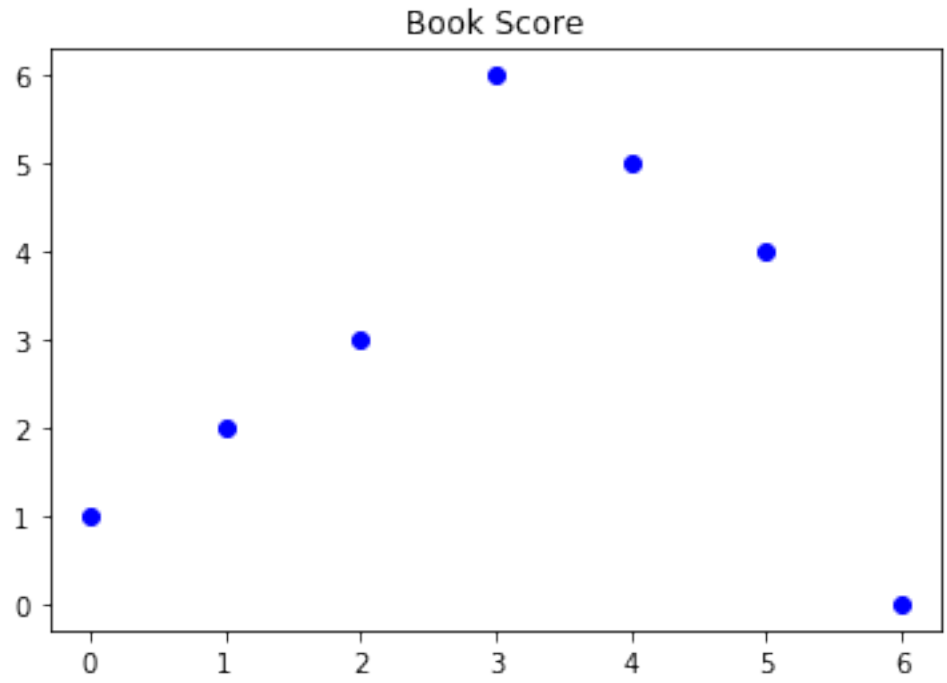
graphics

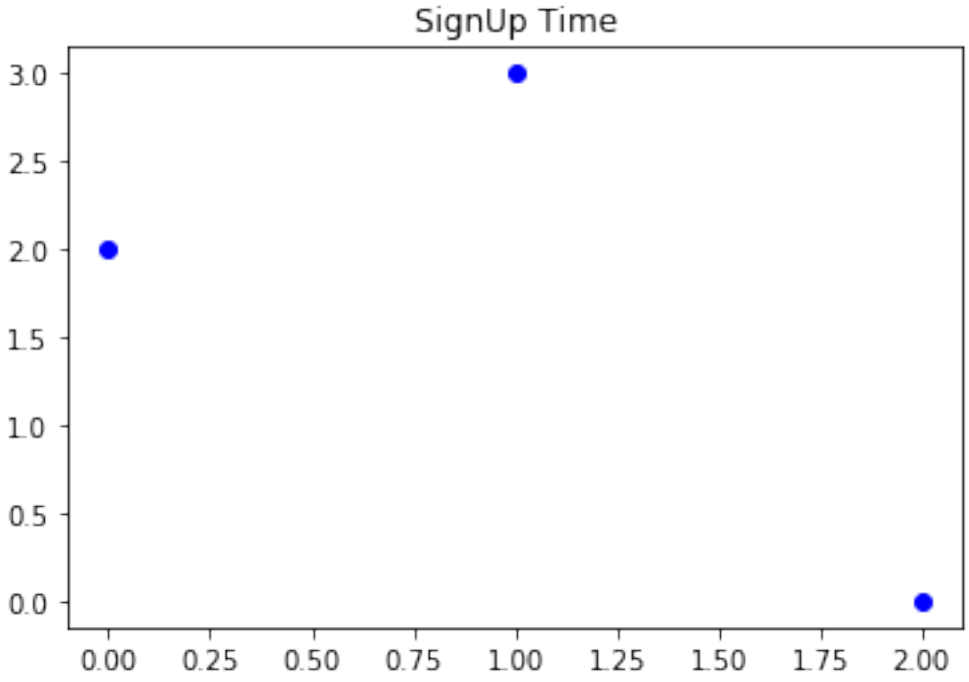
February 20, 2020

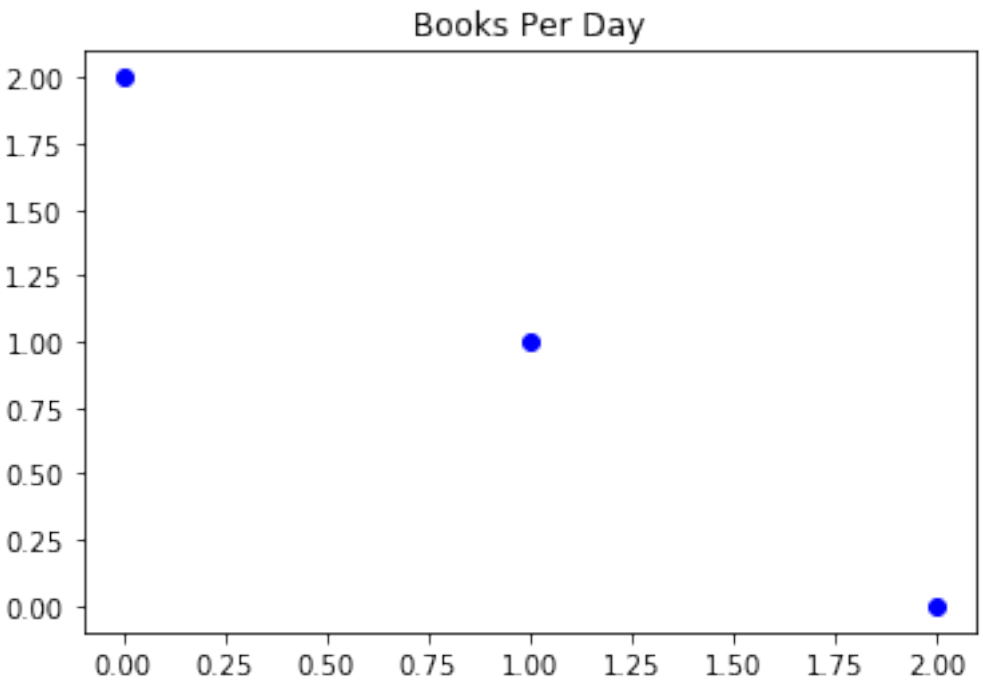
[1]:
```
from matplotlib import pyplot as plt


def plots(filename) :

    with open(filename,'r') as fh:
        data = fh.read()

    data = data.split('\n')
    data.pop()
    first_line = data[0].split(' ')

    n_b=int(first_line[0])
    n_lib=int(first_line[1])
    n_d=int(first_line[2])


    book_scores = [  int(i) for i in data[1].split(" ")]

    libraries = [0]*n_lib
    booksinlib = [0]*n_lib

    j=0
    for i in range(2,len(data),2) :
        if(j==len(libraries)) : break
        libraries[j] = data[i].split(' ')
        booksinlib[j] = data[i+1].split(' ')
        j += 1

    books_pre_lib = n_lib*[2]
    signuptime = n_lib*[2]
    books_per_day = n_lib*[2]
    for i in range(len(books_pre_lib)):
        books_pre_lib[i] = int(libraries[i][0])
        signuptime[i] = int(libraries[i][1])
