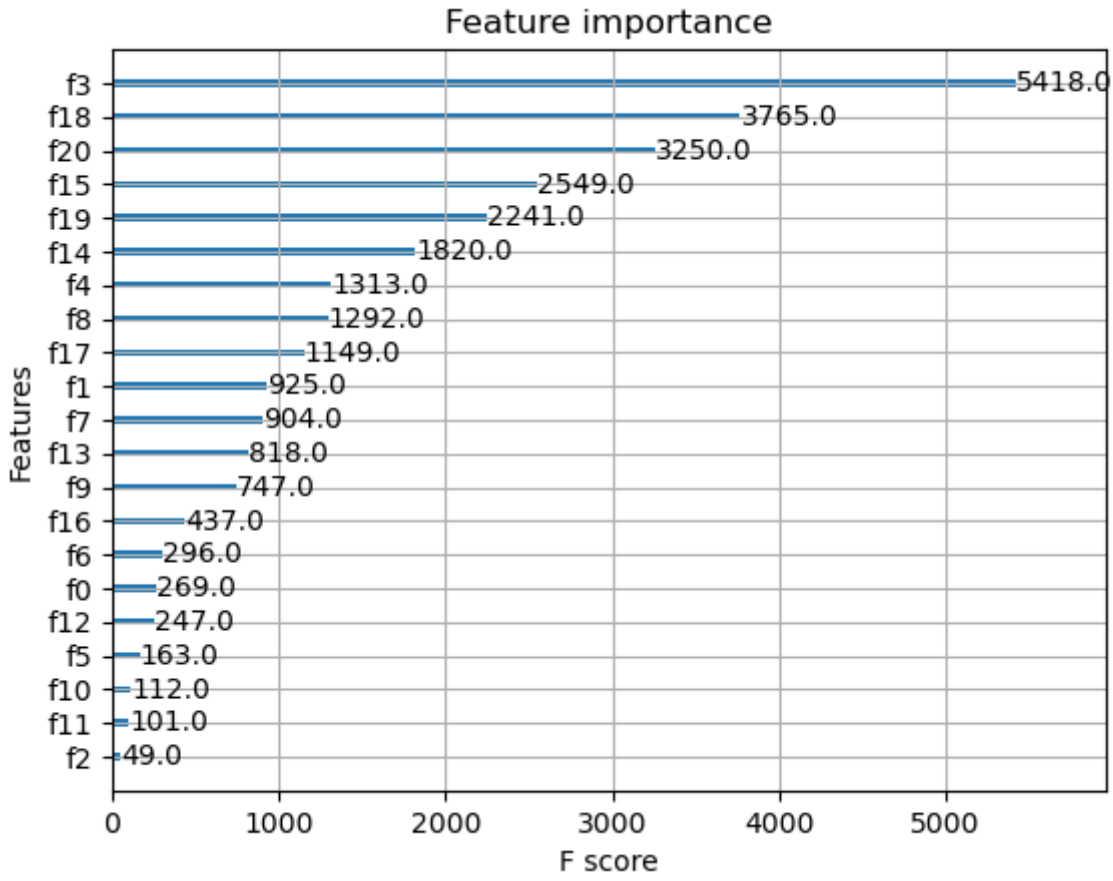
In [25]:
```
import numpy as np
import pandas as pd
import pickle
import xgboost as xgb
from sklearn.model_selection import train_test_split

data = pd.read_csv("Data1.csv")
train, test = train_test_split(data)
feature_columns = ["HighBP","HighChol","CholCheck","BMI","Smoker","Stroke","HeartDi
target_column = "Diabetes_binary"
xgtrain = xgb.DMatrix(train[feature_columns].values, train[target_column].values)
xgtest = xgb.DMatrix(test[feature_columns].values, test[target_column].values)

param = {'max_depth': 20, 'eta': 1, 'objective': 'binary:logistic'}
param['nthread'] = 4
param['eval_metric'] = 'auc'

watchlist  = [(xgtest,'eval'), (xgtrain,'train')]
num_round = 10
bst = xgb.train(param, xgtrain, num_round, watchlist)
labels = xgtest.get_label()
pred = bst.predict(xgtest)

sum = 0
for i in range(len(pred)):
    if int(preds[i] > 0.5) != labels[i]:
        sum += 1

print ('Predit result is %f' %(sum/float(len(preds))))


xgb.plot_importance(bst)
```

```
[0]     eval-auc:0.78662        train-auc:0.89672
[1]     eval-auc:0.77626        train-auc:0.94282
[2]     eval-auc:0.77431        train-auc:0.96587
C:\Users\panyu\anaconda3\Lib\site-packages\xgboost\core.py:726: FutureWarning: Pas
s `evals` as keyword args.
  warnings.warn(msg, FutureWarning)
[3]     eval-auc:0.77356        train-auc:0.97776
[4]     eval-auc:0.77255        train-auc:0.98592
[5]     eval-auc:0.77162        train-auc:0.99080
[6]     eval-auc:0.77083        train-auc:0.99463
[7]     eval-auc:0.77124        train-auc:0.99621
[8]     eval-auc:0.77160        train-auc:0.99760
[9]     eval-auc:0.77112        train-auc:0.99839
Predit result is 0.495332
```

Out[25]:
```
<Axes: title={'center': 'Feature importance'}, xlabel='F score', ylabel='Feature
s'>
```


Feature importance
Features
F score
f3
f18
f20
f15
f19
f14
f4
f8
f17
f1
f7
f13
f9
f16
f6
f0
f12
f5
f10
f11
f2
5418.0
3765.0
3250.0
2549.0
2241.0
1820.0
1313.0
1292.0
1149.0
925.0
904.0
818.0
747.0
437.0
296.0
269.0
247.0
163.0
112.0
101.0
49.0
0
1000
2000
3000
4000
5000

In [ ]:

In [ ]: