


```
[43]: sample1

Out[43]:
      team1 team2 toss_winner toss_decision winner
0  SRH    RCB    RCB          field    SRH
4  RCB    DC    RCB          bat    RCB
6  KKR    MI    MI          field    MI
7  RCB    KXIP    RCB          bat    KXIP
9  SRH    MI    MI          field    MI
...
...
809  KKR    RR    RR          field    KKR
810  DC    RCB    DC          field    DC
811  SRH    MI    SRH          field    SRH
812  MI    DC    DC          field    MI
813  SRH    RCB    SRH          field    SRH

626 rows × 5 columns

In [44]: #sample1[(sample1['team1']=='SRH')& (sample1['team2']=='RR')|(sample1['team2']=='SRH')& (sample1['team1']=='RR')]
Out[44]:
In [45]:
from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.datasets import make_classification

In [46]: sample = pd.get_dummies(sample, prefix=['Team_1', 'Team_2','toss_won','toss_dec'],
                                columns=['team1', 'team2','toss_winner','toss_decision'])
sample

Out[46]:
      winner Team_1_CSK Team_1_DC Team_1_KKR Team_1_KXIP Team_1_MI Team_1_RCB Team_1_RR Team_1_SRH Team_2_CSK Team_2_C
0  SRH          0      0      0      0      0      0      0      0      1      0      0
4  RCB          0      0      0      0      0      0      1      0      0      0      0
6  KKR          0      0      1      0      0      0      0      0      0      0      0
7  KXIP         0      0      0      0      0      0      0      1      0      0      0
9  MI           0      0      0      0      0      0      0      0      0      1      0
...
...
809  KKR          0      0      1      0      0      0      0      0      0      0      0
810  DC          0      1      0      0      0      0      0      0      0      0      0
811  SRH         0      0      0      0      0      0      0      0      0      1      0
812  MI          0      0      0      0      1      0      0      0      0      0      0
813  SRH         0      0      0      0      0      0      0      0      0      1      0

626 rows × 27 columns

In [47]: X = sample.drop(['winner'], axis=1)
y = sample["winner"]

In [48]: X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.20, random_state=42)
X_train

Out[48]:
      Team_1_CSK Team_1_DC Team_1_KKR Team_1_KXIP Team_1_MI Team_1_RCB Team_1_RR Team_1_SRH Team_2_CSK Team_2_C
657      0      0      0      0      1      0      0      0      0      0
156      0      0      0      1      0      0      0      0      0      0
169      0      0      0      0      1      0      0      0      0      0
665      1      0      0      0      0      0      0      0      0      0
...
...
112      0      0      0      0      1      0      0      0      0      0
159      0      0      0      0      0      0      1      0      0      0
420      0      0      0      0      1      0      0      0      0      0
612      0      0      0      0      0      0      0      1      0      0
153      0      0      1      0      0      0      0      0      0      0

500 rows × 26 columns

In [49]: rfr1 = RandomForestClassifier(n_estimators=307, max_depth=50,oob_score=True ,class_weight="balanced",ver
                                rf1.fit(X_train, y_train)

[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.
[Parallel(n_jobs=1)]: Done 1 out of 1 | elapsed: 0.0s remaining: 0.0s

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[Parallel(n_jobs=1)]: Done 307 out of 307 | elapsed: 0.3s finished

Out[49]: RandomForestClassifier(bootstrap=True, class_weight='balanced',
                                criterion='gini', max_depth=50, max_features='auto',
                                max_leaf_nodes=None, min_impurity_decrease=0.0,
                                min_impurity_split=None, min_samples_leaf=1,
                                min_samples_split=2, min_weight_fraction_leaf=0.0,
                                n_estimators=307, n_jobs=1, oob_score=True,
                                random_state=42, verbose=2, warm_start=False)

In [50]: score = rfr1.score(X_train, y_train)
score2 = rfr1.score(X_test, y_test)
print(score)
print(score2)

[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.
[Parallel(n_jobs=1)]: Done 1 out of 1 | elapsed: 0.0s remaining: 0.0s
[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.
[Parallel(n_jobs=1)]: Done 307 out of 307 | elapsed: 0.0s remaining: 0.0s
[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.
[Parallel(n_jobs=1)]: Done 307 out of 307 | elapsed: 0.0s remaining: 0.0s

0.7
0.5238095238095238

In [51]: print(rfr1.oob_score_)
0.534

In [52]: #after training now applying 2020 schedule to predict

In [70]: copy3=pd.read_csv('2020 Copy3.csv')
#COPY3

x=['Sunrisers hyderabad', 'Mumbai Indians', 'Gujarat Lions',
'Rising Pune Supergiant', 'Royal Challengers Bangalore',
'Chennai Super Kings', 'Delhi Daredevils', 'Kings XI Punjab',
'Chennai Super Kings', 'Rajasthan Royals', 'Deccan Chargers',
'Kochi Tuskers Kerala', 'Pune Warriors', 'Rising Pune Supergiants', 'Delhi Capitals', 'Royal Challen

fy = [1,2,3,4,5,6,7,8,9,10,11,12,13,4,14]
y = ['SRH','MI','GL','RRS','RCB','KKR','DD','KXIP','CSK','RR','DCR','KTK','PW','RRS','DC','RCB']

copy3.replace(x,y,inplace = True)
copy3

Out[71]:
      Team Team2 toss_winner toss_decision
0  CSK    RR          RR          DC    bat
1  KXIP    DC          DC          field
2  KKR    RCB          RCB          bat
3  RKR    SRH          SRH          field
4  CSK    MI          MI          field
5  KKR    DC          KKR          field
6  KXIP    SRH          SRH          bat
7  RCB    CSK          RCB          bat
8  RR    MI          MI          bat
9  KKR    KXIP          KXIP          field
10 SRH    DC          DC          field
11 MI    RCB          MI          field
12 CSK    KKR          CSK          field
13 KXIP    RR          RR          field
14 DC    MI          MI          field
15 RCB    SRH          SRH          field
16 CSK    KXIP          CSK          field
17 KKR    RR          RR          field
18 DC    RCB          DC          field
19 SRH    MI          SRH          field
20 MI    DC          MI          bat
21 SRH    RCB          SRH          field
22 DC    SRH          DC          bat
23 MI    DC          DC          bat

In [72]: copyy = pd.get_dummies(copy3, prefix=['Team_1', 'Team_2','toss_won','toss_dec'], columns=['Team', 'Team_2','toss_winner','toss_decision'])
copyy

Out[72]:
      Team_1_CSK Team_1_DC Team_1_KKR Team_1_KXIP Team_1_MI Team_1_RCB Team_1_RR Team_1_SRH Team_2_CSK Team_2_C
0      0      0      0      0      0      0      0      0      0      0
1      1      0      0      0      1      0      0      0      0      0
2      0      0      0      1      0      0      0      0      0      0
3      0      0      0      0      0      0      0      1      0      0
4      1      0      0      0      0      0      0      0      0      0
5      0      0      1      0      0      0      0      0      0      0
6      0      0      0      0      1      0      0      0      0      0
7      0      0      0      0      0      0      1      0      0      1
8      0      0      0      0      0      0      0      1      0      0
9      0      0      1      0      0      0      0      0      0      0
10     0      0      0      0      0      0      0      0      1      0
11     0      0      0      0      0      1      0      0      0      0
12     1      0      0      0      0      0      0      0      0      0
13     0      0      0      1      0      0      0      0      0      0
14     0      1      0      0      0      0      0      0      0      0
15     0      0      0      0      0      0      1      0      0      0
16     1      0      0      0      0      0      0      0      0      0
17     0      0      1      0      0      0      0      0      0      0
18     0      1      0      0      0      0      0      0      0      0
19     0      0      0      0      0      0      0      0      1      0
20     0      0      0      0      0      1      0      0      0      0
21     0      0      0      0      0      0      0      0      1      0
22     0      1      0      0      0      0      0      0      0      0
23     0      0      0      0      0      1      0      0      0      0

24 rows × 26 columns

In [73]: predicts=rfr1.predict(copyy)
print(predicts)

['CSK' 'KXIP' 'RCB' 'SRH' 'MI' 'KKR' 'SRH' 'CSK' 'RR' 'KKR' 'DC' 'MI'
'CSK' 'KXIP' 'DC' 'SRH' 'CSK' 'RR' 'DC' 'SRH' 'MI' 'SRH' 'SRH' 'MI']

[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.
[Parallel(n_jobs=1)]: Done 1 out of 1 | elapsed: 0.0s remaining: 0.0s
[Parallel(n_jobs=1)]: Done 307 out of 307 | elapsed: 0.0s remaining: 0.0s

In [57]: pr=rfr1.predict(X_test)
#print(prs)

[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.
[Parallel(n_jobs=1)]: Done 1 out of 1 | elapsed: 0.0s remaining: 0.0s
[Parallel(n_jobs=1)]: Done 307 out of 307 | elapsed: 0.0s remaining: 0.0s

In [66]:
from sklearn.metrics import metrics
# Model Accuracy, how often is the classifier correct?
print("Accuracy:",metrics.accuracy_score(y_test, prs))
Accuracy: 0.5238095238095238

In [67]: pr = pd.DataFrame(predicts,columns=['Possible_aft_toss_Winners'])
pr

In [127]: pr['Possible_aft_toss_Winners'].value_counts()

Out[127]:
SRH    4
CSK    3
RR     3
DC     3
MI     2
KXIP   2
RCB    2
KKR    1
Name: Possible_aft_toss_Winners, dtype: int64

In [128]:
from sklearn.metrics import confusion_matrix
cm = confusion_matrix(y_test,prs)
cm

Out[128]:
array([[16, 3, 1, 1, 0, 0, 1, 3],
       [ 0, 5, 2, 0, 2, 1, 1, 0],
       [ 2, 1, 8, 1, 0, 0, 2, 2],
       [ 1, 1, 1, 8, 0, 0, 2, 0],
       [ 6, 0, 0, 1, 14, 6, 1, 0],
       [ 0, 0, 1, 1, 0, 5, 3, 1],
       [ 0, 3, 1, 1, 1, 0, 3, 0],
       [ 0, 1, 0, 0, 2, 0, 1, 9]], dtype=int64)
```


[illegible]

[illegible]

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Mean_RF_Acc : 0.5872519509476032

[Parallel(n_jobs=1)]: Done 30 out of 307 | elapsed: 0.3s finished
[Parallel(n_jobs=1)]: Using backend SequentialBackend with 1 concurrent workers.
[Parallel(n_jobs=1)]: 1 out of 1 | elapsed: 0.0s remaining: 0.0s

```

```
[Parallel(n_jobs=1)]: Done 307 out of 307 | elapsed: 0.0s finished
```

```

# from sklearn.tree import export_graphviz
# import pydot
# Pull out one tree from the forest
# tree = rf.estimators_[5]
# Import tools needed for visualization
# from sklearn.tree import export_graphviz
# import pydot
# Pull out one tree from the forest
# tree = rf.estimators_[5]
# Export the image to a dot file
# export_graphviz(tree, out_file = 'tree.dot', feature_names=None, rounded = True, precision = 1)

```

```
# Use dot file to create a graph
#(graph) = pydot.graph_from_dot_file('tree.dot')
# Write graph to a png file
#graph.write_png('tree.png')

#rfi.estimators_[5]

feature_list = list(sampl.columns)
[importance = list(rfi.feature_importances_)]
# List of tuples with variable and importance
feature_importances_ = [(feature, round(importance, 2)) for feature, importance in zip(feature_list, imp
ortances)]
feature_importances_ = sorted(feature_importances_, key=lambda x: x[1], reverse=True)
```

```
feature_importances = sorted(feature_importances, key = lambda x: x[1], reverse = True)
# Print out the feature and importance
print(Variables, (130) importance) # for pair in feature_importances):

Variable_ Team_1_R Importance: 0.07
Variable_ Team_1_KKR Importance: 0.06
Variable_ Team_1_KKP Importance: 0.06
Variable_ Team_1_SRH Importance: 0.05
Variable_ Team_2_CSK Importance: 0.05
Variable_ Team_2_IC Importance: 0.05
Variable_ Team_2_MI Importance: 0.05
Variable_ Team_2_RCB Importance: 0.05
Variable_ Team_2_RR Importance: 0.05
```

Variable:	winner	Importance:	0.04
Variable:	Team_1_CSK	Importance:	0.04
Variable:	Team_1_DRC	Importance:	0.04
Variable:	Team_1_MD	Importance:	0.04
Variable:	Team_1_RCB	Importance:	0.04
Variable:	Team_2_KKR	Importance:	0.04
Variable:	Team_2_RKIP	Importance:	0.03
Variable:	Team_2_SRH	Importance:	0.03
Variable:	cosss_won_CS	Importance:	0.03
Variable:	cosss_won_MI	Importance:	0.03
Variable:	cosss_won_RCB	Importance:	0.03
Variable:	cosss_won_SRH	Importance:	0.03
Variable:	cosss_won_CSK	Importance:	0.02
Variable:	cosss_won_DRC	Importance:	0.02

```
Variable: toss_won_XJXP Importance: 0.02
Variable: toss_won_WA Importance: 0.52
Variable: toss_won_dat Importance: 0.02

from sklearn.model_selection import RandomizedSearchCV
# Number of trees in random forest
n_estimators = [int(x) for x in np.linspace(start = 200, stop = 2000, num = 10)]
# Number of features to consider at every split
max_features = ['auto', 'sqrt']
# Maximum number of levels in tree
max_depth = [int(x) for x in np.linspace(10, 110, num = 11)]
max_depth.append(None)
# Minimum number of samples required to split a node
```

```
min_samples_split = [2, 5, 10]
# Minimum number of samples required at each leaf node
min_samples_leaf = [1, 2, 4]
# Method of selecting samples for training each tree
bootstrap = (True, False)
# Create the random grid
random_grid = {'n_estimators': n_estimators,
               'max_features': max_features,
               'max_depth': max_depth,
               'min_samples_split': min_samples_split,
               'min_samples_leaf': min_samples_leaf,
               'bootstrap': bootstrap}

