

**Department of Computer Science
Software Engineering (CSC342)
Tutorial 4
(Functional and Non-Functional requirements)**

Exercise 1:

Situation: A software engineer is assigned to a new client who needs software application for GPS enabled Nokia mobiles. The basic functionality of the application is to inform the user about its current location with voice and text promptly within 10 seconds if GPS signals are available with good strength. For an example if user is in “Olaya” Street and he wants to get the information about his current location. This application will give this information by displaying text “You are in Olaya Street” and by pronouncing this text. After analyzing the requirements, Software Engineer comes to know that library (component) that accesses the GPS receiver to get the position coordinates is provided by Nokia. Also the component that receives coordinates and gives the location information in text form, is available for free by some third party. Moreover, a library that converts text to speech is also available for developers.

Question: Keeping in view of the above case, identify Functional and Non-Functional Requirements from the following given requirements

Requirements:

- 1) Get location coordinates
- 2) Get location information in text
- 3) Display and pronounce location text.
- 4) System will only work on GPS enabled Nokia devices.
- 5) Response time of the system should be good enough to display and pronounce the location text. It should be 10 seconds.

Answer:

Functional Requirements:

1. Get location coordinates
2. Get location information in text
3. Display and pronounce location text.

Non Functional:

1. System will only work on GPS enabled Nokia devices.

- 2. Response time of the system should be good enough to display and pronounce the location text. It should be 10 seconds.**

Exercise 2:

Situation: A software engineer is assigned to a new client who needs software to sell medicines to customers using bar code technique for his small pharmacy. After interacting with the client, gathering the basic requirement and assessing the scope of work, the engineer comes to know that client requires sale and profit report between two given dates. Data input like medicine name, its generic name, date of expiry, its quantity, price etc is also part of the software. Engineer also knows that Bar Code scanner and printer are easily available in market and easily configurable and integrated with the system. He also comes to know that owner of the pharmacy is lay man and do not have understanding of the computer software development process. He analyzed that software is simple in nature but to ensure and verify the customer's requirements something working is required to engage and satisfy the customer in development process. Also upon visiting the client's office, he came to know that he is already using the licensed version of windows 8 and office 2013 which includes Microsoft access database also. Client has clearly told the engineer that he would not spend more money to purchase some new operating system. He is also anxious about the system's response time and clearly stated that system's scanning and invoicing functionality should respond promptly within 2 seconds.

Question: Read above situation carefully and identify Functional and Non-Functional Requirements

Answer:

Functional Requirements:

- **Add, Delete, update and view Medicine. [must be written as independent/separate requirements]**
- **Sell Medicine**
- **Generate profit report between two dates**

Non Functional:

- 1. System should work with Barcode scanner**
- 2. Response time of the system should be good enough to perform different actions. It should be 2 second for scanning and invoicing the medicine .**
- 3. System should adhere to the medicine standard for pharmacies in Saudi Arabia. For an example, it should use the approved list of medicines in Saudi Arabia.**
- 4. System should run on Windows 8 with MS Access Database**