HW4

December 11, 2022

import required packages

[ ]:
```
import gnn_utils as U
from gnn_main import *
```

[2]:
```
adj, features, labels, idx_train, idx_test = U.load_data()

result = model_train(adj, features, labels, idx_train, idx_test)
acc_report = result['acc_test'][-1]
print(f'The test accuracy is {acc_report}')
```

```
Loading cora dataset…
The test accuracy is 0.8418079018592834
```

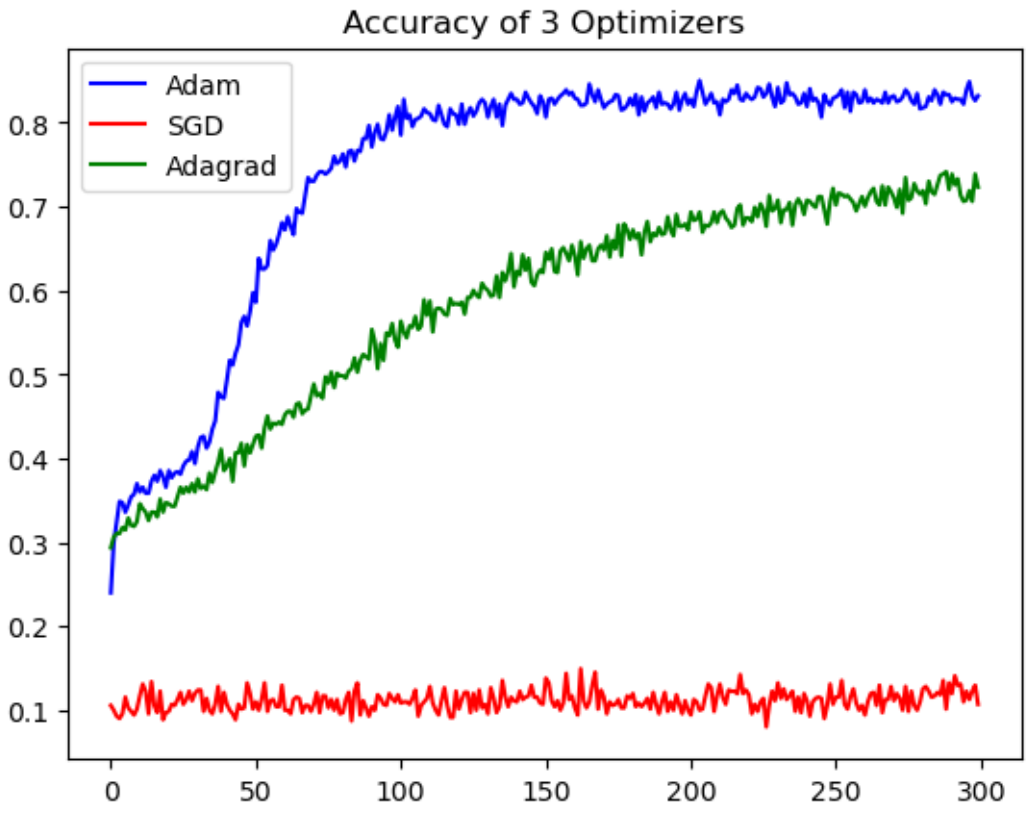
Plot the curves for all 3 optimization methods

[4]:
```
result_adm = model_train(adj, features, labels, idx_train, idx_test)
result_sgd = model_train(adj, features, labels, idx_train, idx_test, opt="SGD")
result_ada = model_train(adj, features, labels, idx_train, idx_test,␣
 ↪opt="Adagrad")

acc_adam = result_adm["acc_test"]
acc_sgd = result_sgd["acc_test"]
acc_ada = result_ada["acc_test"]
x = np.arange(300)
plt.plot(x, acc_adam, 'b', label='Adam')
plt.plot(x, acc_sgd, 'r', label='SGD')
plt.plot(x, acc_ada, 'g', label='Adagrad')

plt.title("Accuracy of 3 Optimizers")
plt.legend()
plt.show()

# model train (model test function can be called directly in model_train)
res = model_train(adj, features, labels, idx_train, idx_test)
```


Accuracy of 3 Optimizers
Adam
SGD
Adagrad
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
50
100
150
200
250
300

[ ]: