

# Software Engineering

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## Software Design



# Software Design

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- Deriving a solution which satisfies software requirements.
- Software design is more creative than analysis.

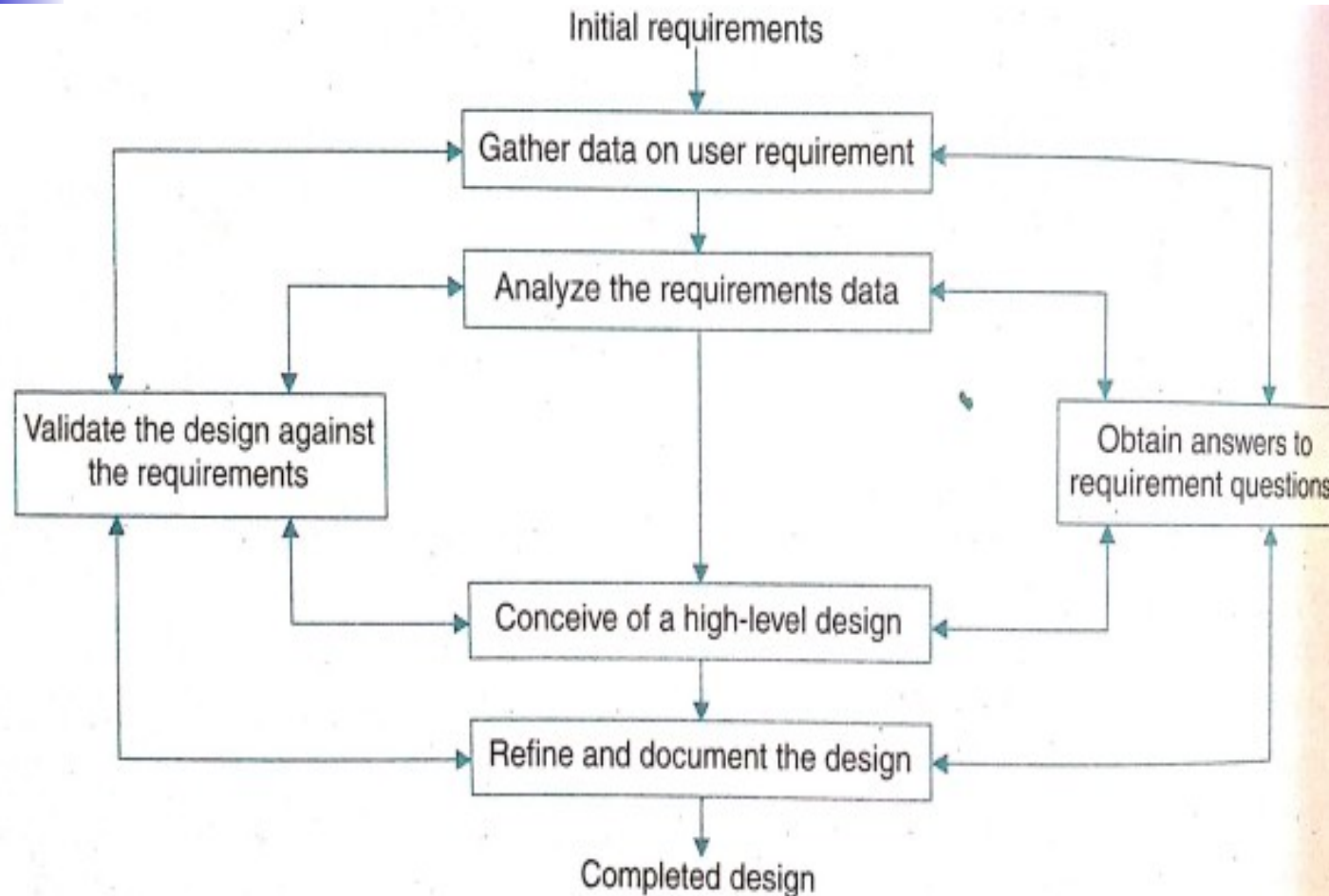


# Stages of Design

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- **Problem understanding**
  - Look at the problem from different angles to discover the design requirements.
- **Identify one or more solutions**
  - Evaluate possible solutions and choose the most appropriate depending on the designer's experience and available resources.
- **Describe solution abstractions**
  - Use graphical, formal or other descriptive notations to describe the components of the design.
- **Repeat process for each identified abstraction**  
until the design is expressed in primitive terms.

