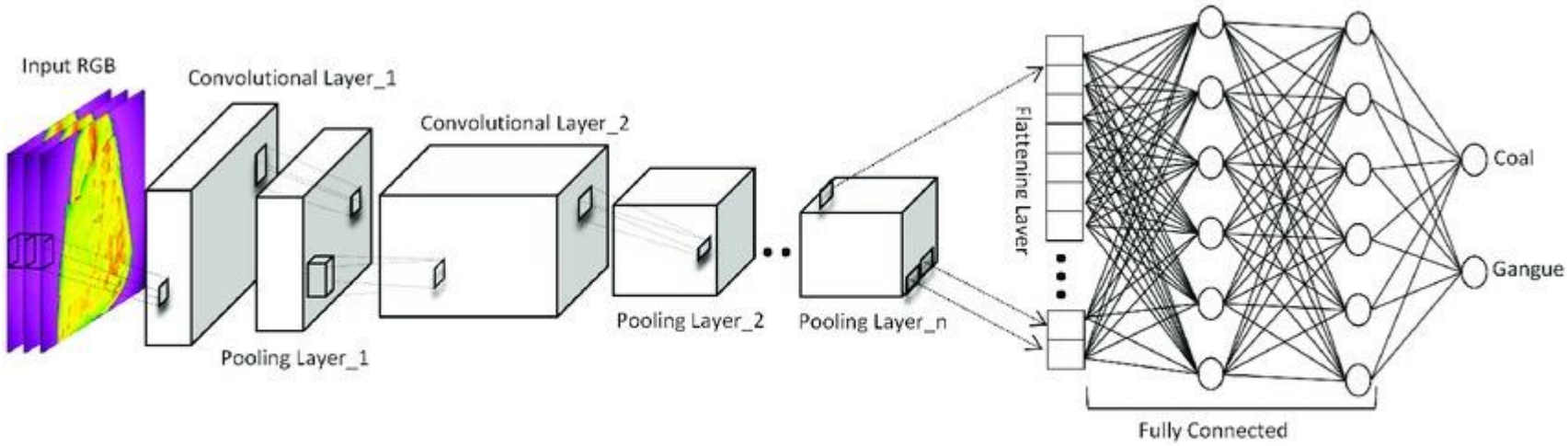
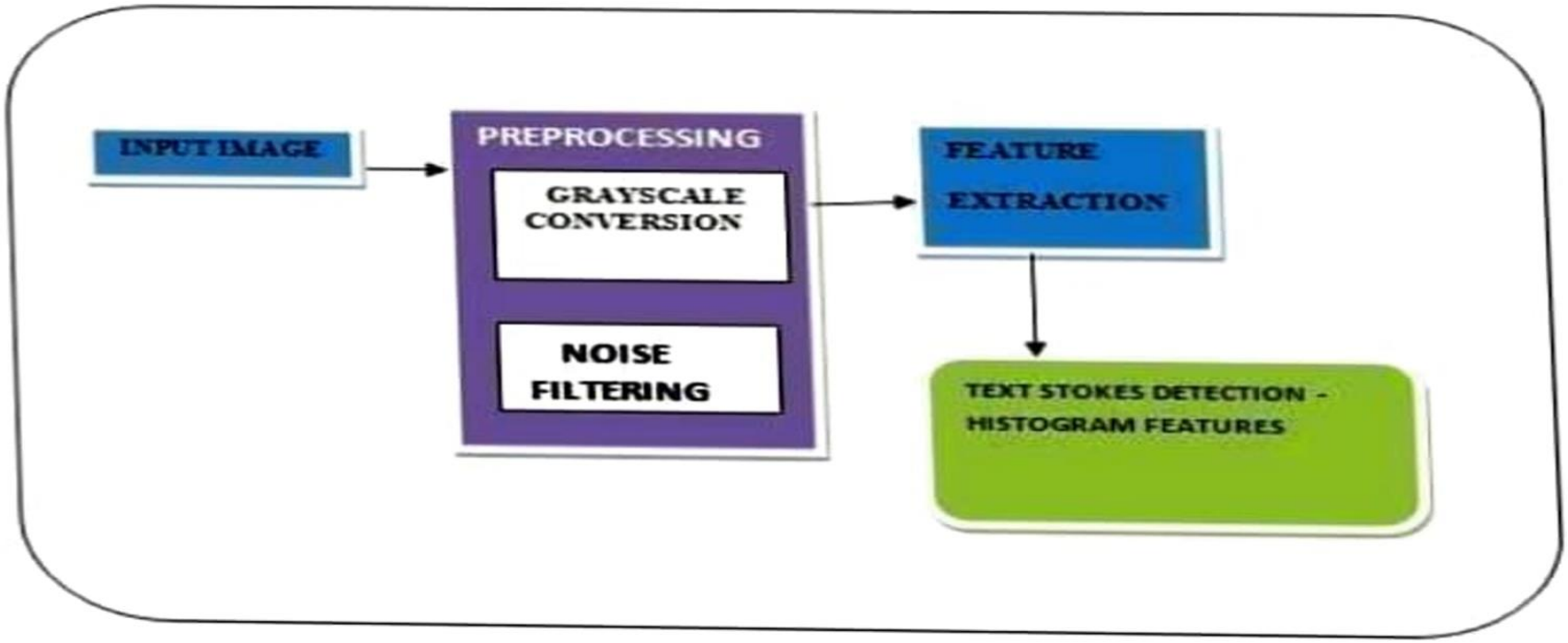
Project Design Phase-Technology Stack
(Architecture & Stack)