print(random_grid)
```

```
{ 'n_estimators': [200, 400, 600, 800, 1000, 1200, 1400, 1600, 1800, 2000], 'max_features': ['auto', 'sqrt'], 'max_depth': [10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, None], 'min_samples_split': [2, 5, 10], 'min_samples_leaf': [1, 2, 4], 'bootstrap': [True, False]}
```


[84]: # Use the random seed to search for best hyperparameters # First create the base model to tune rff = RandomForestClassifier() # Random search of parameters using 3 fold cross validation, # search across 100 different combinations, and use all available cores rf_random = RandomizedSearchCV(estimator = rff, param_distributions = random_grid, cv=3, n_jobs=-1, verbose=2, random_state=42, n_iter = 100, cv = 3, verbose=2, random_state=42, n_jobs = -1) # Fit the random search model rf_random.fit(X_train, y_train) # Fitting 3 folds for each of 100 candidates, totalling 300 fits [Parallel(n_jobs=-1)]: Using backend LokyBackend with 8 concurrent workers. [Parallel(n_jobs=-1)]: Done 25 tasks | elapsed: 9.6s [Parallel(n_jobs=-1)]: Done 146 tasks | elapsed: 45.5s [Parallel(n_jobs=-1)]: Done 300 out of 300 | elapsed: 1.7min finished C:\ProgramData\Anaconda3\lib\site-packages\sklearn\model_selection_search.py:814: DeprecationWarning: The default of the 'iid' parameter will change from True to False in version 0.22 and will be removed in 0.24. This will change numeric results when test-set sizes are unequal. Out[84]: RandomizedSearchCV(cv=3, error_score='raise-deprecating', estimator=RandomForestClassifier(bootstrap=True, class_weight=None, criterion='gini', max_depth=None, max_features='auto', max_leaf_nodes=None, min_impurity_decrease=0.0, min_impurity_split=None, min_samples_leaf=1, min_samples_split=2, min_weight_fraction_leaf=0.0, n_estimators='warn', n_jobs=None, oob_score=False, param_distributions={'bootstrap': (True, False), 'max_depth': (10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, None), 'max_features': ('auto', 'sqrt'), 'min_samples_leaf': (1, 2, 4), 'min_samples_split': (2, 5, 10), 'n_estimators': (100, 1200, 1400, 1600, 1800, 2000)}, pre_dispatch='2*n_jobs', random_state=42, refit=True, return_train_score=False, scoring=None, verbose=2) In [85]: rf_random.best_params_ Out[85]: {'n_estimators': 800, 'min_samples_split': 10, 'min_samples_leaf': 4, 'max_features': 'sqrt', 'max_depth': 50, 'bootstrap': True} In [86]: score3 = rf_random.score(X_train, y_train) score4 = rf_random.score(X_test, y_test) print(score3) print(score4) 0.621951295121951 0.5725806451612904 In [87]: preds=rf_random.predict(copyy) print(preds) ['SR', 'DC', 'RCB', 'SRH', 'MI', 'DC', 'SRH', 'CSK', 'MI', 'EXP1', 'DC', 'MI', 'KSR', 'KXIP', 'MI', 'SRH', 'CSK', 'RR', 'RCB', 'MI'] In [100]: b=([1,2,3,4), tuple(b) #print(b) Out[100]: tuple In [711]: #copyy In [72]: #score = rf.score(X_train, y_train) #score2 = rf.score(X_test, y_test) #print(score2) In [73]: from sklearn.model_selection import GridSearchCV # Create the parameter grid based on the results of random search param_grid = { 'bootstrap': [True], 'max_depth': [80, 90, 100, 110], 'max_features': ['auto', 'sqrt'], 'min_samples_leaf': [3, 4, 5], 'min_samples_split': [8, 10, 12], 'n_estimators': [100, 200, 300, 1000] } # Create a based model rff = RandomForestClassifier() # Initialize the grid search model grid_search = GridSearchCV(estimator = rff, param_grid = param_grid, cv = 3, n_jobs = -1, verbose = 2) grid_search.fit(X_train, y_train) # Fitting 3 folds for each of 288 candidates, totalling 864 fits [Parallel(n_jobs=-1)]: Using backend LokyBackend with 8 concurrent workers. [Parallel(n_jobs=-1)]: Done 25 tasks | elapsed: 2.7s [Parallel(n_jobs=-1)]: Done 146 tasks | elapsed: 16.6s [Parallel(n_jobs=-1)]: Done 349 tasks | elapsed: 43.5s [Parallel(n_jobs=-1)]: Done 632 tasks | elapsed: 1.3min [Parallel(n_jobs=-1)]: Done 864 out of 864 | elapsed: 6.6min finished C:\ProgramData\Anaconda3\lib\site-packages\sklearn\model_selection_search.py:814: DeprecationWarning: The default of the 'iid' parameter will change from True to False in version 0.22 and will be removed in 0.24. This will change numeric results when test-set sizes are unequal. Out[73]: GridSearchCV(cv=3, error_score='raise-deprecating', estimator=RandomForestClassifier(bootstrap=True, class_weight=None, criterion='gini', max_depth=None, max_features='auto', max_leaf_nodes=None, min_impurity_decrease=0.0, min_impurity_split=None, min_samples_leaf=1, min_samples_split=2, min_weight_fraction_leaf=0.0, n_estimators='warn', n_jobs=None, oob_score=False, param_distributions={'bootstrap': [True], 'max_features': [80, 90, 100, 110], 'max_depth': [80, 90, 100, 110], 'max_features': ['auto', 'sqrt'], 'min_samples_leaf': [3, 4, 5], 'min_samples_split': [8, 10, 12], 'n_estimators': [100, 200, 300, 1000]}, pre_dispatch='2*n_jobs', refit=True, return_train_score=False, scoring=None, verbose=2) In [74]: grid_search.best_params_ Out[74]: {'bootstrap': True, 'max_depth': 110, 'max_features': 5, 'min_samples_split': 5, 'min_samples_leaf': 5, 'n_estimators': 200} In [75]: score6 = grid_search.score(X_train, y_train) score6 = grid_search.score(X_test, y_test) print(score) print(score2) 0.686475409836056 0.6097560975609756 In [76]: preds=grid_search.predict(copyy) print(preds) ['SRH', 'DC', 'RCB', 'SRH', 'MI', 'DC', 'SRH', 'CSK', 'RR', 'KSR', 'DC', 'MI', 'KSR', 'KXIP', 'MI', 'RCB', 'SRH', 'MI', 'RCB', 'MI'] In []: In []: In []: In [1329]: pd.set_option('display.max_columns', None) In [1351]: sample123=old_matches.drop(['id','city','season','date','result','di_applied','win_by_runs','win_by_wickets'],'axis=1',inplace=True) sample123 Out[1351]: team1 team2 toss_winner toss_decision winner venue 0 Sunrisers Hyderabad Royal Challengers Bangalore Royal Challengers Bangalore field Sunrisers Hyderabad Rajiv Gandhi International Stadium, Uppal 1 Mumbai Indians Rising Pune Super giant Rising Pune Super giant field Rising Pune Super giant Maharashtra Cricket Association Stadium 2 Gujarat Lions Kolkata Knight Riders Kolkata Knight Riders field Kolkata Knight Riders Saurashtra