

# IoT Design Methodology Steps



Design methodology is independent of specific product, service or programming language.



It has reduced design, testing and maintenance time, better interoperability and reduced complexity.

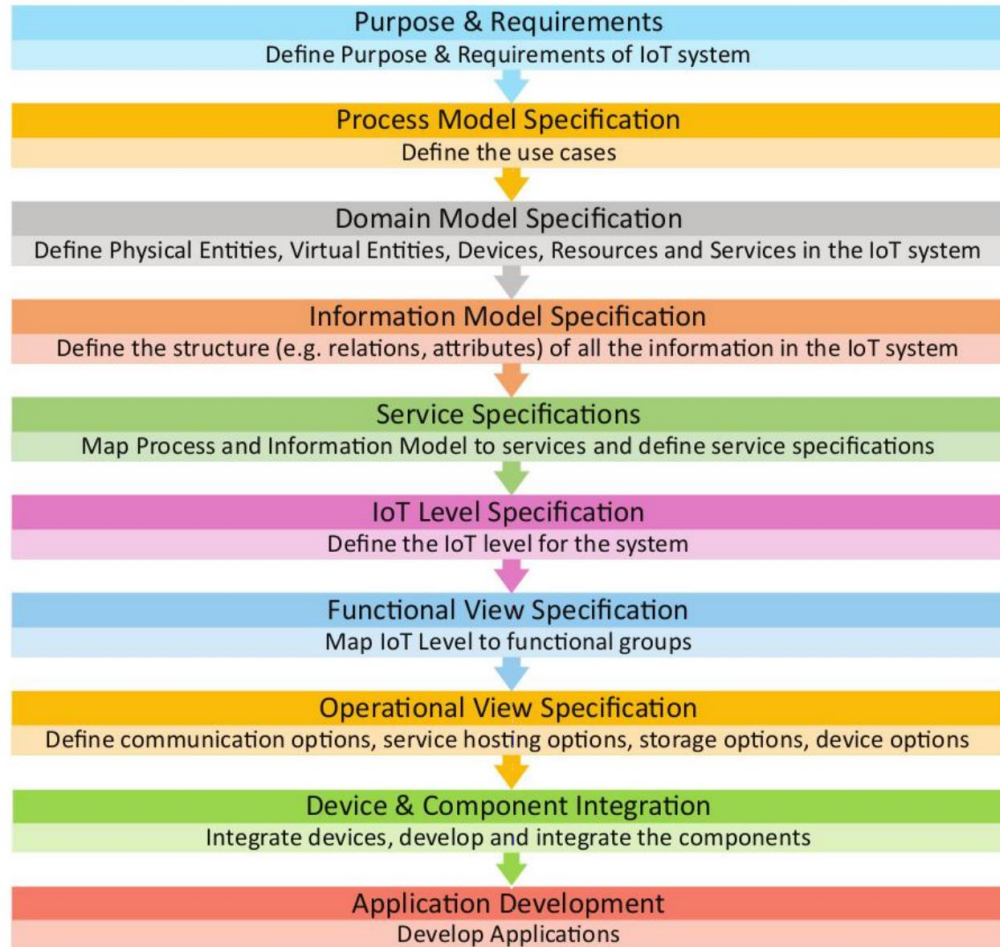


IOT system designers can compare various alternatives for the IOT system components.



Methodology is based on IOT-A reference model.

# IOT Design Methodology Steps



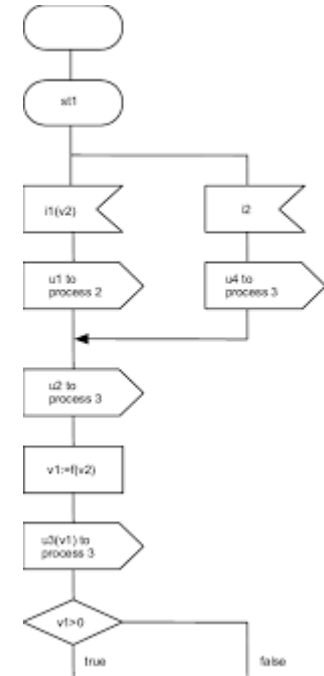
# Step 1: Purpose & Requirements Specification

- Define the purpose and requirements of the system.
- The system purpose, behaviour and following requirements are captured.
  - *data collection requirements,*
  - *data analysis requirements,*
  - *system management requirements,*
  - *data privacy,*
  - *security requirements,*
  - *user interface requirements*



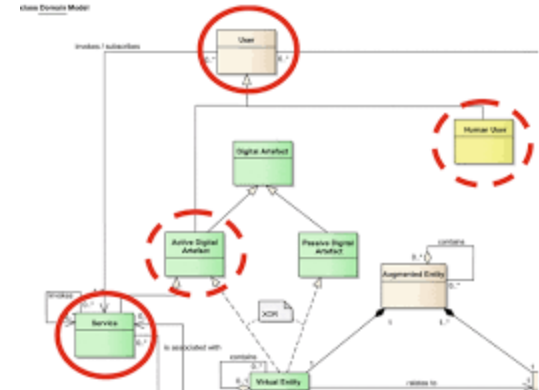
## Step 2: Process Specification

- The second step in the IoT design methodology is to define the process specification.
- In this step, the use cases of the IoT system are formally described based on and derived from the **purpose and requirement specifications**.



## Step 3: Domain Model Specification

- The third step in the IoT design methodology is to define the Domain Model.
- The domain model describes the main **concepts**, **entities** and **objects** in the domain of IoT system to be designed.
- Domain model defines the attributes of the objects and relationships between objects.



## Step 3: Domain Model Specification

- Domain model provides an abstract representation of the concepts, objects and entities in the IoT domain, independent of any specific technology or platform.
- With the domain model, the IoT system designers can get an understanding of the IoT domain for which the system is to be designed.

## Step 4: Information Model Specification

- Information Model defines the structure of all the information in the IoT system, for example, attributes of **Virtual Entities**, relations, etc.
- Information model does not describe the specifics of how the information is represented or stored.
- To define the information model, we first list the Virtual Entities defined in the Domain Model.
- Information model adds more details to the Virtual Entities by defining their attributes and relations.



## Step 5: Service Specifications

- Service specifications define
  - the services in the IoT system,
  - service types,
  - service inputs/output,
  - service endpoints,
  - service schedules,
  - service preconditions and
  - service effects.

## Step 6: IOT Level Specifications

- This is sixth step in IOT systems
- It defines five IoT deployment levels

## Step 7: Functional View Specification

- The seventh step in the IoT design methodology is to define the Functional View.
- The Functional View (FV) defines the functions of the IoT systems grouped into various **Functional Groups (FGs)**.
- Each Functional Group either provides functionalities for interacting with instances of concepts defined in the Domain Model or provides information related to these concepts.

## Step 8: Operational View Specification

- The eighth step in the IoT design methodology is to define the Operational View Specifications.
- In this step, various options pertaining to the IoT system deployment and operation are defined, such as, service hosting options, storage options, device options, application hosting options, etc

## Step 9: Device & Component Integration

- The ninth step in the IoT design methodology is the integration of the devices and components.

## Step 10: Application Development

- The final step in the IoT design methodology is to develop the IoT application.

Thank you