        books_per_day[i] = int(libraries[i][2])
```

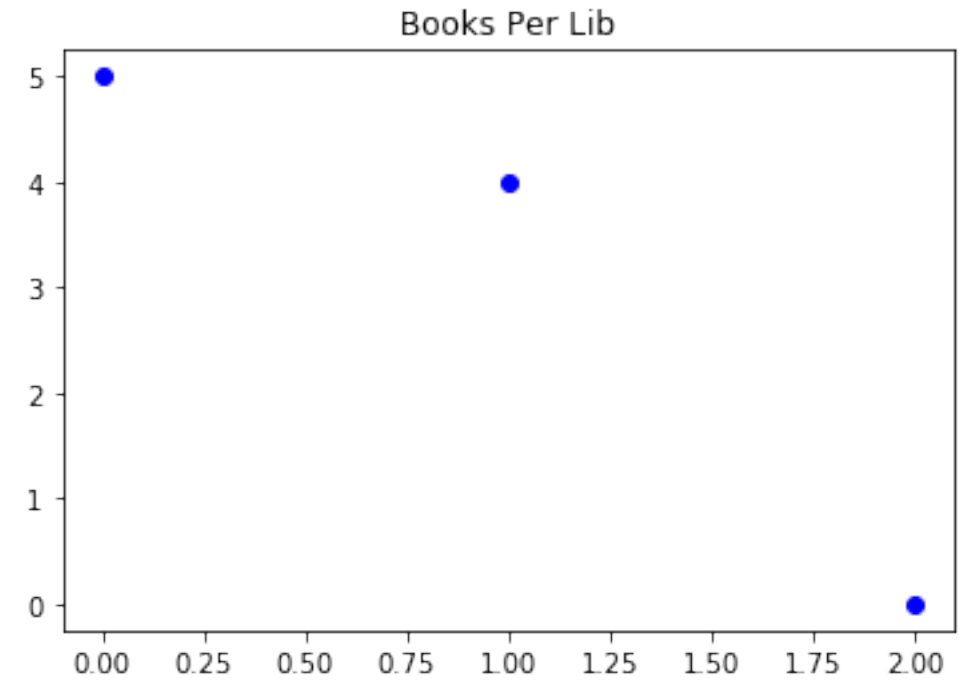
```
    books_pre_lib.append(0)
    signuptime.append(0)
    books_per_day.append(0)

    plt.figure(0)
    book_scores.append(0)
    plt.title("Book Score")
    plt.plot(book_scores,'bo', label='req from endpoint')
    plt.figure(1)
    plt.title("SignUp Time")
    plt.plot(signuptime,'bo', label='req from endpoint')
    plt.figure(2)
    plt.title("Books Per Day")
    plt.plot(books_per_day,'bo', label='req from endpoint')
    plt.figure(3)
    plt.title("Books Per Lib")
    plt.plot(books_pre_lib,'bo', label='req from endpoint')
    booklib = n_b*[n_lib*[0]]
    books = n_b*[0]
    for i in range(len(booksinlib)):
        for j in range(len(booksinlib[i])):
            books[int(booksinlib[i][j])]+=1
    books.append(0)
    plt.figure(4)
    plt.title("Books in Lib")
    plt.plot(books,'bo', label='req from endpoint')
```

