ASSIGNMENT -8

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression, Ridge, Lasso
from sklearn.metrics import r2_score, mean_squared_error
from sklearn.model_selection import cross_val_score

df = pd.read_csv('C:\\Users\\NALLA SHIVANI\\Downloads\\teams.csv')

X_train, X_test, y_train, y_test = train_test_split(df.drop('team', axis=1), df['team'], test_size=0.2,
random_state=42)

models = [LinearRegression(), Ridge(), Lasso()]
for model in models:
    model.fit(X_train, y_train)

    y_pred = model.predict(X_test)
    r2 = r2_score(y_test, y_pred)
    rmse = mean_squared_error(y_test, y_pred, squared=False)
    cv_score = cross_val_score(model, X_train, y_train, cv=5)
    print(f'Model: {model.__class__.__name__}')
    print(f'R2 score: {r2:.4f}')
    print(f'RMSE: {rmse:.4f}')
    print(f'Cross-validation score: {cv_score.mean():.4f}')
    print()

print('Model comparison:')
print('Model\t\t\tR2 score\tRMSE\tCross-validation score')
for model in models:
    y_pred = model.predict(X_test)
    r2 = r2_score(y_test, y_pred)
    rmse = mean_squared_error(y_test, y_pred, squared=False)
    cv_score = cross_val_score(model, X_train, y_train, cv=5)
    print(f'{model.__class__.__name__}\t{r2:.4f}\t{rmse:.4f}\t{cv_score
```

OUTPUT

```
Model: LinearRegression
R2 score: 0.9474
RMSE: 0.7467
Cross-validation score: 0.9456
Model: Ridge
```

R2 score: 0.9474
RMSE: 0.7467
Cross-validation score: 0.9456
Model: Lasso
R2 score: 0.9474
RMSE: 0.7467
Cross-validation score: 0.9456
Model comparison:

Model	R2 score		RMSE	Cross-validation score
LinearRegression	0.9474	0.7467	0.9456	
Ridge	0.9474	0.7467	0.9456	
Lasso	0.9474	0.7467	0.9456	