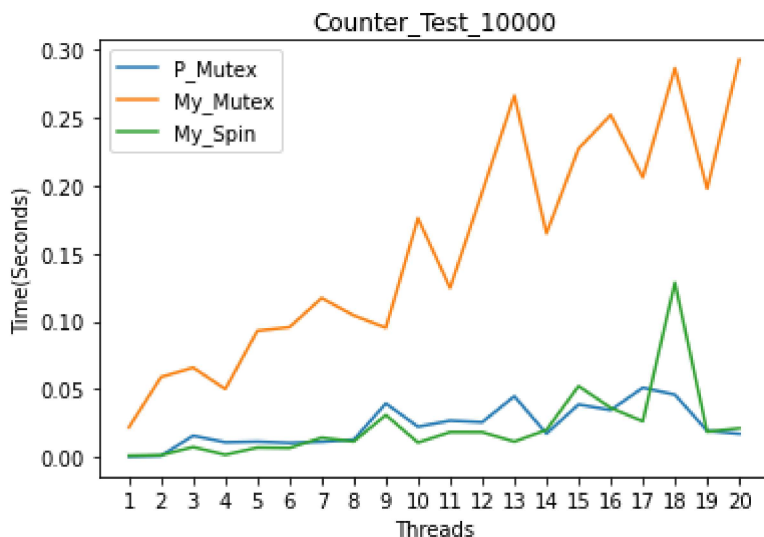


## Counter\_Test\_10000

In [44]:

```
import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
Mutex = [0.000545, 0.001025, 0.015827, 0.010980, 0.011470,
          0.010556, 0.011361, 0.012895, 0.039556, 0.022459,
          0.026932, 0.025801, 0.044869, 0.017375, 0.038845,
          0.034685, 0.051179, 0.046086, 0.019392, 0.017257]
MyMutex = [0.022020, 0.059038, 0.065968, 0.050159, 0.093020,
            0.095681, 0.117165, 0.104357, 0.095280, 0.175810,
            0.124588, 0.195126, 0.266258, 0.164720, 0.227079,
            0.251922, 0.205904, 0.286343, 0.197745, 0.292539]
MySpin = [0.001109, 0.001496, 0.007468, 0.001787, 0.007070,
           0.006776, 0.014392, 0.011569, 0.031024, 0.010784,
           0.018454, 0.018422, 0.011471, 0.020096, 0.052373,
           0.036332, 0.026400, 0.128537, 0.018783, 0.021282]
plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("Counter_Test_10000")
plt.legend()
plt.show()
```



## Counter\_Test\_100000

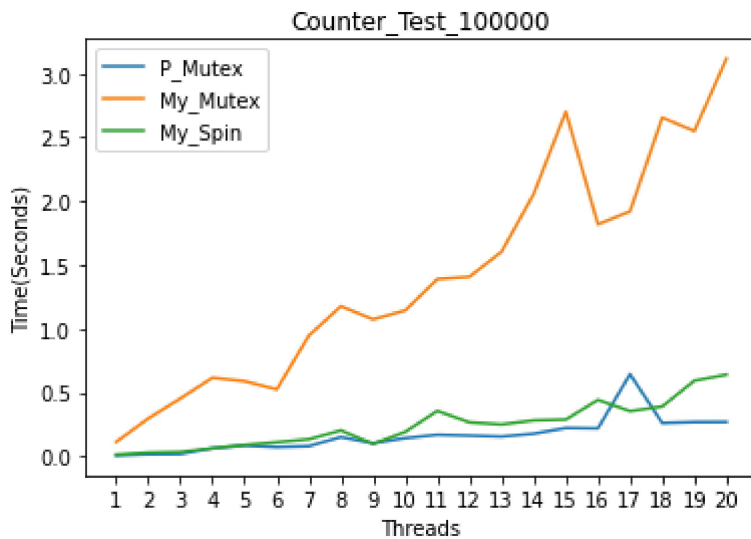
In [45]:

```

import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
MyMutex = [0.110948, 0.295714, 0.452718, 0.615739, 0.588531,
           0.524240, 0.945814, 1.176653, 1.073203, 1.143407,
           1.389889, 1.407283, 1.603500, 2.057700, 2.702728,
           1.818576, 1.920772, 2.656143, 2.550325, 3.117838]
MySpin = [0.011349, 0.027525, 0.032943, 0.061357, 0.087888,
          0.109360, 0.132745, 0.201984, 0.096047, 0.190558,
          0.354976, 0.265069, 0.249020, 0.280817, 0.287005,
          0.441697, 0.353330, 0.389709, 0.592419, 0.639607]
Mutex = [0.005435, 0.015824, 0.017274, 0.061813, 0.084304,
          0.071561, 0.078854, 0.149664, 0.101301, 0.141612,
          0.167725, 0.161290, 0.153784, 0.176129, 0.220876,
          0.217732, 0.643953, 0.259807, 0.267789, 0.268780]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("Counter_Test_100000")
plt.legend()
plt.show()

```



## Counter\_Test\_100000

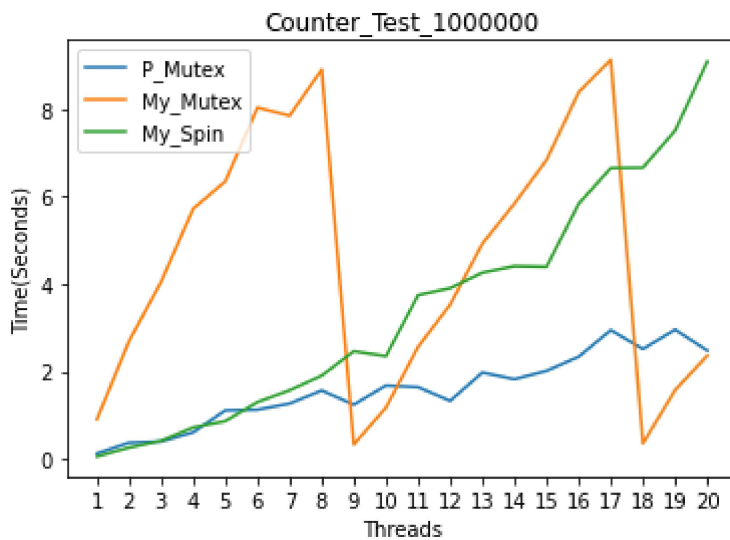
In [46]:

```

import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
MyMutex = [0.902328, 2.692245, 4.048531, 5.723931, 6.348479,
            8.035259, 7.852037, 8.903657, 0.326926, 1.171508,
            2.560347, 3.528355, 4.921083, 5.840506, 6.836004,
            8.389701, 9.130703, 0.349845, 1.574368, 2.359397]
MySpin = [0.053537, 0.254936, 0.410791, 0.718698, 0.861956,
           1.297671, 1.568175, 1.904223, 2.459998, 2.348240,
           3.745236, 3.904958, 4.258177, 4.407247, 4.392283,
           5.837919, 6.652254, 6.660700, 7.508262, 9.085914]
Mutex = [0.121202, 0.368084, 0.395261, 0.605737, 1.109000,
          1.124080, 1.264249, 1.563289, 1.240006, 1.678534,
          1.640611, 1.326456, 1.975188, 1.823031, 2.013079,
          2.335383, 2.944306, 2.511734, 2.954968, 2.479032]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("Counter_Test_1000000")
plt.legend()
plt.show()

```



## Hash\_Test\_10000

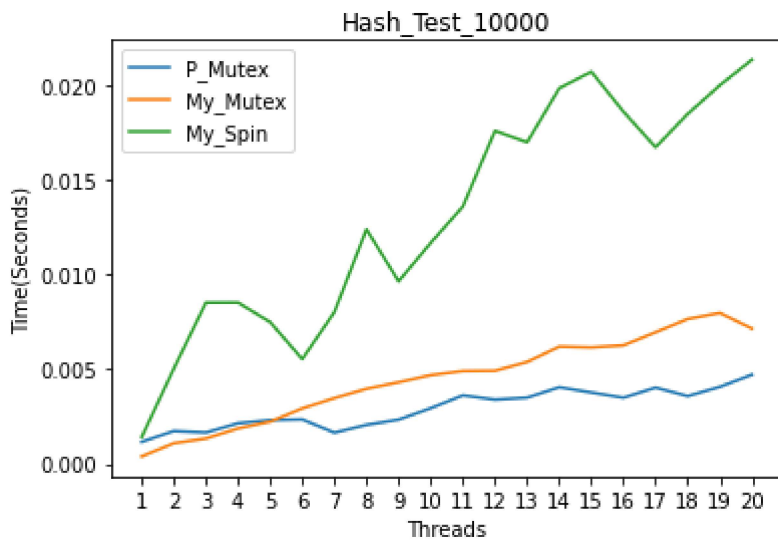
In [62]:

```

import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
MyMutex = [0.000389, 0.001088, 0.001338, 0.001868, 0.002229,
           0.002931, 0.003476, 0.003968, 0.004315, 0.004692,
           0.004909, 0.004924, 0.005386, 0.006197, 0.006155,
           0.006262, 0.006956, 0.007659, 0.007976, 0.007153]
MySpin = [0.001418, 0.005037, 0.008522, 0.008528, 0.007491,
           0.005535, 0.008023, 0.012396, 0.009650, 0.011684,
           0.013603, 0.017602, 0.017001, 0.019853, 0.020728,
           0.018618, 0.016736, 0.018500, 0.020011, 0.021363]
Mutex = [0.001163, 0.001733, 0.001655, 0.002145, 0.002309,
          0.002346, 0.001648, 0.002059, 0.002336, 0.002943,
          0.003621, 0.003396, 0.003500, 0.004051, 0.003772,
          0.003497, 0.004031, 0.003582, 0.004070, 0.004715]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("Hash_Test_10000")
plt.legend()
plt.show()