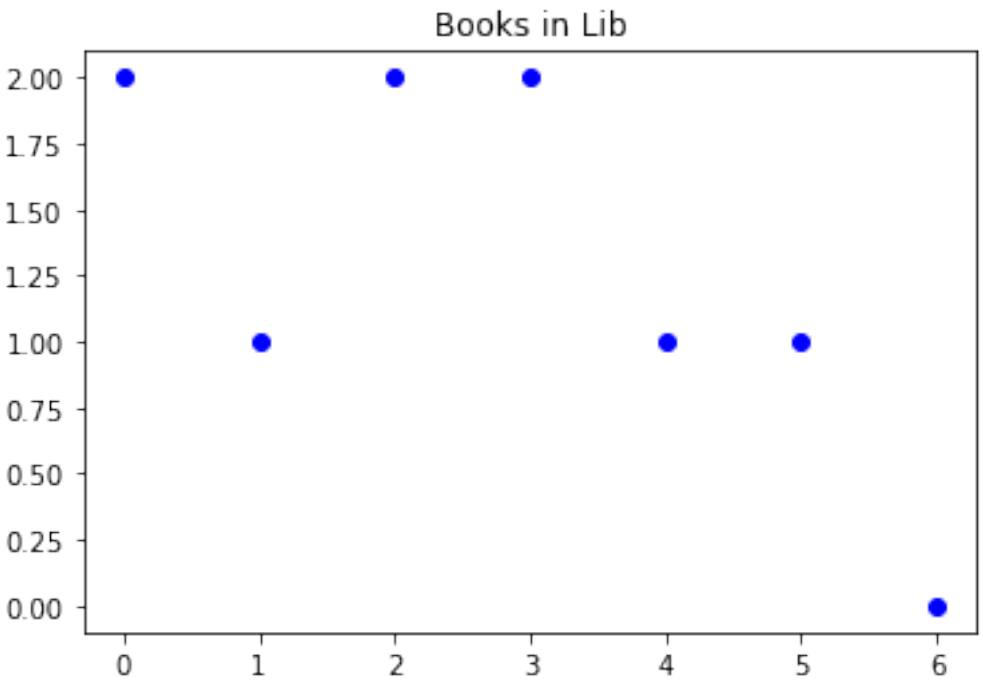
[2]:
```
plots("a_example.txt")
```


Book Score
6
5
4
3
2
1
0
0
1
2
3
4
5
6

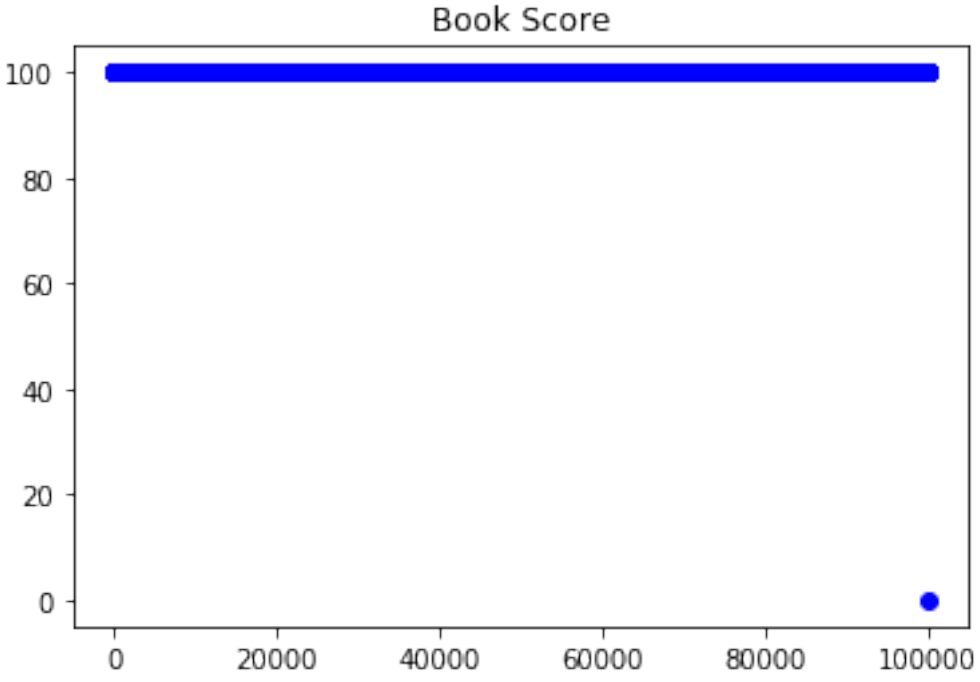

SignUp Time
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00