Cricket Association Stadium 3 Royal Challengers Bangalore Delhi Daredevils Royal Challengers Bangalore bat Royal Challengers Bangalore M Chinnaswamy Stadium 778 Rajasthan Royals Delhi Capitals Rajasthan Royals field Delhi Capitals Sharjah Cricket Stadium 779 Kings XI Punjab Kolkata Knight Riders Kolkata Knight Riders bat Kolkata Knight Riders Sheikh Zayed Stadium 780 Chennai Super Kings Royal Challengers Bangalore Royal Challengers Bangalore bat Royal Challengers Bangalore Dubai International Cricket Stadium 781 Sunrisers Hyderabad Rajasthan Royals Sunrisers Hyderabad bat Rajasthan Royals Dubai International Cricket Stadium 782 Mumbai Indians Delhi Capitals Delhi Capitals bat Mumbai Indians Sheikh Zayed Stadium 783 rows = 6 columns In [1352]: sample123=sample123[['venue']] (sample123[['venue']]=='Sharjah Cricket Stadium') (sample123[['venue']]=='Dubai International Cricket Stadium') sample1 Out[1352]: team1 team2 toss_winner toss_decision winner venue 457 Kolkata Knight Riders Mumbai Indians Kolkata Knight Riders bat Kolkata Knight Riders Sheikh Zayed Stadium 458 Delhi Daredevils Royal Challengers Bangalore Royal Challengers Bangalore field Royal Challengers Bangalore Sharjah Cricket Stadium 459 Chennai Super Kings Kings XI Punjab Chennai Super Kings bat Kings XI Punjab Sharjah Cricket Stadium 460 Sunrisers Hyderabad Rajasthan Royals Rajasthan Royals field Rajasthan Royals Sheikh Zayed Stadium 461 Mumbai Indians Royal Challengers Bangalore Royal Challengers Bangalore field Royal Challengers Bangalore Dubai International Cricket Stadium 462 Kolkata Knight Riders Delhi Daredevils Kolkata Knight Riders bat Delhi Daredevils Dubai International Cricket Stadium 463 Rajasthan Royals Kings XI Punjab Kings XI Punjab field Kings XI Punjab Sharjah Cricket Stadium 464 Chennai Super Kings Delhi Daredevils Chennai Super Kings bat Chennai Super Kings Sheikh Zayed Stadium 465 Kings XI Punjab Sunrisers Hyderabad Sunrisers Hyderabad field Kings XI Punjab Sharjah Cricket Stadium 466 Chennai Super Kings Rajasthan Royals Rajasthan Royals field Chennai Super Kings Dubai International Cricket Stadium 467 Kolkata Knight Riders Royal Challengers Bangalore Royal Challengers Bangalore field Kolkata Knight Riders Sharjah Cricket Stadium 468 Sunrisers Hyderabad Delhi Daredevils Sunrisers Hyderabad bat Sunrisers Hyderabad Dubai International Cricket Stadium 469 Mumbai Indians Chennai Super Kings Mumbai Indians bat Chennai Super Kings Dubai International Cricket Stadium 470 Royal Challengers Bangalore Rajasthan Royals Rajasthan Royals field Rajasthan Royals Sheikh Zayed Stadium 471 Kings XI Punjab Kolkata Knight Riders Kolkata Knight Riders field Kings XI Punjab Sharjah Cricket Stadium 472 Mumbai Indians Delhi Daredevils Mumbai Indians bat Delhi Daredevils Dubai International Cricket Stadium 473 Sunrisers Hyderabad Chennai Super Kings Sunrisers Hyderabad bat Chennai Super Kings Sharjah Cricket Stadium 474 Royal Challengers Bangalore Kings XI Punjab Kings XI Punjab field Kings XI Punjab Dubai International Cricket Stadium 475 Rajasthan Royals Kolkata Knight Riders Rajasthan Royals bat Rajasthan Royals Sheikh Zayed Stadium 476 Sunrisers Hyderabad Mumbai Indians Mumbai Indians field Sunrisers Hyderabad Dubai International Cricket Stadium 477 Mumbai Indians Chennai Super Kings Chennai Super Kings field Chennai Super Kings Sheikh Zayed Stadium 478 Delhi Capitals Kings XI Punjab Kings XI Punjab field Delhi Capitals Dubai International Cricket Stadium 479 Sunrisers Hyderabad Royal Challengers Bangalore Sunrisers Hyderabad field Royal Challengers Bangalore Dubai International Cricket Stadium 480 Rajasthan Royals Chennai Super Kings Chennai Super Kings field Rajasthan Royals Sharjah Cricket Stadium 481 Kolkata Knight Riders Mumbai Indians Kolkata Knight Riders field Kings XI Punjab Dubai International Cricket Stadium 482 Chennai Super Kings Delhi Capitals Chennai Super Kings field Delhi Capitals Dubai International Cricket Stadium 483 Sunrisers Hyderabad Kolkata Knight Riders Sunrisers Hyderabad bat Kolkata Knight Riders Sheikh Zayed Stadium 484 Kings XI Punjab Rajasthan Royals Rajasthan Royals field Rajasthan Royals Sharjah Cricket Stadium 485 Royal Challengers Bangalore Mumbai Indians Mumbai Indians field Royal Challengers Bangalore Dubai International Cricket Stadium 486 Delhi Capitals Sunrisers Hyderabad Delhi Capitals field Sunrisers Hyderabad Sheikh Zayed Stadium 487 Rajasthan Royals Kolkata Knight Riders Rajasthan Royals field Kolkata Knight Riders Dubai International Cricket Stadium 488 Kings XI Punjab Mumbai Indians Kings XI Punjab field Mumbai Indians Sheikh Zayed Stadium 489 Chennai Super Kings Sunrisers Hyderabad Sunrisers Hyderabad bat Sunrisers Hyderabad Dubai International Cricket Stadium 490 Royal Challengers Bangalore Rajasthan Royals Rajasthan Royals bat Royal Challengers Bangalore Dubai International Cricket Stadium 491 Delhi Capitals Kolkata Knight Riders Kolkata Knight Riders field Kolkata Knight Riders Dubai International Cricket Stadium 492 Kings XI Punjab Chennai Super Kings Kings XI Punjab bat Chennai Super Kings Dubai International Cricket Stadium 493 Royal Challengers Bangalore Delhi Capitals Royal Challengers Bangalore field Delhi Capitals Dubai International Cricket Stadium 494 Mumbai Indians Rajasthan Royals Mumbai Indians bat Mumbai Indians Sheikh Zayed Stadium 495 Kolkata Knight Riders Chennai Super Kings Kolkata Knight Riders bat Kolkata Knight Riders Dubai International Cricket Stadium 496 Sunrisers Hyderabad Kings XI Punjab Sunrisers Hyderabad bat Sunrisers Hyderabad Sharjah Cricket Stadium 497 Kings XI Punjab Royal Challengers Bangalore Royal Challengers Bangalore bat Royal Challengers Bangalore Dubai International Cricket Stadium 498 Chennai Super Kings Rajasthan Royals Sunrisers Hyderabad bat Rajasthan Royals Dubai International Cricket Stadium 499 Mumbai Indians Delhi Capitals Delhi Capitals bat Mumbai Indians Sheikh Zayed Stadium In [1353]: len(sample13) Out[1353]: 47 In [1354]: # or (sample123[['venue']]=='Sharjah Cricket Stadium') In [1355]: for (sample123[['venue']]=='Dubai International Cricket Stadium') In [1356]: x=['Sunrisers Hyderabad', 'Mumbai Indians', 'Gujarat Lions', 'Rising Pune Super giant', 'Royal Challengers Bangalore', 'Kolkata Knight Riders', 'Delhi Daredevils', 'Kings XI Punjab', 'Chennai Super Kings', 'Rajasthan Royals', 'Deccan Chargers', 'Mochi Tuskers Kerala', 'Pune Warriors', 'Rising Pune Super giants', 'Delhi Capitals', 'Sheikh Zayed Stadium', 'Dubai International Cricket Stadium', 'Sharjah Cricket Stadium'] y = [1,2,3,4,5,6,7,8,9,10,11,12,13,14] y = ['SRH','MI','GL','RR','RCB','KKR','DC','KXIP','CSK','RR','SRH','KTK','PW','RPS','DC','SKZ','dubai','Sharz'] sample13.replace(x,y,inplace = True) sample13 C:\ProgramData\Anaconda3\lib\site-packages\pandas\core\frame.py:4263: SettingWithCopyWarning: A value is trying to be set on a copy of a slice from a DataFrame See the caveats in the documentation: http://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy Out[1356]: team1 team2 toss_winner toss_decision winner venue 457 KKR MI KKR bat KKR SKZ 458 DC RCB RCB field RCB Sharz 459 CSK KXIP CSK bat KXIP SKZ 460 SRH RR RR field RR SKZ 461 MI RCB RCB field RCB dubai 462 KKR DC KKR bat DC dubai 463 RR KXIP KXIP field KXIP Sharz 464 CSK DC CSK bat CSK SKZ 465 KXIP SRH SRH field KXIP Sharz 466 CSK RR RR field CSK dubai 467 KKR RCB RCB field KKR Sharz 468 SRH DC SRH bat SRH dubai 469 MI CSK MI bat CSK dubai 470 RCB RR RR field RR SKZ 471 KXIP KKR KKR field KXIP SKZ 472 MI DC MI bat DC Sharz 473 SRH CSK SRH bat CSK Sharz 474 RCB KXIP KXIP field KXIP dubai 475 RR KKR RR bat RR SKZ 476 SRH MI MI field SRH dubai 477 MI CSK CSK field CSK SKZ 478 SRH DC SRH field RCB dubai 479 RR CSK CSK field RR Sharz 480 KKR MI KKR field MI SKZ 481 KXIP RCB RCB field KXIP dubai 482 CSK DC CSK field DC dubai 483 SRH KKR SRH bat KKR SKZ 484 KXIP RR RR field RR Sharz 485 RCB MI MI field RCB dubai 486 RCB SRH DC field SRH SKZ 487 RR KKR RR field KKR dubai 488 CSK SRH SRH bat SRH dubai 489 MI CSK MI bat CSK dubai 490 RCB RR RR field RR SKZ 491 KXIP KKR KKR field KXIP SKZ 492 MI DC MI bat DC Sharz 493 SRH CSK SRH bat CSK Sharz 494 RCB KXIP KXIP field KXIP dubai 495 RR KKR RR bat RR SKZ 496 SRH MI MI field SRH dubai 497 MI CSK CSK field CSK SKZ 498 SRH RCB SRH field RCB dubai 499 RR CSK CSK field RR Sharz 500 KKR MI KKR field MI SKZ 501 KXIP RCB RCB field KXIP dubai 502 CSK DC CSK field DC dubai 503 SRH KKR SRH bat KKR SKZ 504 KXIP RR RR field RR Sharz 505 RCB MI MI field RCB dubai 506 RCB SRH DC field SRH SKZ 507 RR KKR RR field KKR dubai 508 CSK SRH SRH bat SRH dubai 509 MI CSK MI bat CSK dubai 510 RCB RR RR field RR SKZ 511 KXIP KKR KKR field KXIP SKZ 512 MI DC MI bat DC Sharz 513 SRH CSK SRH bat CSK Sharz 514 RCB KXIP KXIP field KXIP dubai 515 RR KKR RR bat RR SKZ 516 SRH MI MI field SRH dubai 517 MI CSK CSK field CSK SKZ 518 SRH RCB SRH field RCB dubai 519 RR CSK CSK field RR Sharz 520 KKR MI KKR field MI SKZ 521 KXIP RCB RCB field KXIP dubai 522 CSK DC CSK field DC dubai 523 SRH KKR SRH bat KKR SKZ 524 KXIP RR RR field RR Sharz 525 RCB MI MI field RCB dubai 526 RCB SRH DC field SRH SKZ 527 RR KKR RR field KKR dubai 528 CSK SRH SRH bat SRH dubai 529 MI CSK MI bat CSK dubai 530 RCB RR RR field RR SKZ 531 KXIP KKR KKR field KXIP SKZ 532 MI DC MI bat DC Sharz 533 SRH CSK SRH bat CSK Sharz 534 RCB KXIP KXIP field KXIP dubai 535 RR KKR RR bat RR SKZ 536 SRH MI MI field SRH dubai 537 MI CSK CSK field CSK SKZ 538 SRH RCB SRH field RCB dubai 539 RR CSK CSK field RR Sharz 540 KKR MI KKR field MI SKZ 541 KXIP RCB RCB field KXIP dubai 542 CSK DC CSK field DC dubai 543 SRH KKR SRH bat KKR SKZ 544 KXIP RR RR field RR Sharz 545 RCB MI MI field RCB dubai 546 RCB SRH DC field SRH SKZ 547 RR KKR RR field KKR dubai 548 CSK SRH SRH bat SRH dubai 549 MI CSK MI bat CSK dubai 550 RCB RR RR field RR SKZ 551 KXIP KKR KKR field KXIP SKZ 552 MI DC MI bat DC Sharz 553 SRH CSK SRH bat CSK Sharz 554 RCB KXIP KXIP field KXIP dubai 555 RR KKR RR bat RR SKZ 556 SRH MI MI field SRH dubai 557 MI CSK CSK field CSK SKZ 558 SRH RCB SRH field RCB dubai 559 RR CSK CSK field RR Sharz 560 KKR MI KKR field MI SKZ 561 KXIP RCB RCB field KXIP dubai 562 CSK DC CSK field DC dubai 563 SRH KKR SRH bat KKR SKZ 564 KXIP RR RR field RR Sharz 565 RCB MI MI field RCB dubai 566 RCB SRH DC field SRH SKZ 567 RR KKR RR field KKR dubai 568 CSK SRH SRH bat SRH dubai 569 MI CSK MI bat CSK dubai 570 RCB RR RR field RR SKZ 571 KXIP KKR KKR field KXIP SKZ 572 MI DC MI bat DC Sharz 573 SRH CSK SRH bat CSK Sharz 574 RCB KXIP KXIP field KXIP dubai 575 RR KKR RR bat RR SKZ 576 SRH MI MI field SRH dubai 577 MI CSK CSK field CSK SKZ 578 SRH RCB SRH field RCB dubai 579 RR CSK CSK field RR Sharz 580 KKR MI KKR field MI SKZ 581 KXIP RCB RCB field KXIP dubai 582 CSK DC CSK field DC dubai 583 SRH KKR SRH bat KKR SKZ 584 KXIP RR RR field RR Sharz 585 RCB MI MI field RCB dubai 586 RCB SRH DC field SRH SKZ 587 RR KKR RR field KKR dubai 588 CSK SRH SRH bat SRH dubai 589 MI CSK MI bat CSK dubai 590 RCB RR RR field RR SKZ 591 KXIP KKR KKR field KXIP SKZ 592 MI DC MI bat DC Sharz 593 SRH CSK SRH bat CSK Sharz 594 RCB KXIP KXIP field KXIP dubai 595 RR KKR RR bat RR SKZ 596 SRH MI MI field SRH dubai 597 MI CSK CSK field CSK SKZ 598 SRH RCB SRH field RCB dubai 599 RR CSK CSK field RR Sharz 600 KKR MI KKR field MI SKZ 601 KXIP RCB RCB field KXIP dubai 602 CSK DC CSK field DC dubai 603 SRH KKR SRH bat KKR SKZ 604 KXIP RR RR field RR Sharz 605 RCB MI MI field RCB dubai 606 RCB SRH DC field SRH SKZ 607 RR KKR RR field KKR dubai 608 CSK SRH SRH bat SRH dubai 609 MI CSK MI bat CSK dubai 610 RCB RR RR field RR SKZ 611 KXIP KKR KKR field KXIP SKZ 612 MI DC MI bat DC Sharz 613 SRH CSK SRH bat CSK Sharz 614 RCB KXIP KXIP field KXIP dubai 615 RR KKR RR bat RR SKZ 616 SRH MI MI field SRH dubai 617 MI CSK CSK field CSK SKZ 618 SRH RCB SRH field RCB dubai 619 RR CSK CSK field RR Sharz 620 KKR MI KKR field MI SKZ 621 KXIP RCB RCB field KXIP dubai 622 CSK DC CSK field DC dubai 623 SRH KKR SRH bat KKR SKZ 624 KXIP RR RR field RR Sharz 625 RCB MI MI field RCB dubai 626 RCB SRH DC field