# CHAPTER – 2

# SOFTWARE REQUIREMENTS SPECIFICATION

The Software requirement specification is the official statement of what the system developers should implement. It should include both the user requirements for a system and a detailed specification of the system requirements. In some cases, the user and the system requirements may be integrated into single description. In other cases, the user requirements are defined in an introduction to the system requirement specification.

The requirements may document external interfaces, describe system functionality and performance, specify logical database requirements, design constraints, emergent system properties and quality characteristics.

## 2.1 Operating Environment

This project has been implemented in Python using the OpenBCI toolkit. It runs on the Windows environment.

### 2.1.1 Hardware Requirements

- Tools : OpenBCI toolkit
- System : Pentium IV 2.4 GHz.
- Hard Disk : 80 GB
- RAM : 1 GB

### 2.1.2 Software Requirements

- Operating system : Windows.
- Implementation : Python, Wyrm module
- Front End : Python, TK module
- Tool : Python compiler

## 2.2 Functional Requirements

Functional requirements are associated with specific functions, tasks or behaviors the system must support. The functional requirements address the quality characteristics of functionality while the other quality characteristics are concerned with various kinds of non-functional requirements. Because non-functional requirements tend to be tested in terms of constraints on the results of tasks which are given as functional requirements (e.g., constraints on the speed or efficiency of a given task), a task-based functional requirements statement is a useful skeleton upon which to construct a complete requirements statement. That is the approach taken in this work. It can be helpful to think of non-functional requirements as adverbially related to tasks or functional requirements.

The client-side of the system will be an application with a user interface. The user can perform one of the following operations:

1. Play: plays the current music file

2. Stop: stops the current music file

3. Play Next: plays the next music file in the sequence.

4. Play Previous: plays the previous music file in the sequence.

The server-side system will hold the entire music data in a directory and must include all functionality to perform operations on this data, receive requests from the clients, evaluate and execute the specified command.

## 2.3 Non Functional Requirements

- Safety: The system ensures safety by reducing the time for controlling the media player.
- Correctness: Ensures the correctness in the system by triggering the correct function as per the requirement of the user
- Reliability- The system, including all hardware and software, should satisfactorily perform the task for which it was designed or intended, for a specified time and in a specified environment.
- Performance-The system must be able to mine the data, cluster the data and give the best result for the give input in very less time.
- Availability-The system should be available to the users all time possible with as less downtime possible.

## 2.4 User Characteristics

The main purpose of the system is to provide a means of communication with the computer system to the severely impaired. The users are patients who are partially or completely locked- in due to various kinds of disability. Assistive technology or devices fail in the case

of such patients and they have no method to communicate with the world around them- especially the computer system.

## 2.5 Applications of System

- Can be used as a proof of concept for software applications with multiple dimensions and functions
- Provides a tool for users to control a media player through their brain signals

## 2.6 Advantages of System

- Easily scalable
- High performance and reliability
- Simplified hardware and software
- Efficient means of communication with the computer system
- Does not require much training of the user before usage

## 2.7 Summary

This chapter gives the detail about the various hardware and software requirements i.e., details about the various hardware and software equipments used in this project. It also gives the details about the functional and non-functional requirements of our project. It provides information about the various characteristics of the user too.