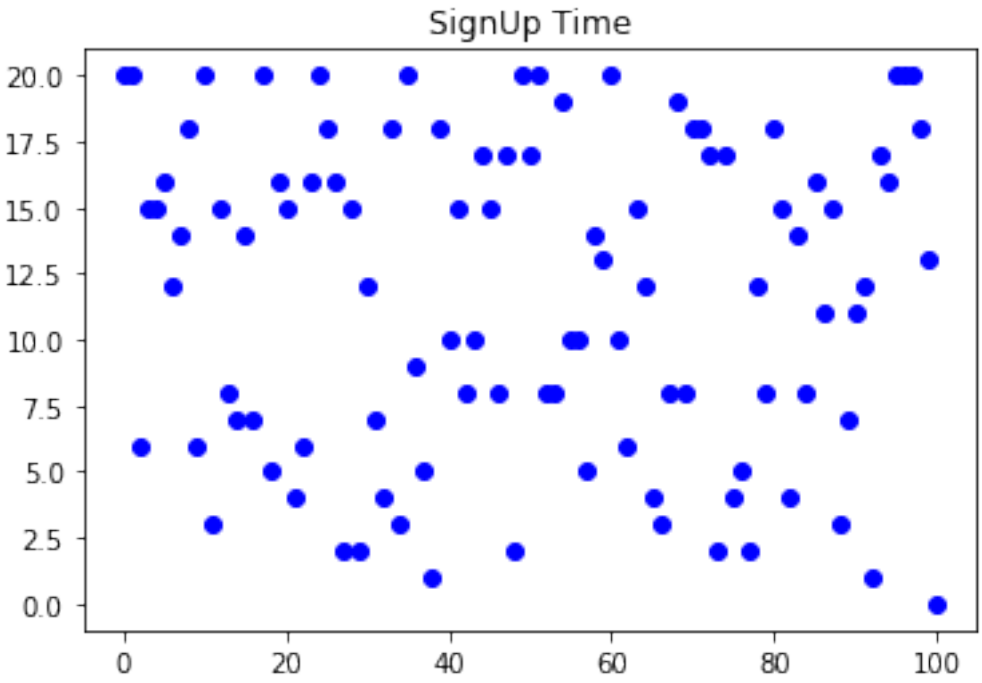

Books Per Day
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00

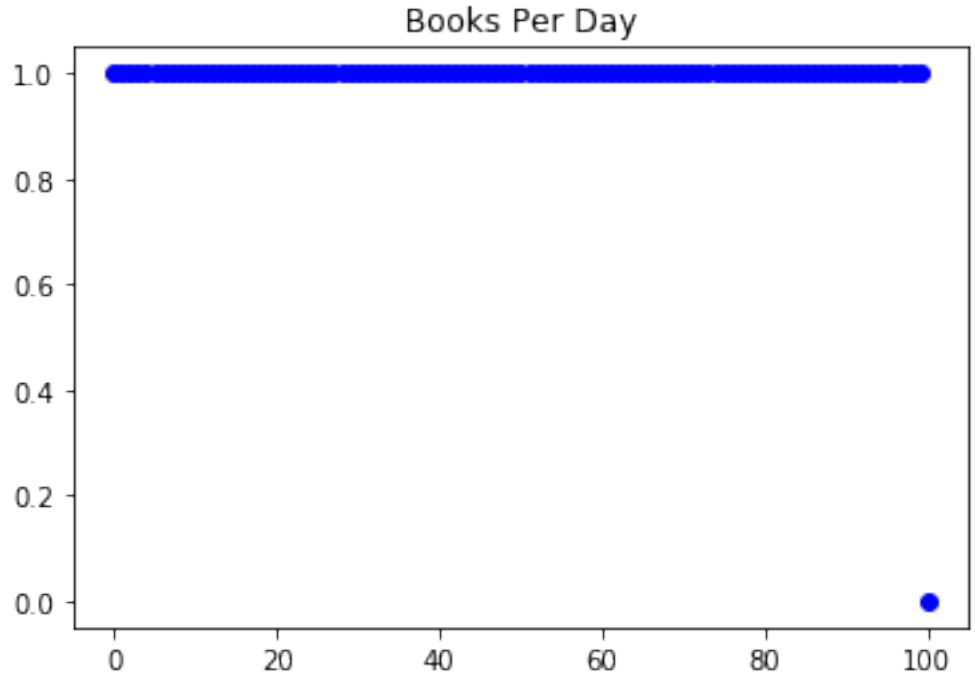

Books Per Lib
5
4
3
2
1
0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00