SRH SKZ 627 RR KKR RR field KKR dubai 628 CSK SRH SRH bat SRH dubai 629 MI CSK MI bat CSK dubai 630 RCB RR RR field RR SKZ 631 KXIP KKR KKR field KXIP SKZ 632 MI DC MI bat DC Sharz 633 SRH CSK SRH bat CSK Sharz 634 RCB KXIP KXIP field KXIP dubai 635 RR KKR RR bat RR SKZ 636 SRH MI MI field SRH dubai 637 MI CSK CSK field CSK SKZ 638 SRH RCB SRH field RCB dubai 639 RR CSK CSK field RR Sharz 640 KKR MI KKR field MI SKZ 641 KXIP RCB RCB field KXIP dubai 642 CSK DC CSK field DC dubai 643 SRH KKR SRH bat KKR SKZ 644 KXIP RR RR field RR Sharz 645 RCB MI MI field RCB dubai 646 RCB SRH DC field SRH SKZ 647 RR KKR RR field KKR dubai 648 CSK SRH SRH bat SRH dubai 649 MI CSK MI bat CSK dubai 650 RCB RR RR field RR SKZ 651 KXIP KKR KKR field KXIP SKZ 652 MI DC MI bat DC Sharz 653 SRH CSK SRH bat CSK Sharz 654 RCB KXIP KXIP field KXIP dubai 655 RR KKR RR bat RR SKZ 656 SRH MI MI field SRH dubai 657 MI CSK CSK field CSK SKZ 658 SRH RCB SRH field RCB dubai 659 RR CSK CSK field RR Sharz 660 KKR MI KKR field MI SKZ 661 KXIP RCB RCB field KXIP dubai 662 CSK DC CSK field DC dubai 663 SRH KKR SRH bat KKR SKZ 664 KXIP RR RR field RR Sharz 665 RCB MI MI field RCB dubai 666 RCB SRH DC field SRH SKZ 667 RR KKR RR field KKR dubai 668 CSK SRH SRH bat SRH dubai 669 MI CSK MI bat CSK dubai 670 RCB RR RR field RR SKZ 671 KXIP KKR KKR field KXIP SKZ 672 MI DC MI bat DC Sharz 673 SRH CSK SRH bat CSK Sharz 674 RCB KXIP KXIP field KXIP dubai 675 RR KKR RR bat RR SKZ 676 SRH MI MI field SRH dubai 677 MI CSK CSK field CSK SKZ 678 SRH RCB SRH field RCB dubai 679 RR CSK CSK field RR Sharz 680 KKR MI KKR field MI SKZ 681 KXIP RCB RCB field KXIP dubai 682 CSK DC CSK field DC dubai 683 SRH KKR SRH bat KKR SKZ 684 KXIP RR RR field RR Sharz 685 RCB MI MI field RCB dubai 686 RCB SRH DC field SRH SKZ 687 RR KKR RR field KKR dubai 688 CSK SRH SRH bat SRH dubai 689 MI CSK MI bat CSK dubai 690 RCB RR RR field RR SKZ 691 KXIP KKR KKR field KXIP SKZ 692 MI DC MI bat DC Sharz 693 SRH CSK SRH bat CSK Sharz 694 RCB KXIP KXIP field KXIP dubai 695 RR KKR RR bat RR SKZ 696 SRH MI MI field SRH dubai 697 MI CSK CSK field CSK SKZ 698 SRH RCB SRH field RCB dubai 699 RR CSK CSK field RR Sharz 700 KKR MI KKR field MI SKZ 701 KXIP RCB RCB field KXIP dubai 702 CSK DC CSK field DC dubai 703 SRH KKR SRH bat KKR SKZ 704 KXIP RR RR field RR Sharz 705 RCB MI MI field RCB dubai 706 RCB SRH DC field SRH SKZ 707 RR KKR RR field KKR dubai 708 CSK SRH SRH bat SRH dubai 709 MI CSK MI bat CSK dubai 710 RCB RR RR field RR SKZ 711 KXIP KKR KKR field KXIP SKZ 712 MI DC MI bat DC Sharz 713 SRH CSK SRH bat CSK Sharz 714 RCB KXIP KXIP field KXIP dubai 715 RR KKR RR bat RR SKZ 716 SRH MI MI field SRH dubai 717 MI CSK CSK field CSK SKZ 718 SRH RCB SRH field RCB dubai 719 RR CSK CSK field RR Sharz 720 KKR MI KKR field MI SKZ 721 KXIP RCB RCB field KXIP dubai 722 CSK DC CSK field DC dubai 723 SRH KKR SRH bat KKR SKZ 724 KXIP RR RR field RR Sharz 725 RCB MI MI field RCB dubai 726 RCB SRH DC field SRH SKZ 727 RR KKR RR field KKR dubai 728 CSK SRH SRH bat SRH dubai 729 MI CSK MI bat CSK dubai 730 RCB RR RR field RR SKZ 731 KXIP KKR KKR field KXIP SKZ 732 MI DC MI bat DC Sharz 733 SRH CSK SRH bat CSK Sharz 734 RCB KXIP KXIP field KXIP dubai 735 RR KKR RR bat RR SKZ 736 SRH MI MI field SRH dubai 737 MI CSK CSK field CSK SKZ 738 SRH RCB SRH field RCB dubai 739 RR CSK CSK field RR Sharz 740 KKR MI KKR field MI SKZ 741 KXIP RCB RCB field KXIP dubai 742 CSK DC CSK field DC dubai 743 SRH KKR SRH bat KKR SKZ 744 KXIP RR RR field RR Sharz 745 RCB MI MI field RCB dubai 746 RCB SRH DC field SRH SKZ 747 RR KKR RR field KKR dubai 748 CSK SRH SRH bat SRH dubai 749 MI CSK MI bat CSK dubai 750 RCB RR RR field RR SKZ 751 KXIP KKR KKR field KXIP SKZ 752 MI DC MI bat DC Sharz 753 SRH CSK SRH bat CSK Sharz 754 RCB KXIP KXIP field KXIP dubai 755 RR KKR RR bat RR SKZ 756 SRH MI MI field SRH dubai 757 MI CSK CSK field CSK SKZ 758 SRH RCB SRH field RCB dubai 759 RR CSK CSK field RR Sharz 760 KKR MI KKR field MI SKZ 761 KXIP RCB RCB field KXIP dubai 762 CSK DC CSK field DC dubai 763 SRH KKR SRH bat KKR SKZ 764 KXIP RR RR field RR Sharz 765 RCB MI MI field RCB dubai 766 RCB SRH DC field SRH SKZ 767 RR KKR RR field KKR dubai 768 CSK SRH SRH bat SRH dubai 769 MI CSK MI bat CSK dubai 770 RCB RR RR field RR SKZ 771 KXIP KKR KKR field KXIP SKZ 772 MI DC MI bat DC Sharz 773 SRH CSK SRH bat CSK Sharz 774 RCB KXIP KXIP field KXIP dubai 775 RR KKR RR bat RR SKZ 776 SRH MI MI field SRH dubai 777 MI CSK CSK field CSK SKZ 778 SRH RCB SRH field RCB dubai 779 RR CSK CSK field RR Sharz 780 KKR MI KKR field MI SKZ 781 KXIP RCB RCB field KXIP dubai 782 CSK DC CSK field DC dubai 783 SRH KKR SRH bat KKR SKZ 784 KXIP RR RR field RR Sharz 785 RCB MI MI field RCB dubai 786 RCB SRH DC field SRH SKZ 787 RR KKR RR field KKR dubai 788 CSK SRH SRH bat SRH dubai 789 MI CSK MI bat CSK dubai 790 RCB RR RR field RR SKZ 791 KXIP KKR KKR field KXIP SKZ 792 MI DC MI bat DC Sharz 793 SRH CSK SRH bat CSK Sharz 794 RCB KXIP KXIP field KXIP dubai 795 RR KKR RR bat RR SKZ 796 SRH MI MI field SRH dubai 797 MI CSK CSK field CSK SKZ 798 SRH RCB SRH field RCB dubai 799 RR CSK CSK field RR Sharz 800 KKR MI KKR field MI SKZ 801 KXIP RCB RCB field KXIP dubai 802 CSK DC CSK field DC dubai 803 SRH KKR SRH bat KKR SKZ 804 KXIP RR RR field RR Sharz 805 RCB MI MI field RCB dubai 806 RCB SRH DC field SRH SKZ 807 RR KKR RR field KKR dubai 808 CSK SRH SRH bat SRH dubai 809 MI CSK MI bat CSK dubai 810 RCB RR RR field RR SKZ 811 KXIP KKR KKR field KXIP SKZ 812 MI DC MI bat DC Sharz 813 SRH CSK SRH bat CSK Sharz 814 RCB KXIP KXIP field KXIP dubai 815 RR KKR RR bat RR SKZ 816 SRH MI MI field SRH dubai 817 MI CSK CSK field CSK SKZ 818 SRH RCB SRH field RCB dubai 819 RR CSK CSK field RR Sharz 820 KKR MI KKR field MI SKZ 821 KXIP RCB RCB field KXIP dubai 822 CSK DC CSK field DC dubai 823 SRH KKR SRH bat KKR SKZ 824 KXIP RR RR field RR Sharz 825 RCB MI MI field RCB dubai 826 RCB SRH DC field SRH SKZ 827 RR KKR RR field KKR dubai 828 CSK SRH SRH bat SRH dubai 829 MI CSK MI bat CSK dubai 830 RCB RR RR field RR SKZ 831 