

An Introduction to Project Management

A Software Engineering Perspective

CENG 323 – Project Management

5 October 2022, @IZTECH

What is a Project?

A project is
a **temporary** endeavor
undertaken to create a **unique product**, **service**,
or **result**.

Example Projects



building a house



developing a medicine



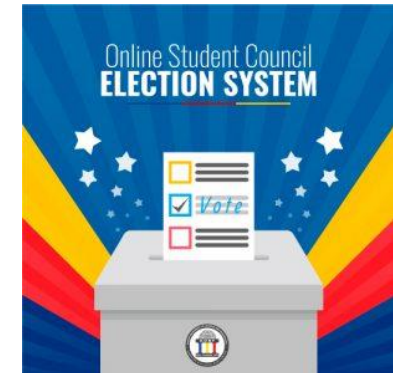
*developing a new
transportation vehicle*



running a campaign



*developing a messenger
application (like
WhatsApp)*



*developing a student
council election system*

Image credits:

House: https://www.freepik.com/free-vector/house-construction-phases-isometric-poster-with-team-workers-working-unfinished-building-vector-illustration_7201660.htm

Medicine: <https://www.drugtargetreview.com/article/58060/laboratory-automation-in-early-drug-discovery/>

Transportation vehicle: <https://www.businessinsider.com/tesla-cybertruck-pickup-trucks-coolest-features-2019-11>

Image credits:

Campaign: <https://anceauxmarketing.nl/build-brand-supporting-campaigns/>

Messenger: <https://www.passionatestar.com/whatsapp-system-design/>

Election system: <https://komar.edu.iq/events/onlinestudentcouncilelectionssystem/>

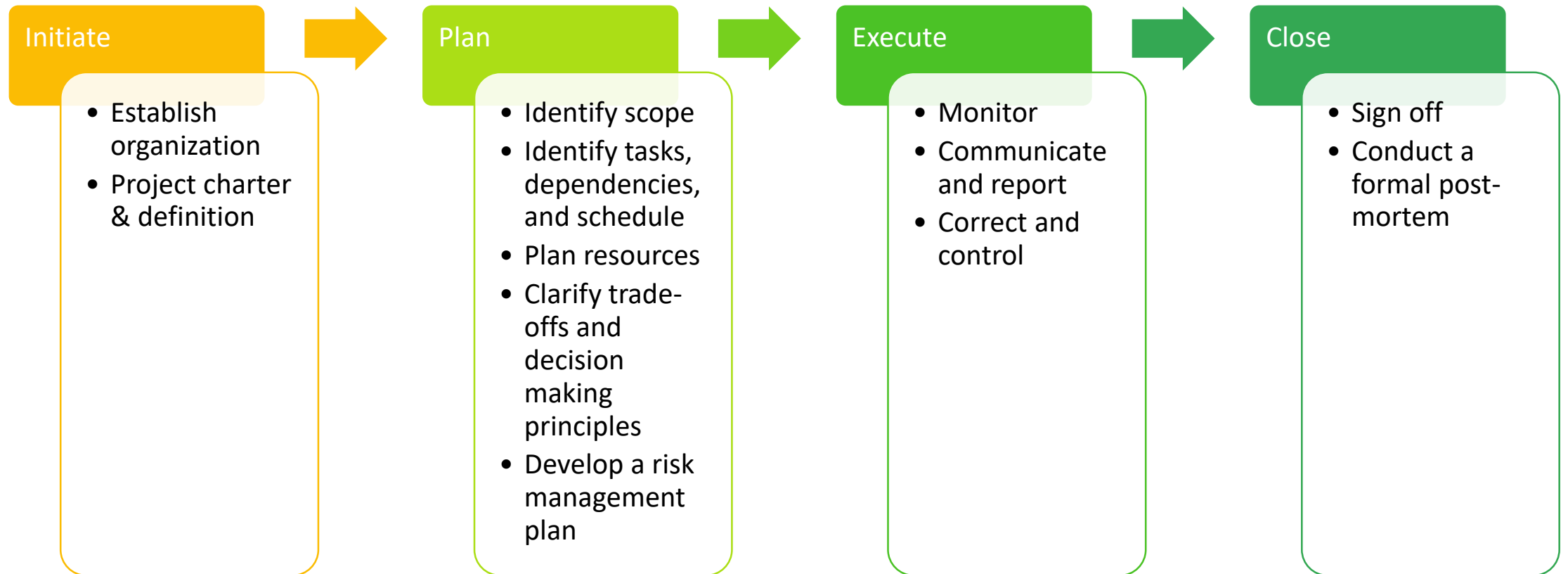
What is Project Management?

