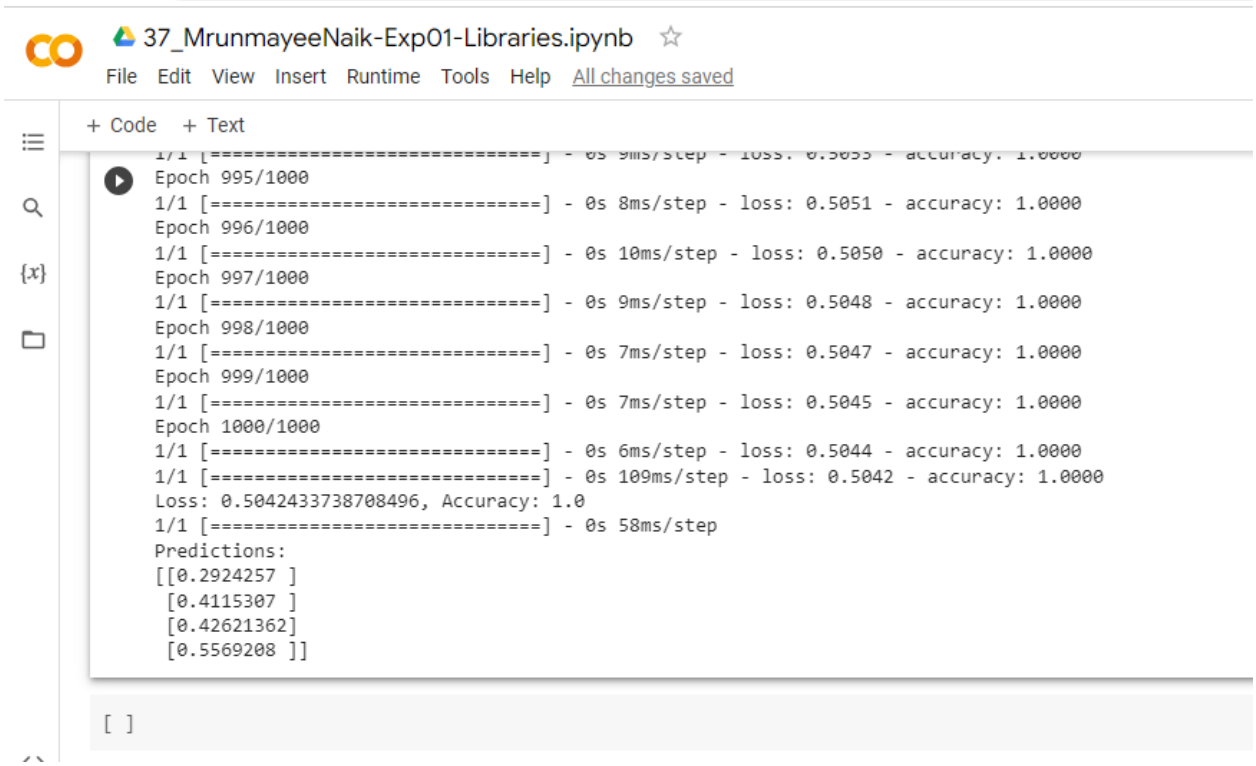
37 - Mrunmayee Naik

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:


37_MrunmayeeNaik-Exp01-Libraries.ipynb
File Edit View Insert Runtime Tools Help All changes saved
+ Code + Text
Epoch 995/1000
1/1 [==========] - 0s 8ms/step - loss: 0.5051 - accuracy: 1.0000
Epoch 996/1000
1/1 [==========] - 0s 10ms/step - loss: 0.5050 - accuracy: 1.0000
Epoch 997/1000
1/1 [==========] - 0s 9ms/step - loss: 0.5048 - accuracy: 1.0000
Epoch 998/1000
1/1 [==========] - 0s 7ms/step - loss: 0.5047 - accuracy: 1.0000
Epoch 999/1000
1/1 [==========] - 0s 7ms/step - loss: 0.5045 - accuracy: 1.0000
Epoch 1000/1000
1/1 [==========] - 0s 6ms/step - loss: 0.5044 - accuracy: 1.0000
1/1 [==========] - 0s 109ms/step - loss: 0.5042 - accuracy: 1.0000
Loss: 0.5042433738708496, Accuracy: 1.0
1/1 [==========] - 0s 58ms/step
Predictions:
[[0.2924257]
[0.4115307]
[0.42621362]
[0.5569208]]
[ ]