when activity takes less period
  - Lack of experience produce risky estimates

Analogous Estimate

- A.k.a. Top-down estimating
- Using actual duration of a previous similar schedule activity as the basis for estimating the duration of future schedule activity.
- Used when there is limited information
- Uses both historical data and expert judgment
- Useful when activities are really similar not just in appearance.
- Usually used in early planning phase

Parametric Estimating

- Multiplying the quantity of work to be performed by the productivity rate.
- Example:
  - Cable installation in meters/ labor hours

PDM Example

Activity	Preceding Activity	Time (Weeks)
A	—	4
B	—	6
C	A,B	7
D	B	8
E	B	5
F	C	5
G	D	7
H	D,E	8
I	F,G,H	4

PROJECT COST PLANNING

Estimate Cost

- Estimate costs is the process of developing an approximation of the monetary resources needed to complete each schedule.
- In approximating costs, the estimator considers the possible causes of variation of the cost estimates, including risk.

Estimate Cost (continued)

- Types of estimates

Accuracy of estimates increases as additional details available

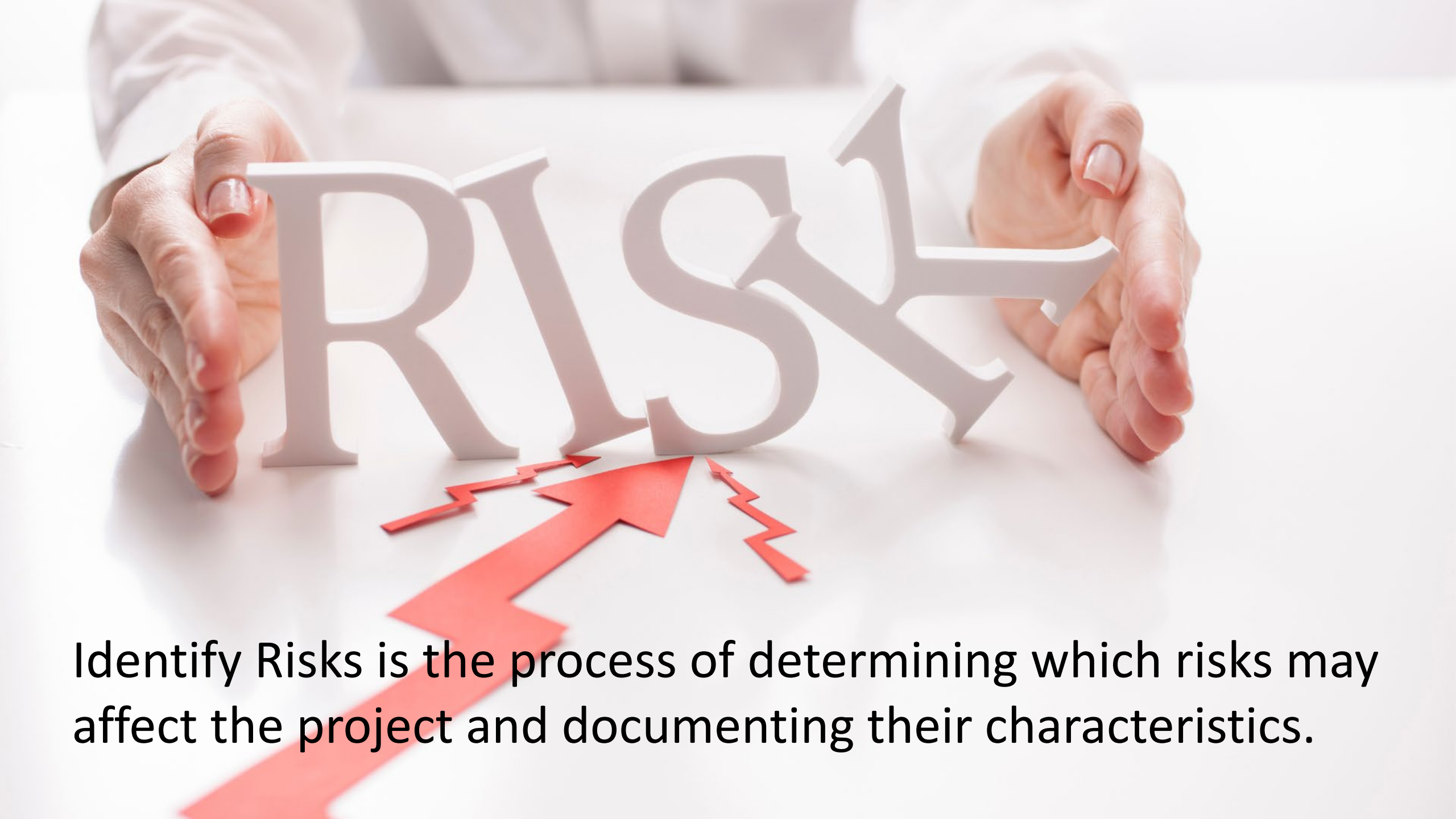
1. Rough Order of Magnitude (ROM)
   Estimate range -25% to +75%

2. Definitive Estimate
   Estimate range -5% to +10%

PROJECT RISK PLANNING

“Risk is an uncertain event that, if occurs, has an effect on at least one project objective”

Risk Elements



Identify Risks is the process of determining which risks may affect the project and documenting their characteristics.

Risk Statement

because {the causes of the risk}
If {your risk}
then {the impacts of the risk} may happen

Probability and Impact Matrix

Probability									
0.90	0.09	0.18	0.27	0.36	0.45	0.54	0.63	0.72	0.81
0.80	0.08	0.16	0.24	0.32	0.40	0.48	0.56	0.64	0.72
0.70	0.07	0.14	0.21	0.28	0.35	0,42	0.49	0.56	0.63
0.60	0.06	0.12	0.18	0.24	0.30	0.36	0.42	0.48	0.54
0.50	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45
0.40	0.04	0.08	0.12	0.16	0.20	0.24	0.28	0.32	0.36
0.30	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27
0.20	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18
0.10	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
Impact	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90


RISK
TRANSFER
REDUCE
ACCEPT
AVOID

Changing the project plan to eliminate the risk or the condition that causes the risk in order to protect the project objectives from its impact.

Transfer Risk

Transfer the risk to a third party who will carry the risk impact and ownership of the response

Risk mitigation aims at reducing the probability and/or impact of a risk to within an acceptable threshold

Active acceptance: may include developing a **contingency plan** to execute should a risk occurs.

Thank You!!!