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

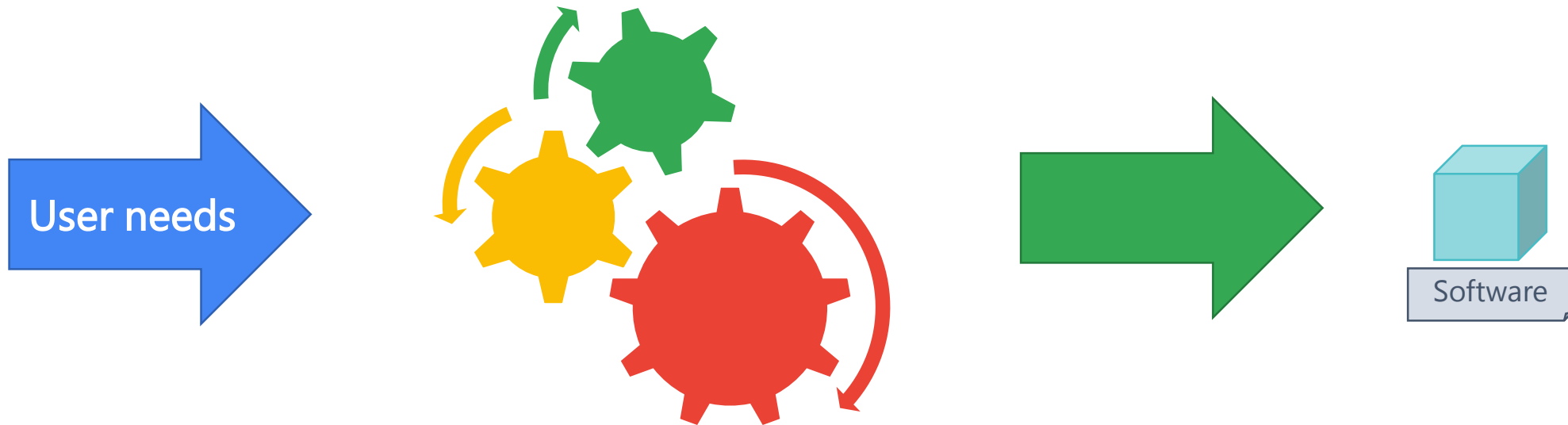
Constraints / Variables in a Project



Project Life-Cycle



Software Development Project



Software development process

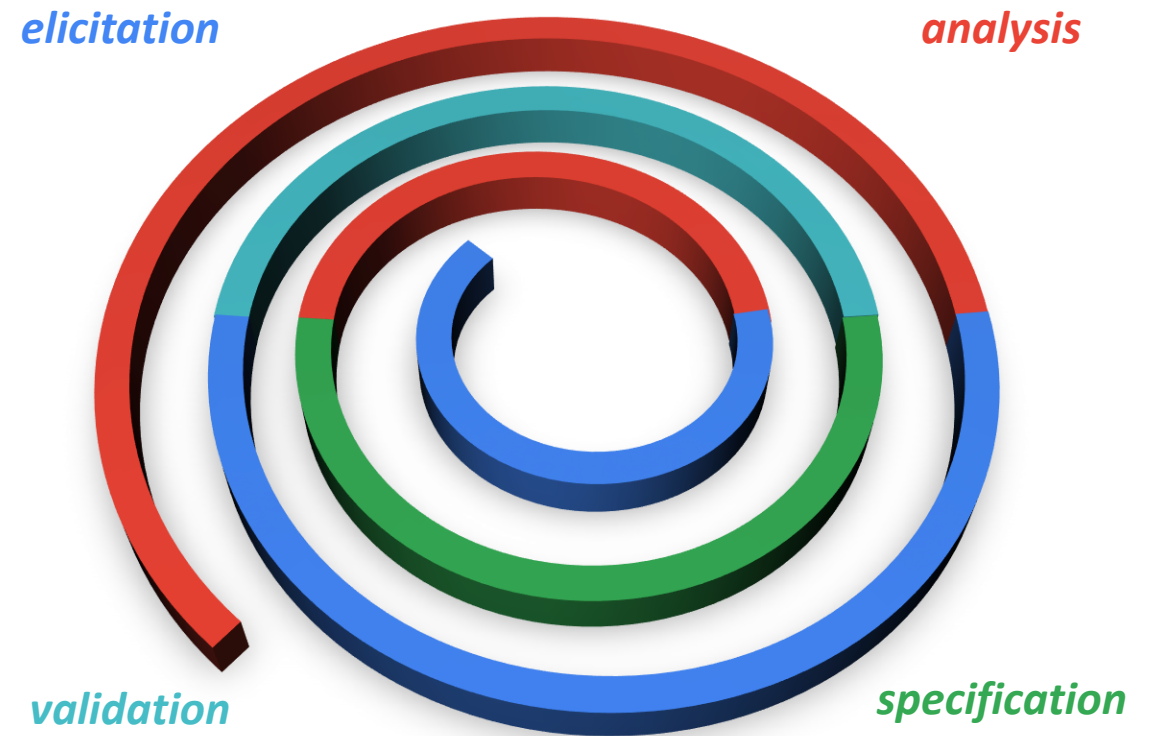
Software Development Process Phases



Requirements Engineering

establish the services that the customer requires from the software system

WHAT SHOULD THE SOFTWARE SYSTEM DO?



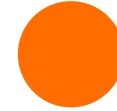
Design

describe the internal structure
and organization of the
