**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

| Date | 03 October 2022 |
| --- | --- |
| Team ID | PNT2022TMIDxxxxxx |
| Project Name | Project - Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation |
| Maximum Marks | 4 Marks |

**Table-1 : Components & Technologies:**

| **S.No** | **Component** | **Description** | **Technology** |
| --- | --- | --- | --- |
|  | User Interface | Web UI | HTML, CSS,Python. |
|  | Application Logic-1 | Data Preprocessing | Keras, Tensorflow, Numpy - (Importing Essentisl Libraries) |
|  | Application Logic-2 | CNN Model Creating | Keras, Tensorflow, Numpy - (Importing Essentisl Libraries) |
|  | Application Logic-3 | Web Application ( UI ) | Flask |
|  | Database | Images ( Jpeg, PNG, Jpg, etc.. ) | Uploads Folder |
|  | File Storage | File storage requirements ( only if necessary ) | IBM Block Storage / Google Drive (Depends On Preference) |
|  | External API-1 | Keras | Image Processing API. |
|  | Deep Learning Model | Inception v3 architecture | Object Recognition Model, etc. |
|  | Infrastructure (Server / Cloud) | Application Deployment on web server | Flask—a Python WSGI HTTP server |

**Table-2: Application Characteristics:**

| **S.No** | **Characteristics** | **Description** | **Technology** |
| --- | --- | --- | --- |
|  | Open-Source Frameworks | Flask | Technology of Open source framework |
|  | Security Implementations | CSRF protection, cookies protection, jinja templating and user input. | Jinja2 |
|  | Scalable Architecture | Micro Services | Micro web application framework by Flask |
|  | Availability | 1. built-in development server and fast debugger 2. integrated support for unit testing 3. RESTful request dispatching Jinja2 templating Unicode based | Jinja2 |
|  | Performance | ORM-agnostic, web framework, WSGI 1.0 compliant, HTTP request handling functionality High Flexibility | SQLAlchemy, extensions, Werkzeug, Jinja2, Sinatra Ruby framework. |