```



## Hash\_Test\_100000

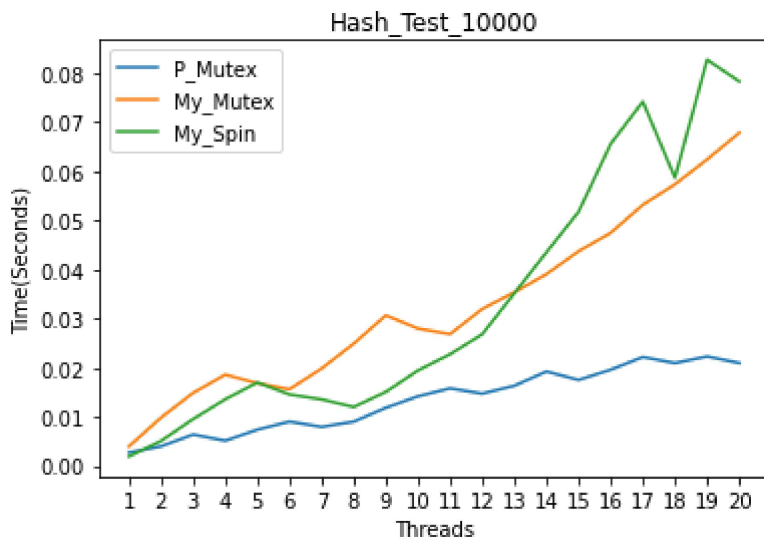
In [67]:

```

import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
MyMutex = [0.003954, 0.009828, 0.014874, 0.018589, 0.016839,
           0.015622, 0.019843, 0.024896, 0.030670, 0.027976,
           0.026848, 0.031970, 0.035389, 0.039054, 0.043717,
           0.047475, 0.053199, 0.057353, 0.062429, 0.067841]
MySpin = [0.001915, 0.005071, 0.009541, 0.013579, 0.016990,
          0.014558, 0.013547, 0.012004, 0.015079, 0.019454,
          0.022741, 0.026809, 0.035183, 0.043518, 0.051762,
          0.065610, 0.074228, 0.058698, 0.082751, 0.078332]
Mutex = [0.002709, 0.003973, 0.006379, 0.005126, 0.007373,
          0.009021, 0.007940, 0.009010, 0.011843, 0.014183,
          0.015800, 0.014729, 0.016331, 0.019242, 0.017514,
          0.019606, 0.022166, 0.020935, 0.022283, 0.020953]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("Hash_Test_10000")
plt.legend()
plt.show()