software system, which will
provide the services identified
during requirements
engineering

**HOW SHOULD THE
SOFTWARE SYSTEM BE?**



Software Architecture



Component / Object / Function Design



Interface Specification



Algorithm Design



...

Implementation

realize the design and create
the actual software by
following some principles



Image credit: <https://www.information-age.com/software-123466740/>

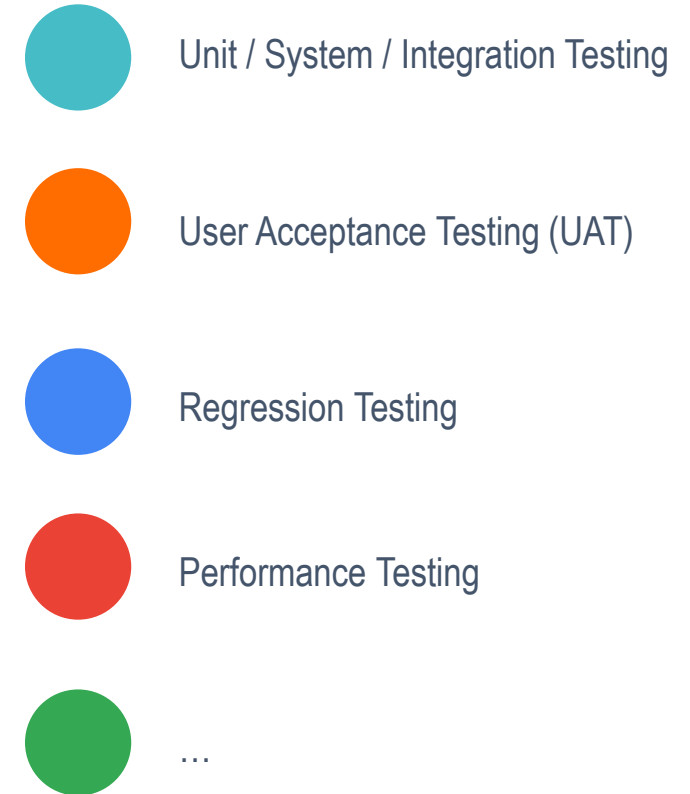
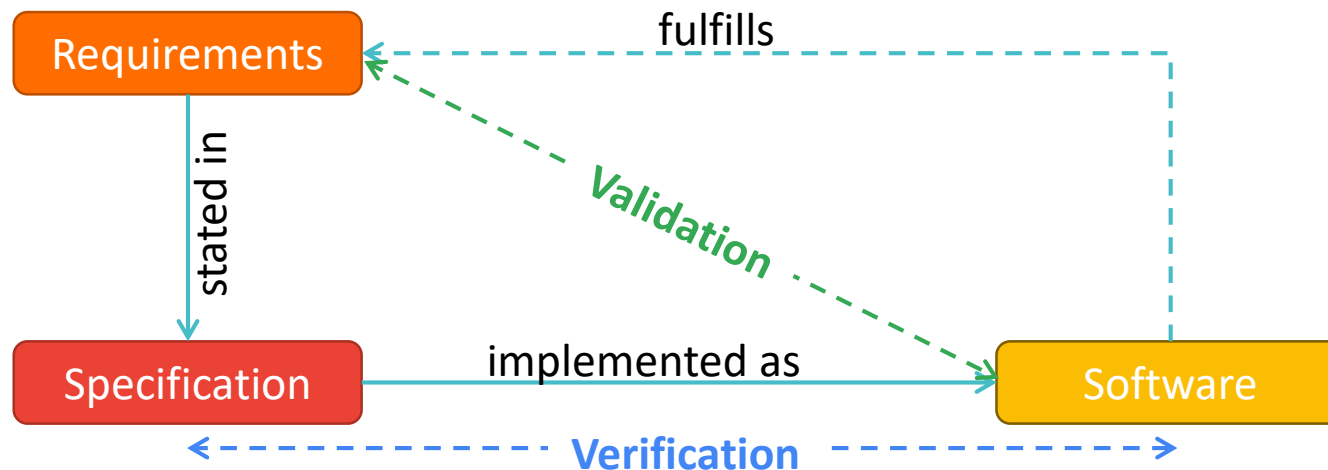
Verification & Validation (Testing)

Verification

Are we building the system right?

Validation

Are we building the right system?



Maintenance

The activity that sustains the software system as it evolves throughout its life cycle in response to bugs, new requirements, and environment changes



Corrective maintenance

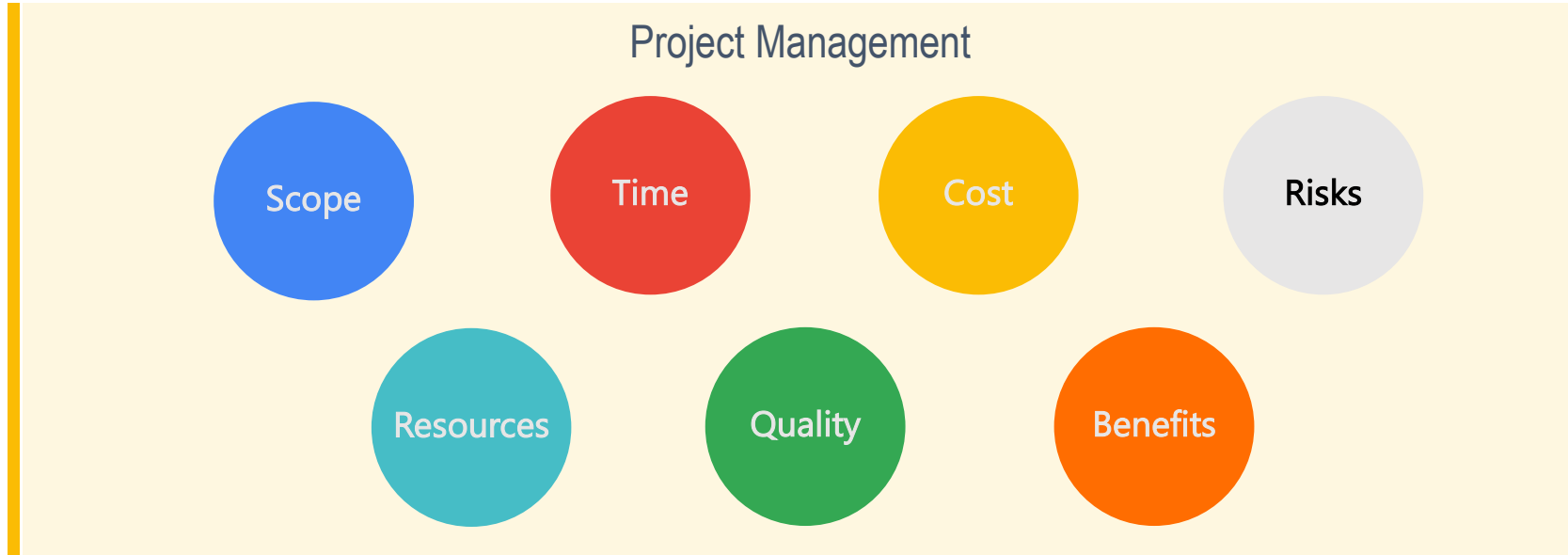
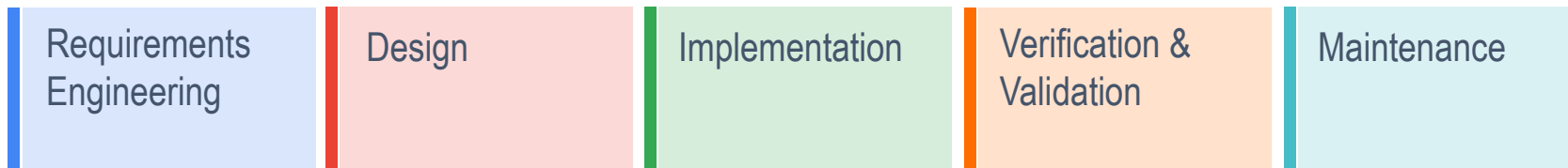


