model = Sequential()

model.add(tf.keras.layers.Dense(units=13,activation ='relu', input\_shape = (len(imp\_features),) ))

#model.add(tf.keras.layers.Dropout(0.25))

model.add(tf.keras.layers.Dense(units=15,activation ='relu'))

model.add(tf.keras.layers.Dropout(0.2))

model.add(tf.keras.layers.Dense(units=9,activation ='relu'))

model.add(tf.keras.layers.Dropout(0.2))

model.add(tf.keras.layers.Dense(units=5,activation='softmax'))

model.compile(optimizer = Adam(), loss = 'categorical\_crossentropy',

              metrics = ['accuracy'])

class\_wt = {0: 2.953333333333333,

            1: 0.899492385786802,

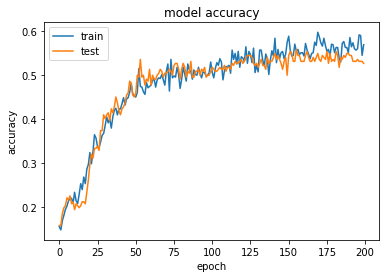
            2: 0.55375,

            3: 0.7875555555555556,

            4: 2.1095238095238096}

history = model.fit(X\_train\_scaled,y\_train\_cat,validation\_split=0.25,

                    epochs=200, verbose=1,batch\_size=20,class\_weight=class\_wt)



A picture containing shape

Description automatically generated

Testing

Accuracy Score for Sequential 0.5371621621621622

F1 Score for Sequential 0.532646185542527

Graphical user interface, application

Description automatically generated with medium confidence

Generalization

Accuracy Score for Sequential 0.5578703703703703

F1 Score for Sequential 0.5476033607306009

Chart

Description automatically generated