

## Phase Two: Planning and Requirements

### 1- Planning

- a. Scope Initiation (**WBS**)  
A deliverable oriented grouping of the work involved in a project that defines the total scope of the project.
- b. Activities definition, sequencing and duration estimating  
Show them using Gantt chart or Activity Network Diagram.
- c. Resource Planning Scheduling and Resources Distribution  
Show the distribution of human resources, tools, Software and Hardware over the Gantt chart.
- d. System Development Requirements  
List of environment and/or Tools, Utilities, Software, Hardware, etc... needed to develop the system.
- e. Cost estimating and Budgeting.  
Estimate the cost of all the resources needed to develop the system.
- f. Risk List  
Describe a list of the expected risks in your project (either due to technology, time, or available resources)

### 2- Requirements

- First specify Information Gathering Techniques you used to collect the project requirements. Add the details in an appendix.
- Second, represent the collected requirements based on one of the following two approaches:

#### Using Structured Approach (only for non-object oriented projects.)

Describe functional and non-functional requirements of the project using IEEE format.

#### Using Object Oriented Approach

- a. List of functional and non-functional requirements of the project using IEEE format.
- b. Use Case Specifications.
- c. Domain Object Diagram.

## Examples of Models required

### Functional Requirements (using IEEE format)

Functional requirements describe what the product has to do to satisfy the work or business, and are independent of any technology used by the product.

Examples:

The product shall accept a scheduling date.

The product shall warn if the scheduling date is neither today nor the next day.

### Nonfunctional Requirements

The nonfunctional requirements are the qualities your product must have, or how well it does the things it does. They make the product attractive, or usable, or fast, or reliable, or safe. It is important to specify the quality in a measurable way. The following nonfunctional requirement is not measurable.

“The product shall be user-friendly”.

A measurable way to write this "user-friendly" requirement is this :

“New users shall be able to manage the data within 30 minutes of their first attempt at using the product”.

### Use Case Specification Template

**Use Case Name:** use case name communicates the functionality

**Preconditions:** Sometimes certain conditions must exist before the use case is valid.

**Interested Stakeholders:** The people, organizations, and/or representatives of computer systems who have knowledge necessary to satisfy this use case or who have an interest in this use case.

**Flow of Events:** The steps that this use case goes through to complete the normal course of its work. Write the steps as clear, natural-language statements that are understandable to business people related to the project. There are usually between three and ten steps.

**Alternatives:** Alternatives are acceptable variations on the normal case of processing.

**Post Conditions:** conditions that mark the end of the functionality.

**Exceptions:** These are unwanted but necessary variations that handles errors.

## Domain Object Diagram

This is a class diagram that describes domain (application/real life) classes and their relationships. It is usually extracted from the system requirements (use case specification).