Perfective maintenance



Adaptive maintenance

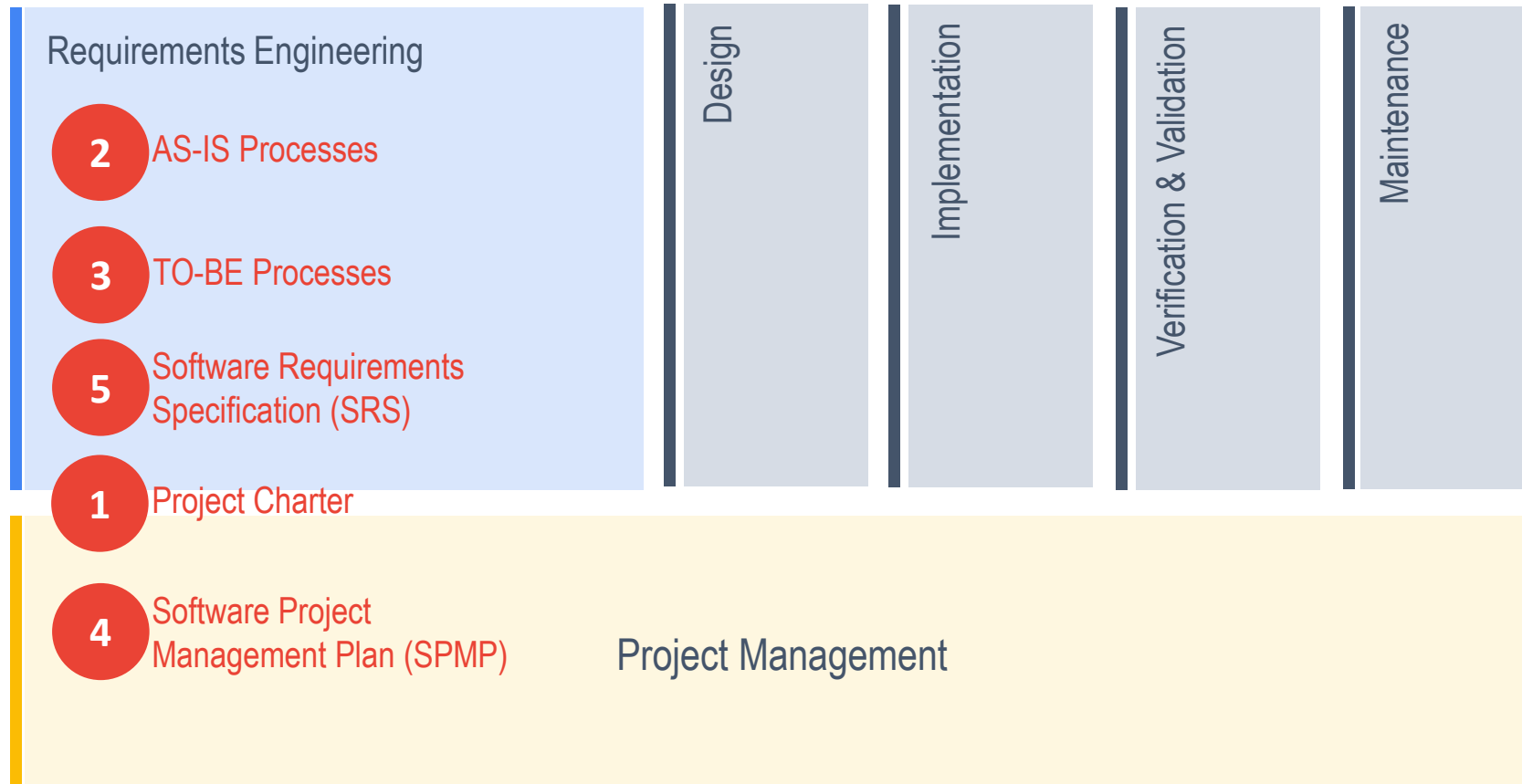
Project Management for Software Development