Date	17 October 2022
Team ID	PNT2022TMID15718
Project Name	Classification of Arrhythmia by using Deep Learning with 2-D

Technical Architecture:

The architectural diagram of the model is as below and the Technology used is shown in Table1




INPUT IMAGE
PREPROCESSING
GRAYSCALE CONVERSION
NOISE FILTERING
FEATURE EXTRACTION
TEXT STOKES DETECTION – HISTOGRAM FEATURES

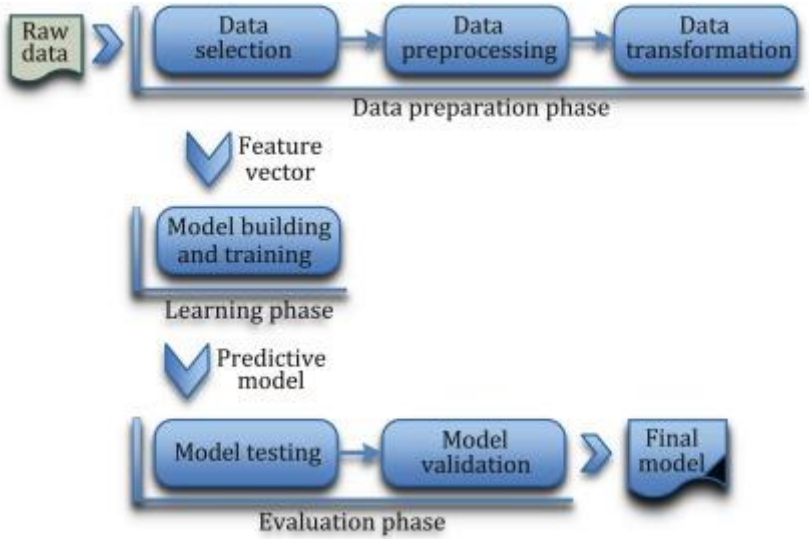


FIG. 1. BLOCK DIAGRAM

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g., Mobile Application	HTML, CSS, JavaScript / Angular JS / Node Red
2.	Application Logic-1	Logic for a process in the application	Java / Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on AI in cloud	IBM DB2
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	Internet of Things Model	Purpose of AI Model is for integrating the sensors with a user interface.	IBM AI Platform
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model
11.	Infrastructure (Server / AI)	Application Deployment on Local System / AI Local Server Configuration AI Server Configuration	Local, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Deep learning frameworks can help you upload data and train a deep learning model that would lead to accurate and intuitive predictive analysis.	Tensorflow, PyTorch
2.	Security Implementations	The system should automatically be able to authenticate all users with their unique username and password	NA
3.	Scalable Architecture	The system should be able to handle 10000 users accessing the site at the same time	NA
4.	Availability	Information is restricted to each users limited access	NA
5.	Performance	Should reduce the delay in information when hundreds of requests are given	Google Co-Lab Pro/ Require high end system.