

# Tutorial 1

**COMP 354- Fall 23**

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# Course Outline

**In this course, we have three assignments and one course project.**

**Three Assignments:** Write reports for these three assignments and implement them in your final project.

- 1. Assignment 1** – Software Requirements Specifications (SRS)
- 2. Assignment 2** – Software Design
- 3. Assignment 3** – Quality Control

**Course Project:** In a Team (6 members) Submit a Project Report and Develop the project which will be evaluated with a 15-20 mins Project Demo.

# Course Assignment and Project

- Extending the Open-Source Shopping Cart App into the “*Concordia Cart App*”
- You are going to extend the open-source Shopping Cart app available at <https://github.com/shashirajraja/shopping-cart> into a more personalized app named “*Concordia Cart*”
- *Please Refer to Assignment 1 to carefully read the extended requirements for the Concordia Cart App*

# Course Outline

- It is very important to complete Assignments on time.
- Do not delay your assignments for the last moment.
- Develop it step-by-step everyday.
- Ask questions!
- Connect with your respective TA as they will act as one of the stakeholders for your Assignments and Projects.
- Each team must submit one Assignment and Project Report per Team

**Note:** It is very important for the entire team to attend the same tutorials and labs sections as tagged on the “*Assignment and Group Portal*”

# **Assignment 1: Software Requirements Specification**

# Essence of Software Engineering Practice

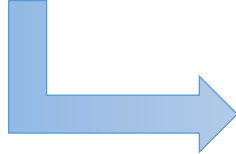
1. Understand the Problem – Analyze and Communicate
2. Plan a Solution – Modelling and Software Design
3. Carry out the Plan – Develop and Generate Programs/Code
4. Examine Results for Accuracy – Test, Deploy and Quality Assurance

# Software Engineering Process

Requirement Gathering



Designing



Implementing



Testing



Deployment and  
Maintenance

# Software Engineering Process

Requirement Gathering

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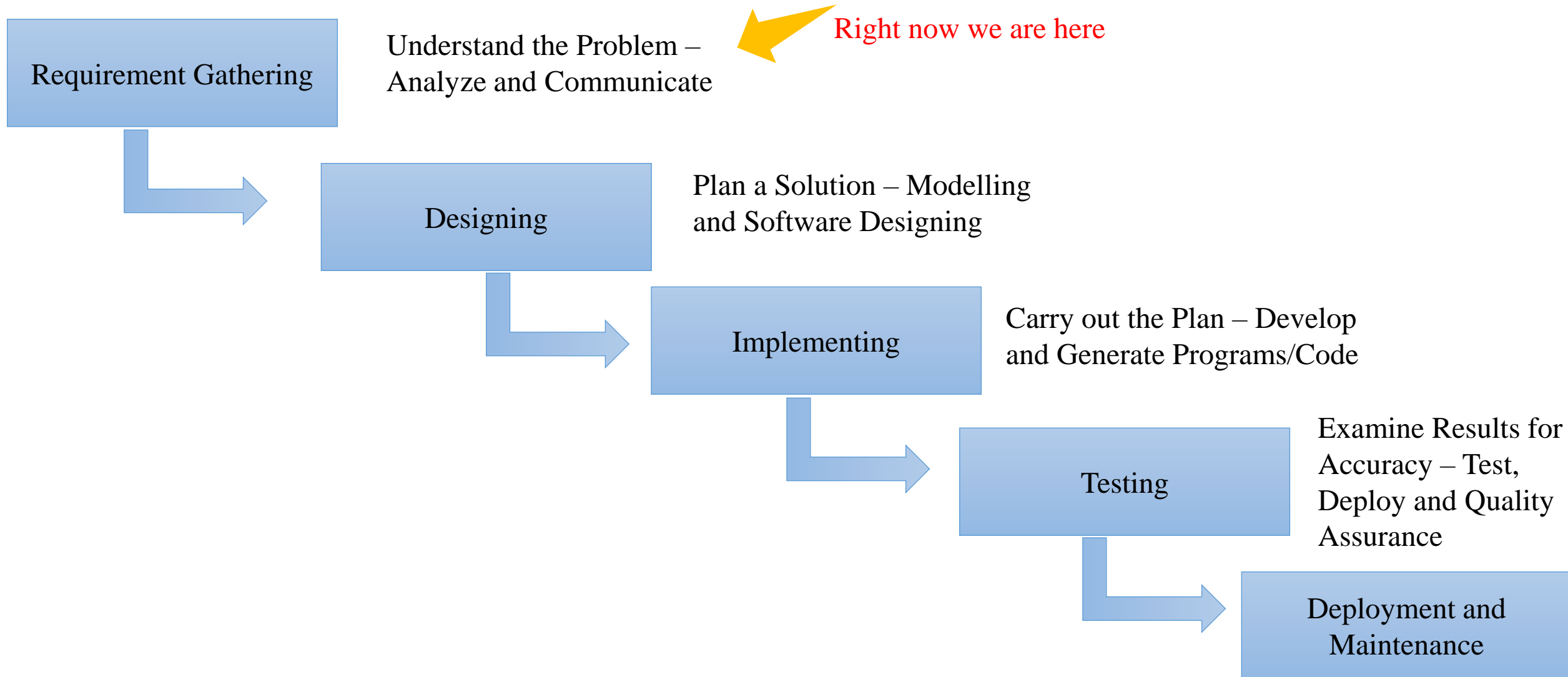
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# Software Engineering Process



# 1. Requirement Gathering - Understand the Problem

## 1. Domain Understanding

- What is the Problem ? Why this Problem ?
- What is the solution to the problem ?
- Who are the people who wants the solution to this problem ?, etc.

