```
import pandas as pd       #loading the libraries
import numpy as np
from  sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error


columns=['user_id', 'item_id', 'rating','timestamp']
data=pd.read_csv('u.data',sep='\t',names=columns)    #uploading the dataset
print(data.head())
```

```
   user_id  item_id  rating  timestamp
0      196      242       3  881250949
1      186      302       3  891717742
2       22      377       1  878887116
3      244       51       2  880606923
4      166      346       1  886397596
```

```
x=data[['user_id','item_id']]         #defining the independent variable
y=data['rating']                      #defining the dependent variable
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.2,random_state=42)    #splitting train and test set


model=LinearRegression()          #traing the model
model.fit(x_train,y_train)
```

```
▾ LinearRegression
LinearRegression()
```

```
y_pred=model.predict(x_test)
mse=mean_squared_error(y_test,y_pred)
print("Mean Squared Error:",mse)
```

```
Mean Squared Error: 1.2140636353733982
```

```
sample=np.array([[50,100]])
print("Predicted rating ", model.predict(sample))
```

```
Predicted rating  [3.74684763]
/usr/local/lib/python3.12/dist-packages/sklearn/utils/validation.py:2739: UserWarning: X does not have valid feature
  warnings.warn(
```