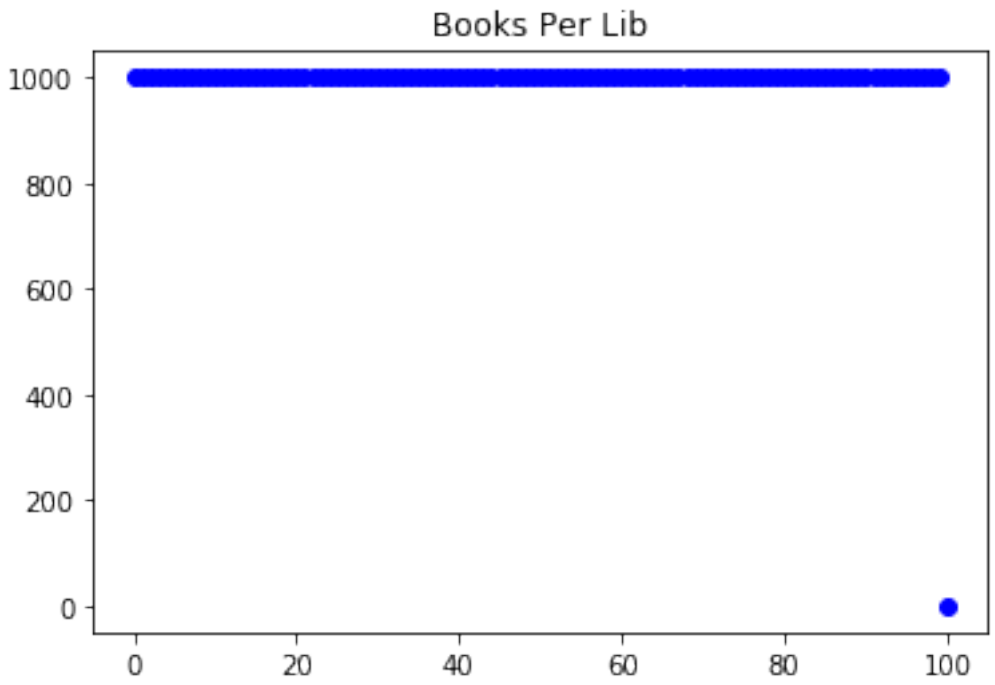


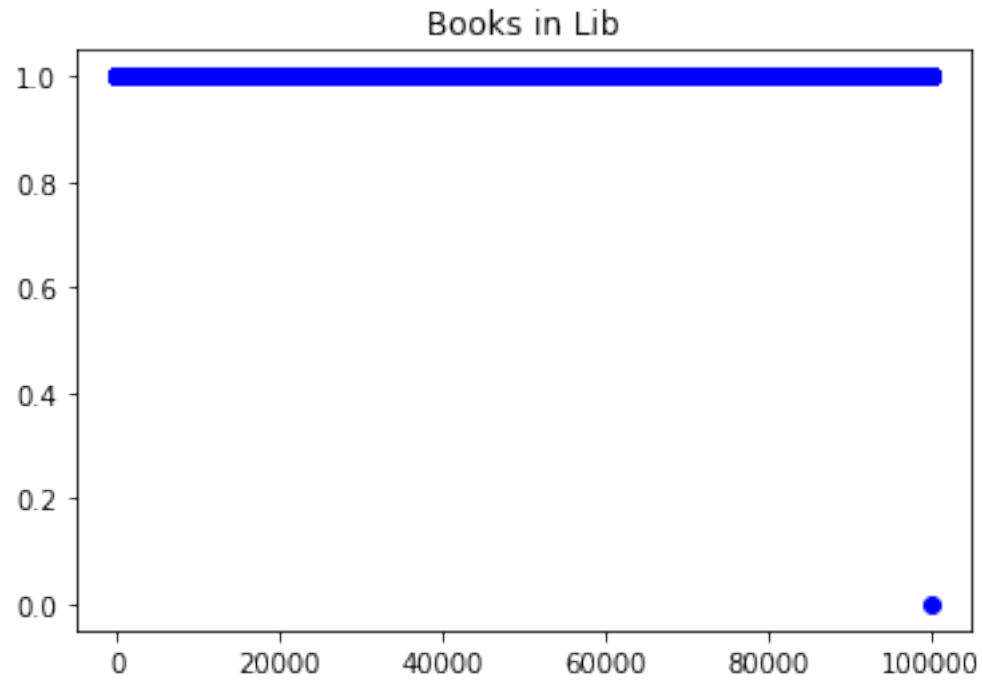
[3]:
```
plots("b_read_on.txt")
```



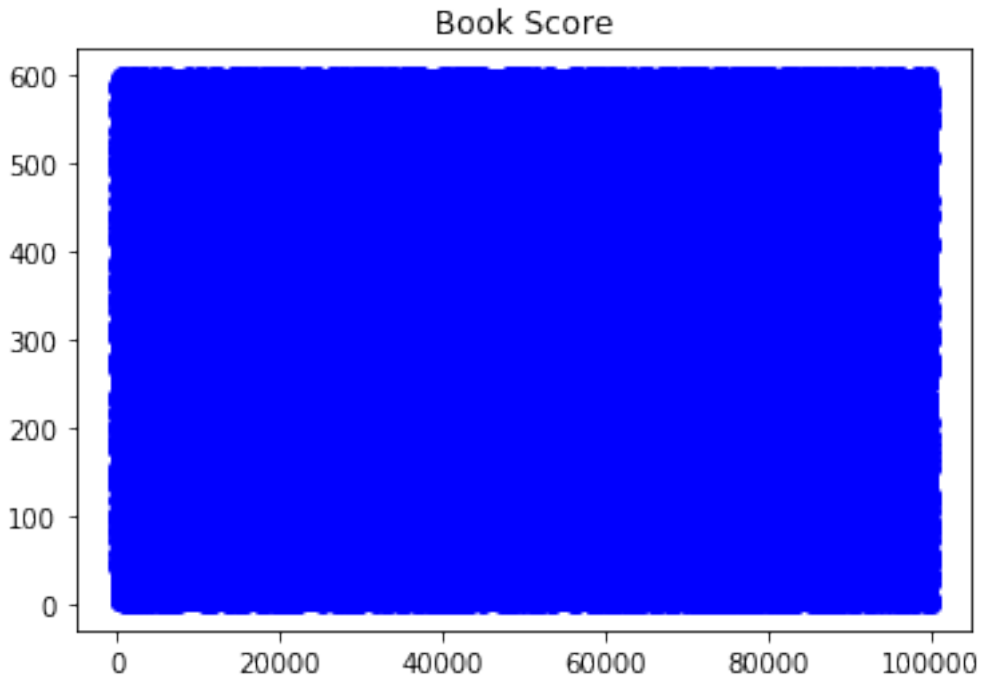

SignUp Time
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
0
20
40
60
80
100