```



## Hash\_Test\_1000000

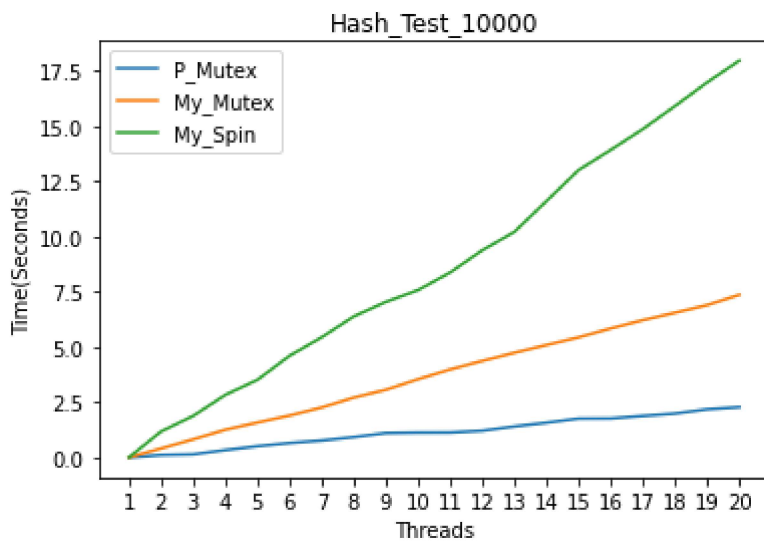
In [72]:

```

import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
MyMutex = [0.002896, 0.406354, 0.820355, 1.255336, 1.580999,
           1.896969, 2.262755, 2.710363, 3.064160, 3.542514,
           3.982964, 4.366725, 4.735518, 5.086441, 5.433449,
           5.837101, 6.211625, 6.546452, 6.893092, 7.357155]
MySpin = [0.001267, 1.175321, 1.880488, 2.832856, 3.513341,
          4.597599, 5.436642, 6.379877, 7.038603, 7.572373,
          8.363937, 9.370304, 10.20246, 11.59763, 12.99813,
          13.91009, 14.85234, 15.89233, 16.96294, 17.94517]
Mutex = [0.001372, 0.110809, 0.138706, 0.333159, 0.509616,
          0.652975, 0.767678, 0.922653, 1.102969, 1.124499,
          1.128558, 1.210198, 1.403383, 1.573717, 1.760235,
          1.765881, 1.880961, 1.987135, 2.179334, 2.278020]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("Hash_Test_10000")
plt.legend()
plt.show()

```



## List\_Test\_10000

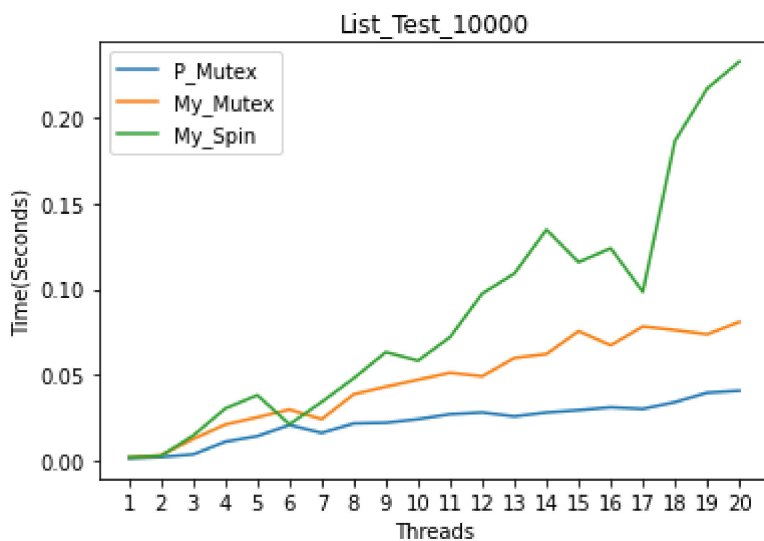
In [47]:

```

import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
MyMutex = [0.001822, 0.003174, 0.012649, 0.021089, 0.025327,
           0.029812, 0.024215, 0.038721, 0.043127, 0.047213,
           0.051256, 0.049213, 0.059842, 0.062124, 0.075469,
           0.067213, 0.078214, 0.076126, 0.073621, 0.080809]
MySpin = [0.002121, 0.002821, 0.014643, 0.030453, 0.038213,
          0.021234, 0.034213, 0.048062, 0.063231, 0.058276,
          0.072033, 0.097367, 0.109032, 0.134623, 0.115648,
          0.123762, 0.098372, 0.186237, 0.216762, 0.232416]
Mutex = [0.001322, 0.002174, 0.003649, 0.011089, 0.014327,
         0.020812, 0.016215, 0.021721, 0.022127, 0.024213,
         0.027122, 0.028135, 0.025842, 0.028120, 0.029462,
         0.031137, 0.030213, 0.034126, 0.039626, 0.040809]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("List_Test_10000")
plt.legend()
plt.show()