## 2. Requirements Elicitation

- Interviews, Questionnaires, Surveys, Card Sorts, User-Stories, etc.

## 3. Requirements Elaboration and Refine

- Here, the elicited requirements from the previous steps is refined based on software functionality, behavior and information.

# 1. Requirement Gathering - Understand the Problem

## 4. Negotiate the Refined Requirements

- Agree on deliverables scope which are realistic between the customer and the developer.

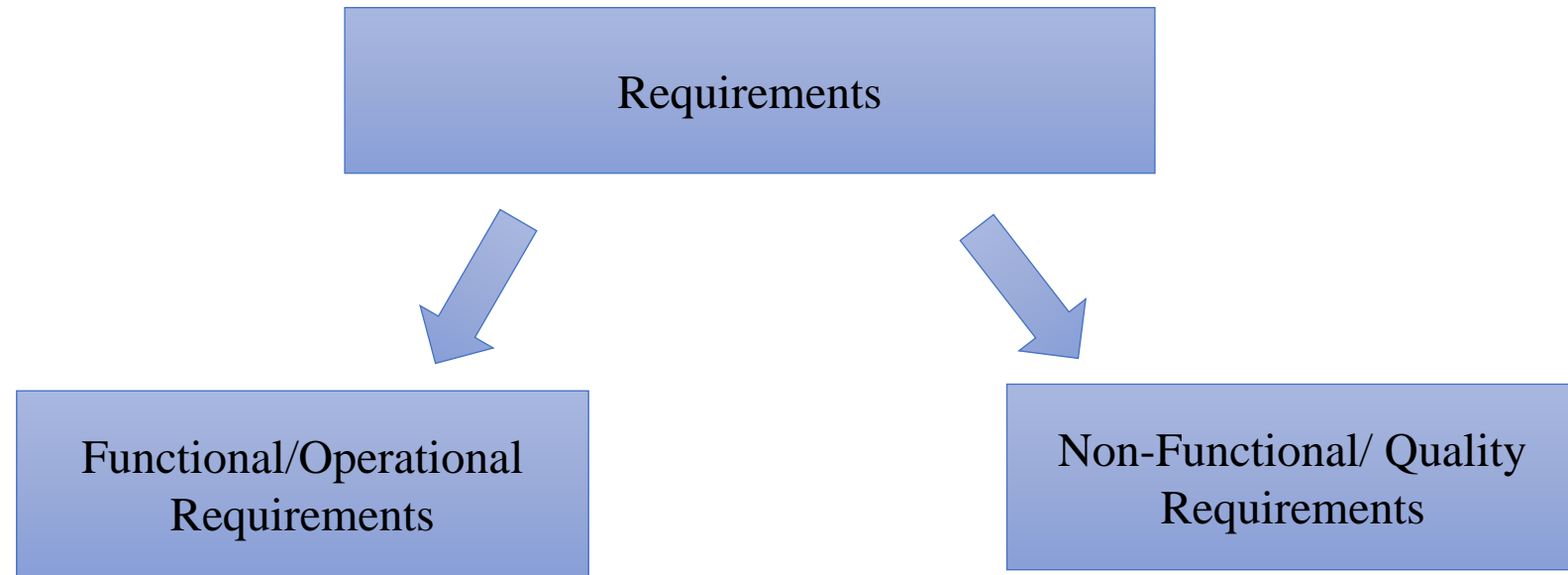
## 5. Specification

- Agreed Requirements and Deliverables Scope and deadline must be specified and documented in the form of graphical models, mathematical models(Z-language), usage scenarios and prototypes.

## 6. Quality Assurance

- Check whether the products or service meets the specified requirements and solves the problem with a solution accepted by the customer.

# Functional and Non-Functional Requirements



e.g. Features of the Software

e.g. Performance, Security,  
Interface, Development, etc.

# Example: Electronic Tool Rental System

- Objective –

Design an Electronic Tool Rental System for the customers who wants to rent tools and equipment such as drills & drivers, saws, lifts and jacks, etc. for a minimal duration of time rather than purchasing them. The system is available nationwide with multiple branches. Users of the system are Branch Employees who manages the branch. An Admin who manages all the branches and customer who rents tools online.

# Requirement Gathering for ETR System.

- What is the Problem ?
- Who are the user of the system ?
- Is the system we have to develop ? Is it a website or an apk ?
- What is a successful solution ?
- Who are the stakeholders of this system ? Primary and Secondary Stakeholders ?
- Functional Requirements
- Non-functional Requirements

# Resources

[CSPS Vision \(uhcl.edu\)](#) – A requirement specification document called Vision Document for Reference.

[https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document#:~:text=A%20software%20requirements%20specification%20\(SRS\)%20is%20a%20document%20that%20describes,\(business%2C%20users\)%20needs](https://www.perforce.com/blog/alm/how-write-software-requirements-specification-srs-document#:~:text=A%20software%20requirements%20specification%20(SRS)%20is%20a%20document%20that%20describes,(business%2C%20users)%20needs)

<https://praxent.com/blog/software-requirements-gathering-formula-success>