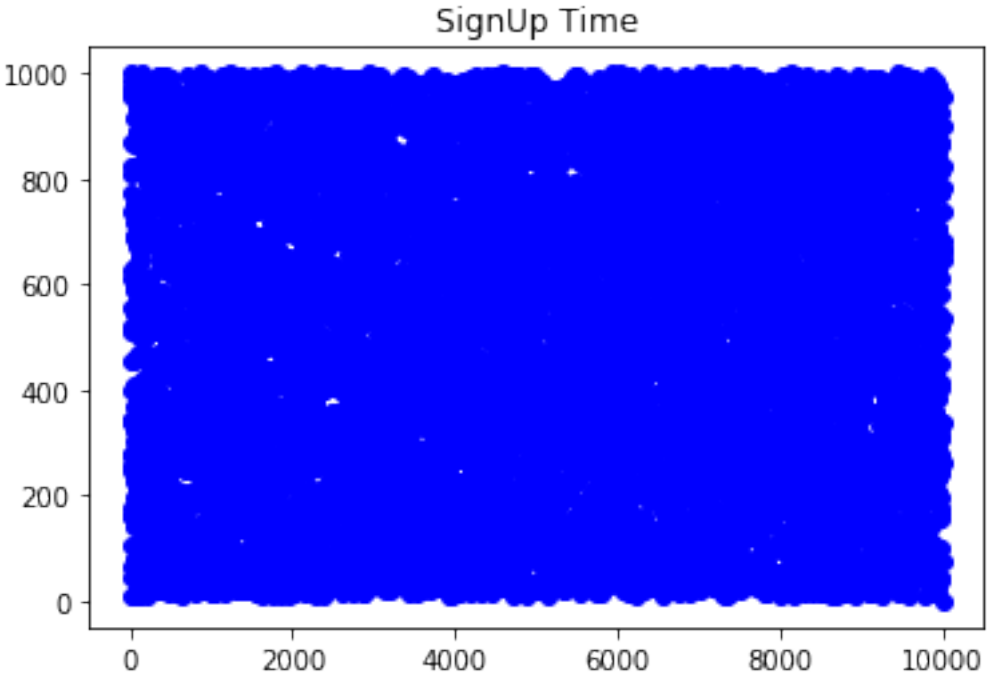

Books Per Day
1.0
0.8
0.6
0.4
0.2
0.0
0
20
40
60
80
100

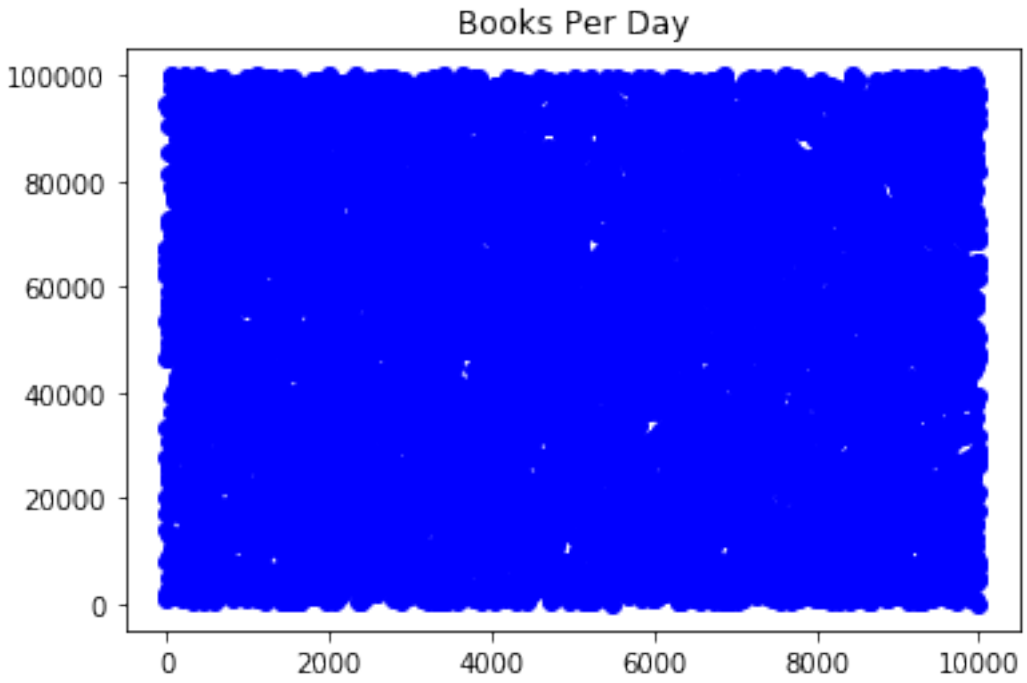


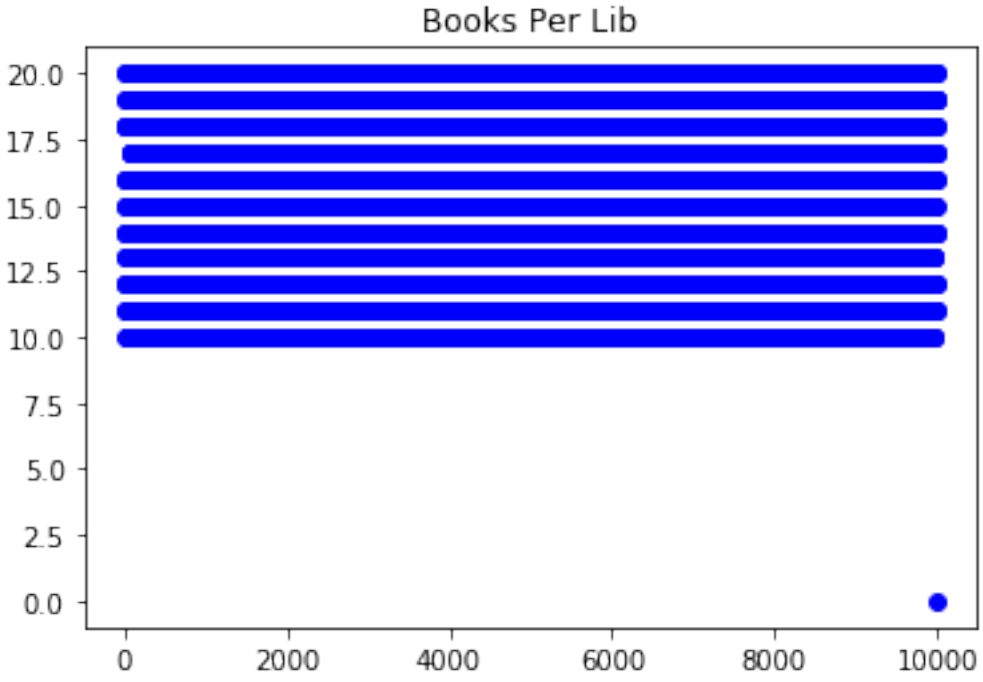