```



## List\_Test\_100000

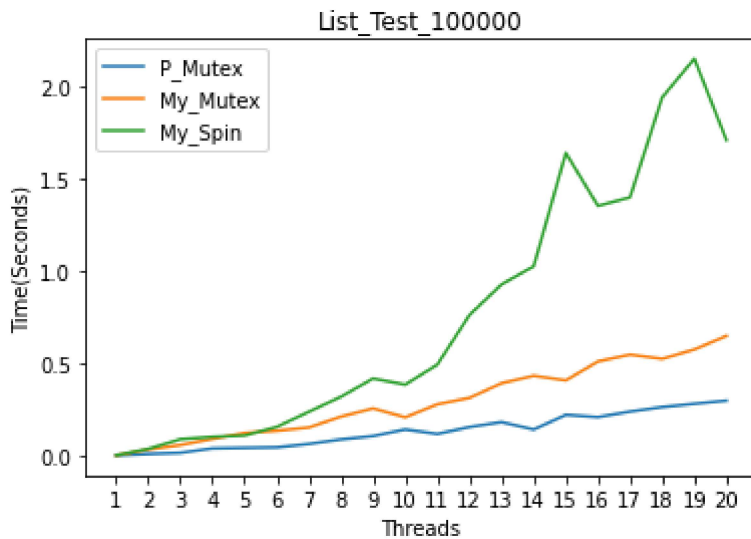
In [54]:

```

import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(1,21)]
Mutex = [0.001109, 0.009731, 0.015178, 0.039441, 0.042239,
          0.044987, 0.063538, 0.088172, 0.106235, 0.142166,
          0.117804, 0.155436, 0.181944, 0.142041, 0.221407,
          0.209335, 0.239247, 0.263676, 0.281568, 0.298624]
MySpin = [0.001761, 0.036842, 0.089082, 0.101972, 0.109144,
           0.156053, 0.238272, 0.319869, 0.418606, 0.385461,
           0.494241, 0.762892, 0.929113, 1.027409, 1.641893,
           1.354934, 1.401118, 1.943582, 2.15299, 1.711876]
MyMutex = [0.001173, 0.033171, 0.057522, 0.090853, 0.123052,
            0.135187, 0.152826, 0.211877, 0.256441, 0.208124,
            0.278817, 0.313602, 0.393182, 0.433619, 0.408542,
            0.511101, 0.548278, 0.525184, 0.575838, 0.649498]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("List_Test_100000")
plt.legend()
plt.show()

```



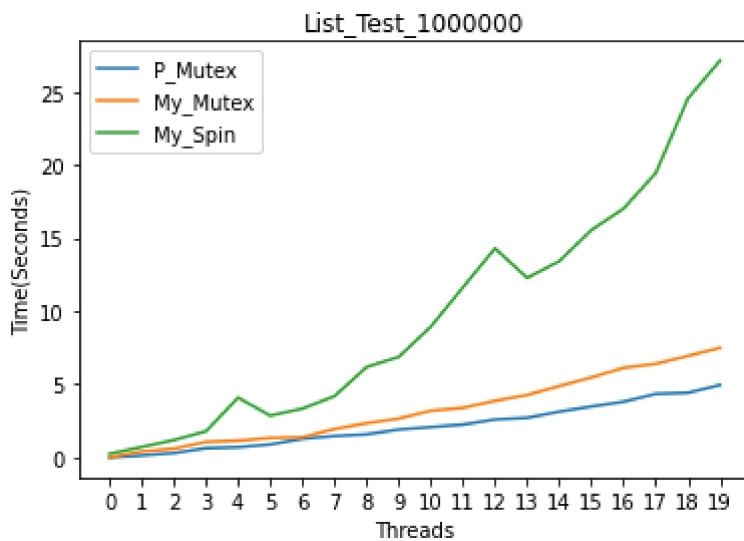
## List\_Test\_1000000



In [59]:

```
import numpy as np
import matplotlib.pyplot as plt
x = [i for i in range(20)]
MyMutex = [0.001672, 0.413888, 0.596264, 1.065327, 1.148602,
           1.334176, 1.383248, 1.945883, 2.343287, 2.663492,
           3.197367, 3.397833, 3.872478, 4.273506, 4.886873,
           5.475974, 6.131261, 6.399885, 6.939232, 7.492454]
MySpin = [0.252961, 0.718419, 1.190213, 1.792129, 4.091446,
          2.860530, 3.342220, 4.192199, 6.186059, 6.871617,
          8.942418, 11.62892, 14.29112, 12.27409, 13.41893,
          15.54924, 17.01118, 19.43582, 24.52989, 27.11875]
Mutex = [0.001843, 0.139834, 0.298558, 0.635642, 0.702205,
         0.891149, 1.276311, 1.465151, 1.582048, 1.910895,
         2.080094, 2.248886, 2.599312, 2.712234, 3.135442,
         3.487749, 3.811837, 4.350494, 4.423187, 4.954663]

plt.plot(x, Mutex, label = "P_Mutex")
plt.plot(x, MyMutex, label = "My_Mutex")
plt.plot(x, MySpin, label = "My_Spin")
plt.xticks(x)
plt.xlabel("Threads")
plt.ylabel("Time(Seconds)")
plt.title("List_Test_1000000")
plt.legend()
plt.show()
```



In [ ]:

