SPRINT-1

DATA COLLECTION AND IMAGE PRE-PROCESSING

DATE	14 NOV 2022
TEAM ID	PNT2022TMID01315
PROJECT NAME	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation

DATA COLLECTION:

It consists of six classes:

1. Left Bundle Branch Block
2. Normal
3. Premature Atrial Contraction
4. Premature Ventricular Contractions
5. Right Bundle Branch Block
6. Ventricular Fibrillation

IMAGE PRE-PROCESSING:

1. Import ImageDataGenerator Library
2. Configure ImageDataGenerator Class
3. Apply ImageDataGenerator functionality to the trainset and testset

IMPORT IMAGE DATA GENERATOR LIBRARY:

In [6]:
```
import tensorflow as tf
```

In [7]:
```
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense
from tensorflow.keras.layers import Convolution2D
from tensorflow.keras.layers import MaxPooling2D
from tensorflow.keras.layers import Flatten
```

In [8]:
```
from tensorflow.keras.preprocessing.image import ImageDataGenerator
```

CONFIGURE IMAGEDATAGENERATOR CLASS:

In [9]:
```
train_datagen = ImageDataGenerator(rescale = 1./255,shear_range = 0.2,zoom_range = 0.2,horizontal_flip = True)
test_datagen = ImageDataGenerator(rescale = 1./255)
```

APPLY IMAGEDATAGENERATOR FUNCTIONALITY TO THE TRAINSET AND TESTSET:

In [10]:
```
x_train = train_datagen.flow_from_directory("C:/Users/LIKITHA S/Downloads/ibm/data/data/train",target_size = (64,64),batch_size =
x_test = test_datagen.flow_from_directory("C:/Users/LIKITHA S/Downloads/ibm/data/data/test",target_size = (64,64),batch_size = 32
```

```
Found 15341 images belonging to 6 classes.
Found 6825 images belonging to 6 classes.
```