Scope & Deliverables for CENG 323

CENG 323 – Project Management

CENG 316 – Software Engineering



What is expected from you?

What should you do next?

- understand problem domain
- understand processes
- understand problems
- understand user expectations
- ...

How should you do these?

- read existing documents
- interview stakeholders
- search on the Internet
- ...

First output: Project Charter

Project Charter

The project charter is the document issued by the project initiator or sponsor that formally authorizes the existence of a project and provides the project manager with the authority to apply organizational resources to project activities.

The purpose of the charter is to obtain formal approval on the general parameters and structure of the proposed project, including the following:

- the project objectives and outcomes, benefits, scope, and risks;
- the project deliverables, schedule, milestones, and estimated costs; and
- the project organization, governance structure, and stakeholders.

PROJECT CHARTER					
Project Title	Project and Portfolio Management Tool			Project Manager	Sameer Patel
Project Start Date	May 21, 2017	Project End Date	August 31, 2017	Project Sponsor	Randy Hadden
Business Need					
All Information Technology projects that require agreement on the Memorandum of Understanding between the Customer and the Service Provider are approved through email. This project was initiated to reduce the manual approvals and create a system to obtain and track the approvals to reduce any discrepancies and loss of data.					
Project Scope			Deliverables		
Create an in-house PPM to include all Global IT projects.			1. Generate consolidated project status report 2. Extract Global Headcount details for all projects		
Risks and Issues			Assumptions/Dependencies		
1. Data discrepancy due to large amount of projects 2. Involvement of multiple teams			1. All Global IT projects to be added to the tool 2. Managers to provide regular updates for the projects		
Financials					
Budget to complete this project is \$3000					
Milestones Schedule					
Milestone		Target Completion Date		Actual Date	
Upload all Global IT Projects to the tool		May 20, 2017			
Complete UAT testing for the tool		July 30, 2017			
Project Team			Approval/Review Committee		
Project Manager	Randy Hadden		Sponsor	Randy Hadden	
Project Manager	Sameer Patel		Business Division Head	Aniket Bhonsle	
Team Members	Vice President, Senior Manager, Analyst		Business Unit Head	Sunil Rajan	
			Finance Manager	Ketan Shah	

Image credit: <https://tr.pinterest.com/pin/450289662737323123/>

A Project Charter Template

- 1 Project Goals
- 2 Deliverables
- 3 Scope Definition
- 4 Project Milestones
- 5 Assumptions, Constraints, & Dependencies
- 6 Project Organizational Structure

A Project Charter Template - Examples

1

Project Goals

- develop a new mobile application to give our customers the opportunity of giving orders via their mobile devices
- build a new warehouse in İzmir region to better serve our customers on the west coast

2

Deliverables

- develop a mobile application for order placement
- produce user training flyers for customers
- design and establish a user support service (users can reach this service when they face a problem while placing an order)

3

Scope Definition

- establish a motorcycle courier network can be out of scope

4

Project Milestones

- have user interface mockups ready after one month you start executing the project

5

Assumptions, Constraints, & Dependencies

Assumptions:

- your project team will not change during the project
- there will not be a new legislation announced by the government that will affect your project

Constraints:

- finish the project until a legal deadline (you will face with a serious penalty unless you achieve this)

Dependencies:

- some components may be developed by another software development company
- have an integration with another software system

6

Project Organizational Structure

- Who is the project manager?
- Who is the business analyst?
- Who is responsible for the budget?
- ...



References

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