Project Performance Phase
Model Performance Test

Date	6 November 2023
Team ID	Team-593012
Project Name	Alzheimer Disease Prediction

Model Performance Testing:

S.No.	Parameter	Values	Screenshot
1.	Model Summary	**The model used here is a customized version of the Transfer Learning Technique called Xception. It is a deep learning model which uses CNN layers to train its model effectively.**	

```
xception_model = Xception(input_shape=(150, 150, 3), include_top=False, weights="imagenet")

for layer in xception_model.layers:
    layer.trainable = False

custom_xception_model = Sequential([
    xception_model,
    Dropout(0.5),
    GlobalAveragePooling2D(),
    Flatten(),
    BatchNormalization(),
    Dense(512, activation='relu'),
    BatchNormalization(),
    Dropout(0.5),
    Dense(256, activation='relu'),
    BatchNormalization(),
    Dropout(0.5),
    Dense(128, activation='relu'),
    BatchNormalization(),
    Dropout(0.5),
    Dense(64, activation='relu'),
    Dropout(0.5),
    BatchNormalization(),
    Dense(4, activation='softmax')
], name="xception_cnn_model")

METRICS = [
    tf.keras.metrics.BinaryAccuracy(name='accuracy'),
    tf.keras.metrics.Precision(name='precision'),
    tf.keras.metrics.Recall(name='recall'),
    tf.keras.metrics.AUC(name='auc')
]

custom_xception_model.compile(optimizer='adam',
                              loss=tf.losses.CategoricalCrossentropy(),
                              metrics=METRICS)
```

2.	Accuracy	Training Accuracy - 90.75 Validation Accuracy – 90.63