AI ASSIGMENT 2 20BCR7029

TASK 1

```
import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import LabelEncoder, StandardScaler


df = pd.read_csv('drug200.csv')


le = LabelEncoder()
df['Sex'] = le.fit_transform(df['Sex'])
df['BP'] = le.fit_transform(df['BP'])
df['Cholesterol'] = le.fit_transform(df['Cholesterol'])


X = df.drop('Drug', axis=1)
y = df['Drug']


scaler = StandardScaler()
X = scaler.fit_transform(X)


X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
```

TASK 2

```
[15] from tensorflow.keras.models import Sequential
     from tensorflow.keras.layers import Dense


[16] model = Sequential()
     model.add(Dense(64, activation='relu', input_dim=X_train.shape[1]))
     model.add(Dense(32, activation='relu'))
     model.add(Dense(16, activation='relu'))
     model.add(Dense(len(df['Drug'].unique()), activation='softmax'))


[17] model.compile(loss='sparse_categorical_crossentropy', optimizer='adam', metrics=['accuracy'])
```

TASK 3

```
[18] random_data = np.random.rand(10, X_train.shape[1])  # Generate 10 random samples
```

```
[19] predictions = model.predict(random_data)
     predicted_labels = np.argmax(predictions, axis=1)
```

```
     1/1 [==============================] - 0s 256ms/step
```