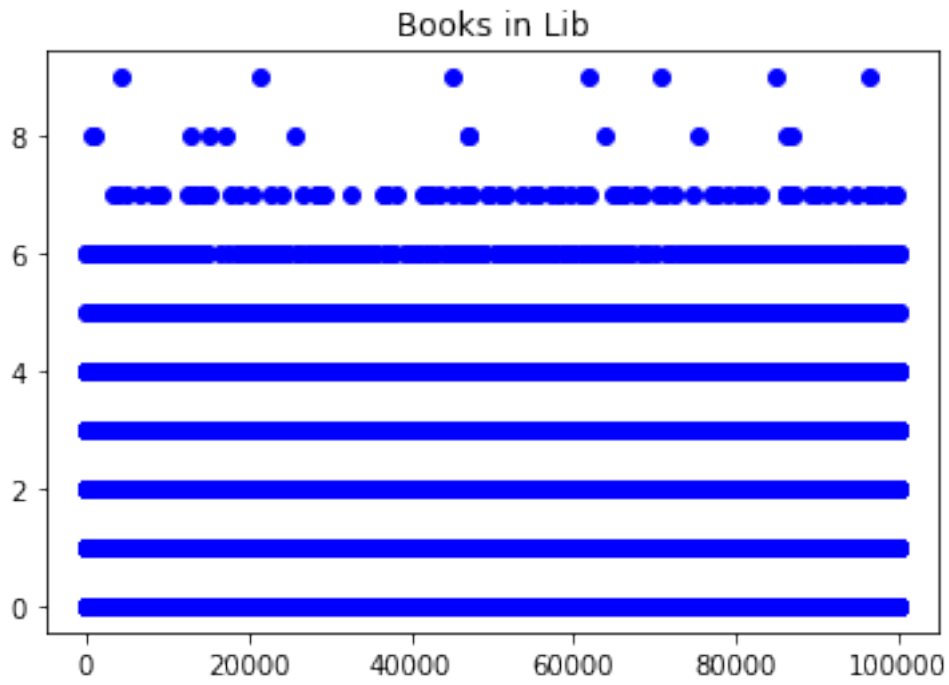
[4]:
```
plots("c_incunabula.txt")
```


Book Score
600
500
400
300
200
100
0
0
20000
40000
60000
80000
100000

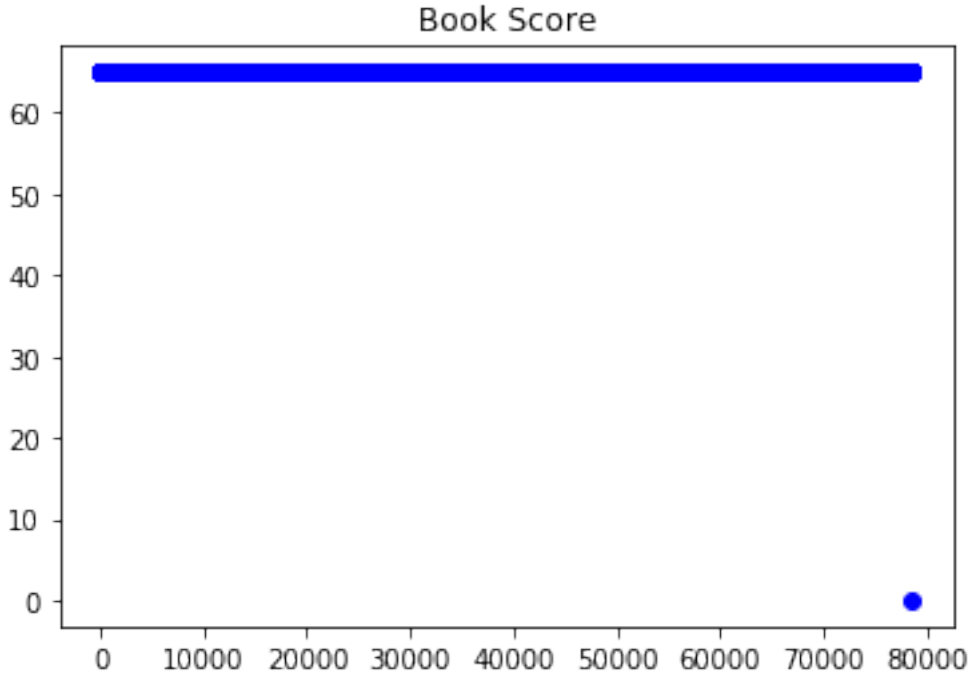

