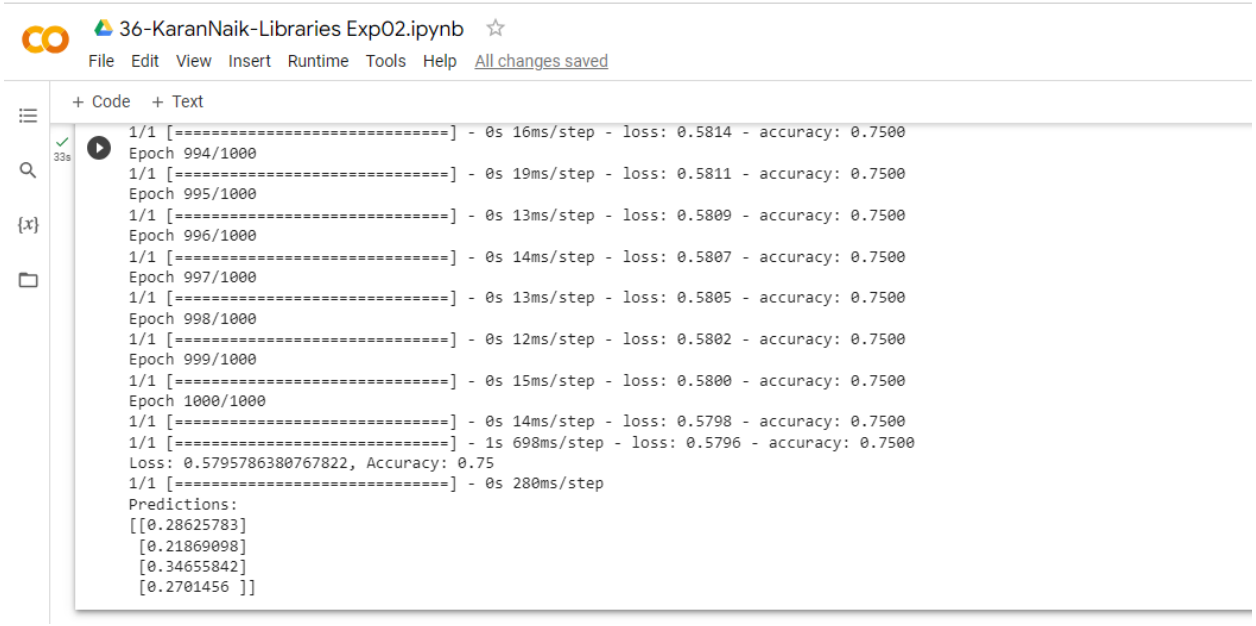
36 - Karan Naik

Code:

```
import numpy as np
import tensorflow as tf
from tensorflow import keras
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense

np.random.seed(0)
X = np.array([[0, 0], [0, 1], [1, 0], [1, 1]])
y = np.array([0, 0, 0, 1])

model = Sequential()
model.add(Dense(1, input_dim=2, activation='sigmoid'))

model.compile(loss='binary_crossentropy', optimizer='adam', metrics=['accuracy'])

model.fit(X, y, epochs=1000, verbose=1)

loss, accuracy = model.evaluate(X, y)
print(f'Loss: {loss}, Accuracy: {accuracy}')

predictions = model.predict(X)
print('Predictions:')
print(predictions)
```

Output:


36-KaranNaik-Libraries Exp02.ipynb
File Edit View Insert Runtime Tools Help All changes saved
+ Code + Text
33s
1/1 [==============================] - 0s 16ms/step - loss: 0.5814 - accuracy: 0.7500
Epoch 994/1000
1/1 [==============================] - 0s 19ms/step - loss: 0.5811 - accuracy: 0.7500
Epoch 995/1000
1/1 [==============================] - 0s 13ms/step - loss: 0.5809 - accuracy: 0.7500
Epoch 996/1000
1/1 [==============================] - 0s 14ms/step - loss: 0.5807 - accuracy: 0.7500
Epoch 997/1000
1/1 [==============================] - 0s 13ms/step - loss: 0.5805 - accuracy: 0.7500
Epoch 998/1000
1/1 [==============================] - 0s 12ms/step - loss: 0.5802 - accuracy: 0.7500
Epoch 999/1000
1/1 [==============================] - 0s 15ms/step - loss: 0.5800 - accuracy: 0.7500
Epoch 1000/1000
1/1 [==============================] - 0s 14ms/step - loss: 0.5798 - accuracy: 0.7500
1/1 [==============================] - 1s 698ms/step - loss: 0.5796 - accuracy: 0.7500
Loss: 0.5795786380767822, Accuracy: 0.75
1/1 [==============================] - 0s 280ms/step
Predictions:
[[0.28625783]
[0.21869098]
[0.34655842]
[0.2701456]]