KXIP KKR KKR field KXIP SKZ 832 MI DC MI bat DC Sharz 833 SRH CSK SRH bat CSK Sharz 834 RCB KXIP KXIP field KXIP dubai 835 RR KKR RR bat RR SKZ 836 SRH MI MI field SRH dubai 837 MI CSK CSK field CSK SKZ 838 SRH RCB SRH field RCB dubai 839 RR CSK CSK field RR Sharz 840 KKR MI KKR field MI SKZ 841 KXIP RCB RCB field KXIP dubai 842 CSK DC CSK field DC dubai 843 SRH KKR SRH bat KKR SKZ 844 KXIP RR RR field RR Sharz 845 RCB MI MI field RCB dubai 846 RCB SRH DC field SRH SKZ 847 RR KKR RR field KKR dubai 848 CSK SRH SRH bat SRH dubai 849 MI CSK MI bat CSK dubai 850 RCB RR RR field RR SKZ 851 KXIP KKR KKR field KXIP SKZ 852 MI DC MI bat DC Sharz 853 SRH CSK SRH bat CSK Sharz 854 RCB KXIP KXIP field KXIP dubai 855 RR KKR RR bat RR SKZ 856 SRH MI MI field SRH dubai 857 MI CSK CSK field CSK SKZ 858 SRH RCB SRH field RCB dubai 859 RR CSK CSK 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CSK SRH bat CSK Sharz 894 RCB KXIP KXIP field KXIP dubai 895 RR KKR RR bat RR SKZ 896 SRH MI MI field SRH dubai 897 MI CSK CSK field CSK SKZ 898 SRH RCB SRH field RCB dubai 899 RR CSK CSK field RR Sharz 900 KKR MI KKR field MI SKZ 901 KXIP RCB RCB field KXIP dubai 902 CSK DC CSK field DC dubai 903 SRH KKR SRH bat KKR SKZ 904 KXIP RR RR field RR Sharz 905 RCB MI MI field RCB dubai 906 RCB SRH DC field SRH SKZ 907 RR KKR RR field KKR dubai 908 CSK SRH SRH bat SRH dubai 909 MI CSK MI bat CSK dubai 910 RCB RR RR field RR SKZ 911 KXIP KKR KKR field KXIP SKZ 912 MI DC MI bat DC Sharz 913 SRH CSK SRH bat CSK Sharz 914 RCB KXIP KXIP field KXIP dubai 915 RR KKR RR bat RR SKZ 916 SRH MI MI field SRH dubai 917 MI CSK CSK field CSK SKZ 918 SRH RCB SRH field RCB dubai 919 RR CSK CSK field RR Sharz 920 KKR MI KKR field MI SKZ 921 KXIP RCB RCB field KXIP dubai 922 CSK DC CSK field DC dubai 923 SRH KKR SRH bat KKR SKZ 924 KXIP RR RR field RR Sharz 925 RCB MI MI field RCB dubai 926 RCB SRH DC field SRH 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field MI SKZ 961 KXIP RCB RCB field KXIP dubai 962 CSK DC CSK field DC dubai 963 SRH KKR SRH bat KKR SKZ 964 KXIP RR RR field RR Sharz 965 RCB MI MI field RCB dubai 966 RCB SRH DC field SRH SKZ 967 RR KKR RR field KKR dubai 968 CSK SRH SRH bat SRH dubai 969 MI CSK MI bat CSK dubai 970 RCB RR RR field RR SKZ 971 KXIP KKR KKR field KXIP SKZ 972 MI DC MI bat DC Sharz 973 SRH CSK SRH bat CSK Sharz 974 RCB KXIP KXIP field KXIP dubai 975 RR KKR RR bat RR SKZ 976 SRH MI MI field SRH dubai 977 MI CSK CSK field CSK SKZ 978 SRH RCB SRH field RCB dubai 979 RR CSK CSK field RR Sharz 980 KKR MI KKR field MI SKZ 981 KXIP RCB RCB field KXIP dubai 982 CSK DC CSK field DC dubai 983 SRH KKR SRH bat KKR SKZ 984 KXIP RR RR field RR Sharz 985 RCB MI MI field RCB dubai 986 RCB SRH DC field SRH SKZ 987 RR KKR RR field KKR dubai 988 CSK SRH SRH bat SRH dubai 989 MI CSK MI bat CSK dubai 990 RCB RR RR field RR SKZ 991 KXIP KKR KKR field KXIP SKZ 992 MI DC MI bat DC Sharz 993 SRH CSK SRH bat CSK Sharz 994 RCB KXIP KXIP field KXIP dubai 995 RR KKR RR bat RR SKZ 996 SRH MI MI field SRH dubai 997 MI CSK CSK field CSK SKZ 998 SRH RCB SRH field RCB dubai 999 RR CSK CSK field RR Sharz In [1360]: from sklearn.model_selection import train_test_split from sklearn.metrics import mean_squared_error from sklearn.datasets import make_classification In [1361]: sample3.dtypes Out[1361]: team1 object team2 object toss_winner object toss_decision object winner object venue object dtype: object In [1362]: sample3 = pd.get_dummies(sample3, prefix=['Team 1', 'Team 2', 'venue', 'toss_won', 'toss_dec'], columns=['team1', 'team2', 'venue', 'toss_winner', 'toss_decision']) sample3 Out[1362]: winner Team_1_CSK Team_1_DC Team_1_KKR Team_1_KXIP Team_1_MI Team_1_RCB Team_1_RR Team_1_SRH Team_2_CSK Team_2 457 KKR 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 458 RCB 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 459 KXIP 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 460 RR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 461 RCB 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 462 DC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 463 CSK 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 464 KKR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 465 CSK 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 466 SRH 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 469 CSK 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 1 471 KXIP 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 472 DC 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 473 CSK 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 474 KXIP 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 475 RR 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 0 476 SRH 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 477 DC 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 478 CSK 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 479 KKR 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 480 RCB 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 481 RR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 0 482 MI 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 483 CSK 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 484 KKR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 485 CSK 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 486 SRH 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 487 KKR 0 0 0 0 0 0 0 0 0

In [1404]: rf5 = RandomForestClassifier(n_estimators=20, max_depth=20, oob_score=True, class_weight='balanced', verbose=2, n_jobs=-1, random_state=12)
rf5.fit(X_train, y_train)

building tree 1 of 20
building tree 2 of 20
building tree 3 of 20
building tree 4 of 20
building tree 5 of 20
building tree 6 of 20
building tree 7 of 20
building tree 8 of 20
building tree 9 of 20
building tree 10 of 20
building tree 11 of 20
building tree 12 of 20
building tree 13 of 20building tree 14 of 20
building tree 15 of 20

building tree 16 of 20
building tree 17 of 20
building tree 18 of 20
building tree 19 of 20building tree 20 of 20

