CHAPTER - 4

DETAILED DESIGN

The system design documentation presents the structure of the system such as the Activity diagram, Use Case diagram and Sequence diagram.

4.1 Activity Diagram

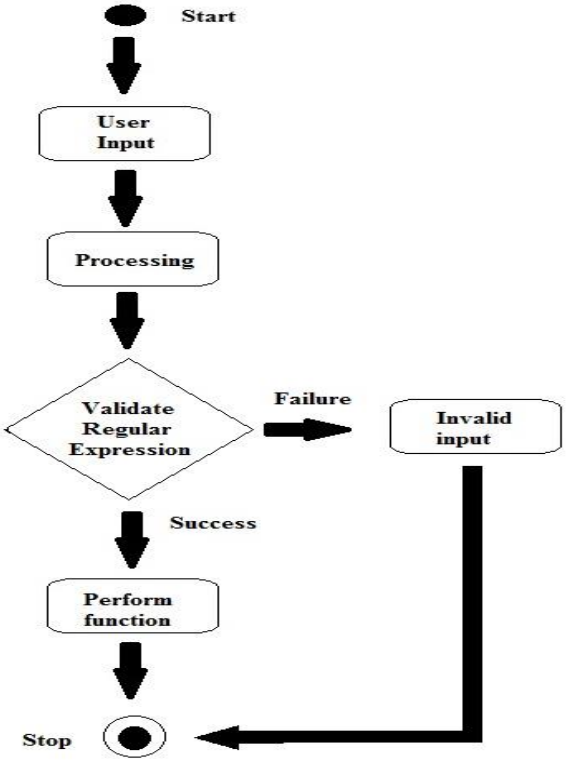

Fig 4.1.1: Activity diagram of the system

Activity diagrams are graphical representations of workflows of step wise activities and actions with support for choice, iteration and concurrency.

The system starts with the initialization of the media player and loading of a pre-loaded playlist (if any). Following that, the user enters input in the form of imagined hand movement. The input is acquired by the OpenBCI device and then processed and classified. A regular expression is used to validate the string of 0s and 1s. If the string matches the regular expression, it is then used to control the media player. Else, an error message is displayed to the user. The system then stops.

4.2 Use Case Diagram

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-Case analysis.

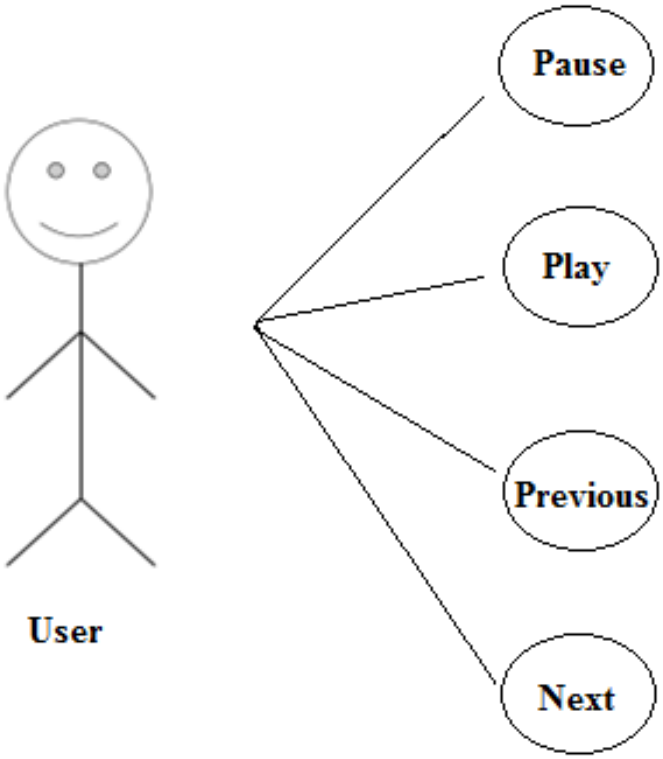

Fig.4.2.1: Use Case diagram for the system

The user can perform four functions:

1. Pause - Pause the song being currently played
2. Play – Play a song from the playlist
3. Previous – Move to the previous song in the playlist
4. Next – Move to the next song in the playlist

4.3 Sequence Diagram

A Sequence diagram is an interaction diagram that shows how processes operate with one another and what is their order. The sequence diagrams depicting the 3 modules of this system are shown below:

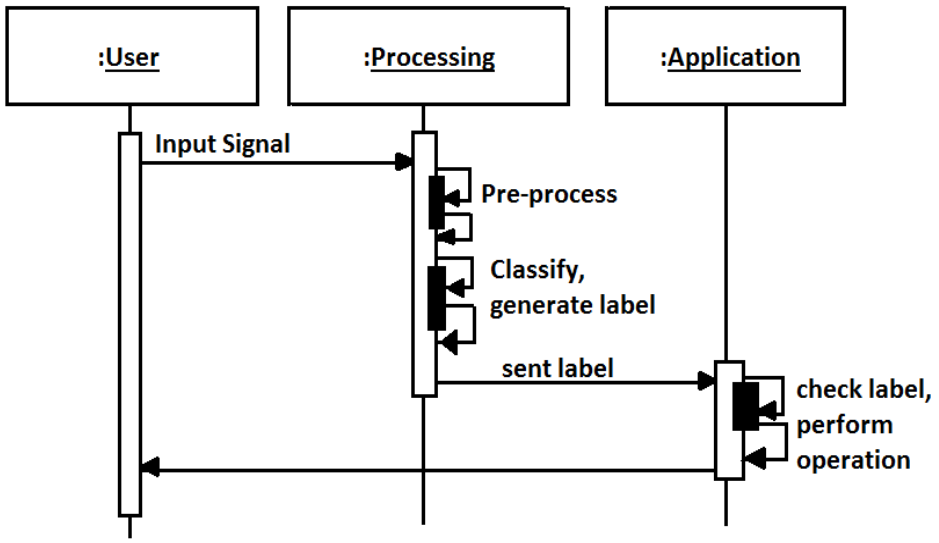

Fig 4.3.1: Sequence diagram for the system

The user first provides an input signal to the processing module. This module carries out pre-processing and classification to generate a label. This label is sent to the application. The application checks the label using a regular expression and performs the corresponding operation if it is valid.

4.4 Summary

This chapter summarizes the activity diagram, the use case diagram and the sequence diagram of the system. The 3 modules of the system and their communication are explained with the help of these diagrams here.