Project Design Phase-II

**Solution Requirements (Functional & Non-functional)**

|  |  |
| --- | --- |
| Date | 17 November 2022 |
| Team ID | PNT2022TMID43833 |
| Project Name | Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | **User Registration** | * Registration through Form * Registration through Gmail * Registration through LinkedIN |
| FR-2 | **User Confirmation** | * Confirmation via Email * Confirmation via OTP |
| FR-3 | **User interface** | Check your profile and choose your file |
| FR-4 | **User input** | Upload image as jpeg/png format |
| FR-5 | **Data processing** | Evaluating the model using test data training Dl algorithm for a accuracy result  trained CNN model using Keras,Tensorflow |
| FR-6 | **Image prediction** | Image will be predicted at the accuracy rate of 90.4% |
| FR-7 | **Report generation** | Image will be shown as output |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

|  |  |  |
| --- | --- | --- |
| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | * Arrhythmia is an irregular heart rhythm from normal rhythm. * Classification of arrhythmia with the help of deep learning. * However,there was no studies   dealing with usability of this sensor in this field testing. |
| NFR-2 | **Security** | Users data cannot be accessed by unauthorized people. |
| NFR-3 | **Reliability** | System performs their functions without failure. |
| NFR-4 | **Performance** | * ECG signals augumenting training data manually could degrade the performance. * Detect irregular heart beats * Accuracy rate |
| NFR-5 | **Availability** | Availability describes how likely the system is accessible to a user at a given  point in time and the periodically of the solutions. |
| NFR-6 | **Scalability** | Performance does not be affected. |