```
[Parallel(n_jobs=-1)]: Using backend ThreadingBackend with 8 concurrent workers.  
[Parallel(n_jobs=-1)]: Done 16 out of 20 | elapsed: 0.0s remaining: 0.0s  
[Parallel(n_jobs=-1)]: Done 20 out of 20 | elapsed: 0.0s finished
```

Out[1404]: RandomForestClassifier(bootstrap=True, class_weight='balanced',
criterion='gini', max_depth=20, max_features='auto',
max_leaf_nodes=None, min_impurity_decrease=0.0,
min_impurity_split=None, min_samples_leaf=1,
min_samples_split=2, min_weight_fraction_leaf=0.0,
n_estimators=20, n_jobs=-1, oob_score=True,
random_state=12, verbose=2, warm_start=False)

In [1405]: score = rf5.score(X_train, y_train)
score2 = rf5.score(X_test, y_test)
print(score)
print(score2)

```
[Parallel(n_jobs=-1)]: Using backend ThreadingBackend with 8 concurrent workers.  
[Parallel(n_jobs=-1)]: Done 16 out of 20 | elapsed: 0.0s remaining: 0.0s  
[Parallel(n_jobs=-1)]: Done 20 out of 20 | elapsed: 0.0s finished  
[Parallel(n_jobs=-1)]: Using backend ThreadingBackend with 8 concurrent workers.  
[Parallel(n_jobs=-1)]: Done 16 out of 20 | elapsed: 0.0s remaining: 0.0s  
[Parallel(n_jobs=-1)]: Done 20 out of 20 | elapsed: 0.0s finished
```

0.9797292972973
0.3

In [1406]: print(rf1.oob_score_)
0.514705823529411

In [1407]: copy4=pd.read_csv('2020 Copy4.csv')
copy4

Out[1407]:

	Team	Team2	toss_winner	toss_decision	venue
0	Royal challengers bangalore	Kolkata knight riders	RCB	bat	Sharjah
1	Sunrisers hyderabad	Chennai super kings	CSK	bat	Dubai
2	Delhi capitals	Rajasthan royals	KXIP	bat	Dubai
3	Royal challengers	Kings xi punjab	KXIP	bat	Sharjah
4	Mumbai indians	Kolkata knight riders	MI	bat	Abu dhabi
5	Rajasthan royals	Royal challengers bangalore	RR	bat	Dubai
6	Delhi capitals	Chennai super kings	CSK	bat	Sharjah
7	Sunrisers hyderabad	Kolkata knight riders	KKR	bat	Abu dhabi
8	Mumbai indians	Kings xi punjab	MI	bat	Dubai
9	Chennai super kings	Rajasthan royals	RR	bat	Abu dhabi
10	Kings xi punjab	Delhi capitals	DC	field	Dubai
11	Kolkata knight riders	Royal challengers bangalore	RCB	field	Abu dhabi
12	Rajasthan royals	Sunrisers hyderabad	SRH	field	Dubai
13	Chennai super kings	Mumbai indians	MI	field	Sharjah
14	Kolkata knight riders	Delhi capitals	DC	field	Sharjah
15	Kings xi punjab	Sunrisers hyderabad	KXIP	field	Dubai
16	Royal challengers bangalore	Chennai super kings	CSK	field	Dubai
17	Rajasthan royals	Mumbai indians	MI	field	Abu dhabi
18	Kolkata knight riders	Kings xi punjab	KKR	field	Abu dhabi
19	Sunrisers hyderabad	Delhi capitals	DC	field	Dubai
20	Mumbai indians	Royal challengers bangalore	MI	field	Abu dhabi
21	Chennai super kings	Kolkata knight riders	KKR	field	Dubai
22	Kings xi punjab	Rajasthan royals	KXIP	field	Abu dhabi
23	Delhi capitals	Mumbai indians	DC	field	Dubai
24	Royal challengers bangalore	Sunrisers hyderabad	SRH	field	Sharjah
25	Chennai super kings	Kings xi punjab	CSK	field	Abu dhabi
26	Kolkata knight riders	Rajasthan royals	KKR	field	Dubai
27	Delhi capitals	Royal challengers bangalore	RCB	field	Sharjah
28	Sunrisers hyderabad	Mumbai indians	MI	field	Sharjah

In [1408]: x=["Sunrisers hyderabad", 'Mumbai indians', 'Gujarat Lions',
'Rising Pune Supergiant', 'Royal challengers bangalore',
'Kolkata knight riders', 'Delhi Daredevils', 'Kings xi punjab',
'Chennai super kings', 'Rajasthan royals', 'Deccan Chargers',
'Yodhys Tuskers Kerala', 'Pune Warriors', 'Rising Pune Supergiants', 'Delhi capitals','Abu dhabi',
'Dubai','Sharjah','Royal challengers']
#y = [1,2,3,4,5,6,7,8,9,10,11,12,13,4,14]
y = ['SRH','MI','CSK','RR','RCB','KKR','DC','KXIP','CSK','RR','SRH','KTR','PW','RPS','DC','SRZ','dubai',
1,'Sharz','RCB']

copy4.replace(x,y,inplace = True)
copy4

Out[1408]:

	Team	Team2	toss_winner	toss_decision	venue
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0	RCB	KKR	RCB	bat	Sharz
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1	SRH	CSK	CSK	bat	dubai
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2	DC	RR	RR	bat	dubai
---	----	----	----	-----	-------

3	RCB	KXIP	KXIP	bat	Sharz
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4	MI	KXIP	MI	bat	SKZ
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5	RR	RCB	RR	bat	dubai
---	----	-----	----	-----	-------

6	DC	CSK	CSK	bat	Sharz
---	----	-----	-----	-----	-------

7	SRH	KKR	KKR	bat	SKZ
---	-----	-----	-----	-----	-----

8	MI	KXIP	MI	bat	dubai
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9	CSK	RR	RR	bat	SKZ
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10	KXIP	DC	DC	field	dubai
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11	KKR	RCB	RCB	field	SKZ
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12	RR	SRH	SRH	field	dubai
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13	CSK	MI	MI	field	Sharz
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14	KKR	DC	DC	field	SKZ
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15	KXIP	SRH	KXIP	field	dubai
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16	RCB	CSK	CSK	field	dubai
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17	RR	MI	MI	field	SKZ
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18	KKR	KXIP	KKR	field	Sharz
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19	SRH	DC	DC	field	dubai
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20	MI	RCB	MI	field	SKZ
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21	CSK	KKR	KKR	field	dubai
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22	KXIP	RR	KXIP	field	SKZ
----	------	----	------	-------	-----

23	DC	MI	DC	field	dubai
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24	RCB	SRH	SRH	field	Sharz
----	-----	-----	-----	-------	-------

25	CSK	KXIP	CSK	field	SKZ
----	-----	------	-----	-------	-----

26	KKR	RR	KKR	field	dubai
----	-----	----	-----	-------	-------

27	DC	RCB	RCB	field	SKZ
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28	SRH	MI	MI	field	Sharz
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In [1409]: sample3

Out[1409]:

	winner	Team_1_CSK	Team_1_DC	Team_1_KKR	Team_1_KXIP	Team_1_MI	Team_1_RCB	Team_1_RR	Team_1_SRH	Team_2_CSK	Team_2_DC
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457	KKR	0	0	1	0	0	0	0	0	0	0
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458	RCB	0	1	0	0	0	0	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

459	KXIP	1	0	0	0	0	0	0	0	0	0
-----	------	---	---	---	---	---	---	---	---	---	---

460	RR	0	0	0	0	0	0	0	0	1	0
-----	----	---	---	---	---	---	---	---	---	---	---

461	RCB	0	0	0	0	0	1	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

462	DC	0	0	1	0	0	0	0	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

463	KXIP	0	0	0	0	0	0	0	1	0	0
-----	------	---	---	---	---	---	---	---	---	---	---

464	CSK	1	0	0	0	0	0	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

465	KXIP	0	0	0	0	1	0	0	0	0	0
-----	------	---	---	---	---	---	---	---	---	---	---

466	CSK	1	0	0	0	0	0	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

467	KKR	0	0	1	0	0	0	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

468	SRH	0	0	0	0	0	0	0	0	1	0
-----	-----	---	---	---	---	---	---	---	---	---	---

469	CSK	0	0	0	0	0	1	0	0	0	1
-----	-----	---	---	---	---	---	---	---	---	---	---

470	RR	0	0	0	0	0	0	1	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

471	KXIP	0	0	0	0	1	0	0	0	0	0
-----	------	---	---	---	---	---	---	---	---	---	---

472	DC	0	0	0	0	0	1	0	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

473	CSK	0	0	0	0	0	0	0	0	1	1
-----	-----	---	---	---	---	---	---	---	---	---	---

474	KXIP	0	0	0	0	0	0	1	0	0	0
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475	RR	0	0	0	0	0	0	0	1	0	0
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476	SRH	0	0	0	0	0	0	0	0	1	0
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756	CSK	0	0	0	0	0	1	0	0	0	1
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757	DC	0	1	0	0	0	0	0	0	0	0
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758	RCB	0	0	0	0	0	0	0	0	1	0
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759	RR	0	0	0	0	0	0	0	1	0	1
-----	----	---	---	---	---	---	---	---	---	---	---

760	MI	0	0	0	1	0	0	0	0	0	0
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761	KXIP	0	0	0	0	1	0	0	0	0	0
-----	------	---	---	---	---	---	---	---	---	---	---

762	DC	1	0	0	0	0	0	0	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

763	KKR	0	0	0	0	0	0	0	0	1	0
-----	-----	---	---	---	---	---	---	---	---	---	---

764	RR	0	0	0	0	1	0	0	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

765	RCB	0	0	0	0	0	0	1	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

766	SRH	0	1	0	0	0	0	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

767	KKR	0	0	0	0	0	0	0	1	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

768	MI	0	0	0	0	1	0	0	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

769	SRH	1	0	0	0	0	0	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

770	RCB	0	0	0	0	0	0	1	0	0	0
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771	DC	0	1	0	0	0	0	0	0	0	0
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772	MI	0	0	0	0	0	1	0	0	0	0
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773	CSK	0	0	0	0	1	0	0	0	0	1
-----	-----	---	---	---	---	---	---	---	---	---	---

774	DC	0	0	0	0	0	0	1	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

775	MI	0	0	0	0	0	1	0	0	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

776	KKR	0	0	1	0	0	0	0	0	0	1
-----	-----	---	---	---	---	---	---	---	---	---	---

777	SRH	0	0	0	0	0	0	0	0	1	0
-----	-----	---	---	---	---	---	---	---	---	---	---

778	DC	0	0	0	0	0	0	0	1	0	0
-----	----	---	---	---	---	---	---	---	---	---	---

779	KKR	0	0	0	0	1	0	0	0	0	0
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780	RCB	1	0	0	0	0	0	0	0	0	0
-----	-----	---	---	---	---	---	---	---	---	---	---

781	RR	0	0	0	0	0	0	0	0	1	0
-----	----	---	---	---	---	---	---	---	---	---	---

782	MI	0	0	0	0	0	1	0	0	0	0
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In [1410]:

copycat = pd.get_dummies(copy4, prefix=['Team_1', 'Team_2','toss_won','toss_dec','venue'], columns=['Team', 'Team2', 'toss_winner', 'toss_decision', 'venue'])
copycat

Out[1410]:

	Team_1_CSK	Team_1_DC	Team_1_KKR	Team_1_KXIP	Team_1_MI	Team_1_RCB	Team_1_RR	Team_1_SRH	Team_2_CSK	Team_2_DC
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0	0	0	0	0	0	0	1	0	0	0
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1	0	0	0	0	0	0	0	0	1	1
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2	0	0	1	0	0	0	0	0	0	0
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3	0	0	0	0	0	0	1	0	0	0
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4	0	0	0	0	0	1	0	0	0	0
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5	0	0	0	0	0	0	0	1	0	0
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6	0	1	0	0	0	0	0	0	0	1
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7	0	0	0	0	0	0	0	0	1	0
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8	0	0	0	0	0	1	0	0	0	0
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9	1	0	0	0	0	0	0	0	0	0
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10	0	0	0	0	1	0	0	0	0	0
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