# Software Design Architecture

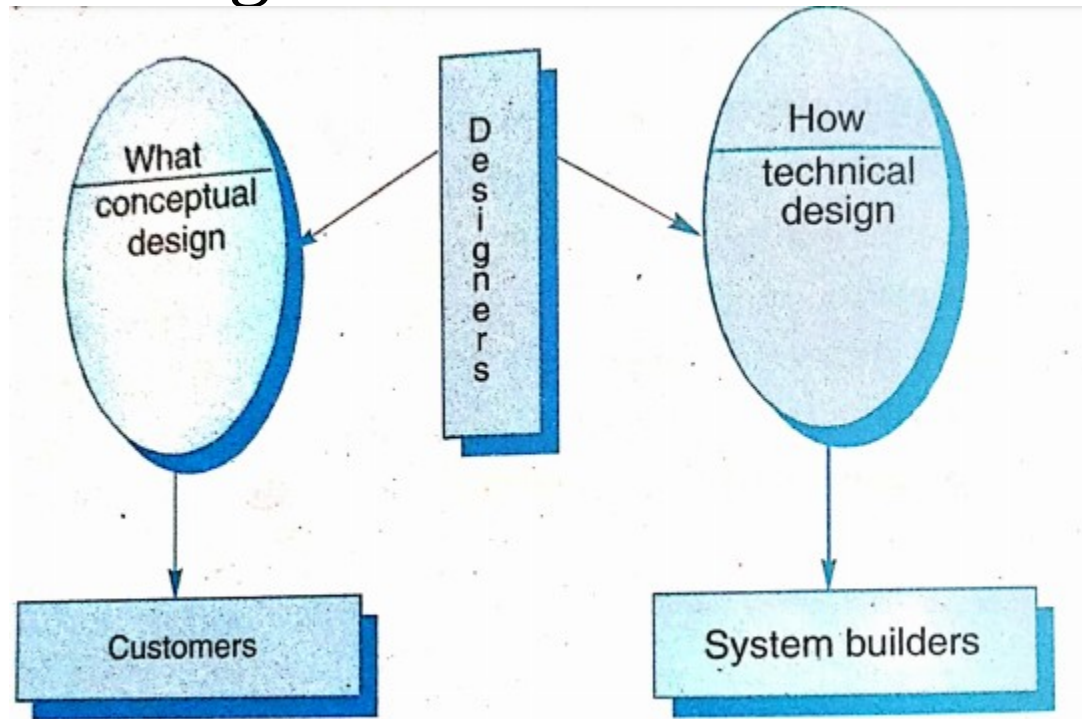


# Types of Software Design

- There are two types of design.

- Conceptual Design
- Technical Design

- **Conceptual design** gives ans to customer query.
- **Technical design** gives project Input, Output design, system design , network architecture.etc.



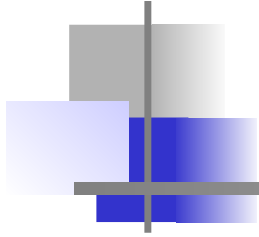
- **Design must satisfy Customer and system design**



# Design Process

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- **The design needs to be correct and complete.**
- **It should be understandable.**
- **Design should be at right level.**
- **It should be maintainable.**



# Why design is important

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There are three characteristics of good design:

- The design must implement all information contained in analysis model.
- The design must be readable, understandable, for coding and testing the software.
- The design should provide the complete picture of software, addressing data, functional and behavior domain.



# Modularity

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A modular system consists of well defined manageable unit with well defined interfaces among the units. The desirable properties of modular system include:

- ✓ Each module is well defined subsystem.
- ✓ Each module has a single well defined purpose.
- ✓ Modules can be seperately compiled and stored in library.
- ✓ Modules can use other modules.
- ✓ Modules should be easier to use.





# Module Coupling

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