# Project Name: Cardiac Arrhythmia

# Problem Statement:

The Electrocardiogram (ECG) is an established technique in cardiology for the analysis of cardiac condition of the patients. In its basic definition, ECG is the electrical representation of the contractile activity of the heart, and can be recorded fairly easily by using surface electrodes on the limbs or chest of the patient. The ECG is one of the most recognized and used biomedical signal in the field of medicine. The rhythm of the heart in terms of beats per minute (bpm) can be easily calculated by counting the R peaks of the ECG wave during one minute of recording. More importantly, rhythm and the morphology of the ECG waveform is altered by cardiovascular diseases and abnormalities such as the cardiac arrhythmias, which their automatic detection and classification is the main focus of this study.

The aim of this project is to distinguish between the presence and absence of cardiac arrhythmia and to classify it in one of the 16 groups.

Class 01 refers to NORMAL ECG

Classes 02 -15 refers to different classes of arrhythmia

Class 16 refers to the rest of unclassified ones.

Class Distribution:

Class code: Class : Number of instances:

01 Normal 245

02 Ischemic changes (Coronary Artery Disease) 44

03 Old Anterior Myocardial Infarction 15

04 Old Inferior Myocardial Infarction 15

05 Sinus tachycardy 13

06 Sinus bradycardy 25

07 Ventricular Premature Contraction (PVC) 3

08 Supraventricular Premature Contraction 2

09 Left bundle branch block 9

10 Right bundle branch block 50

11 1. Degree Atrioventricular block 0

12 2. Degree AV block 0

13 3. Degree AV block 0

14 Left ventricle hypertrophy 4

15 Atrial Fibrillation or Flutter 5

16 Others 22

Cardiac Arrhythmia Database contains 279 attributes, 206 of which are linear valued and the rest are nominal.

Number of Instances: 452

Number of Attributes: 279