SignUp Time
1000
800
600
400
200
0
0
2000
4000
6000
8000
10000

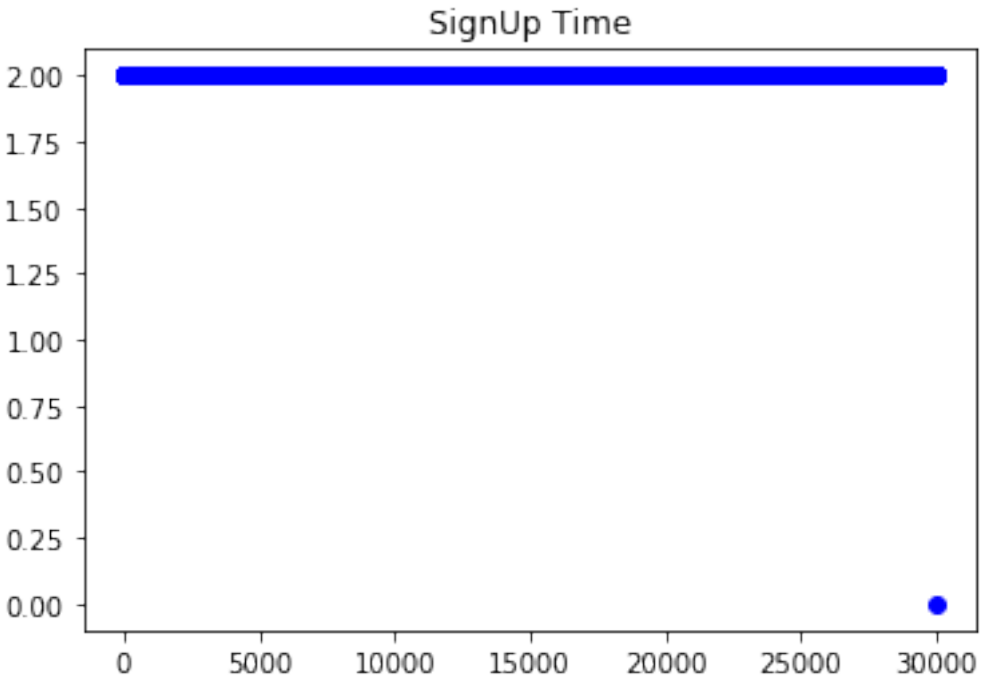

Books Per Day
100000
80000
60000
40000
20000
0
0
2000
4000
6000
8000
10000

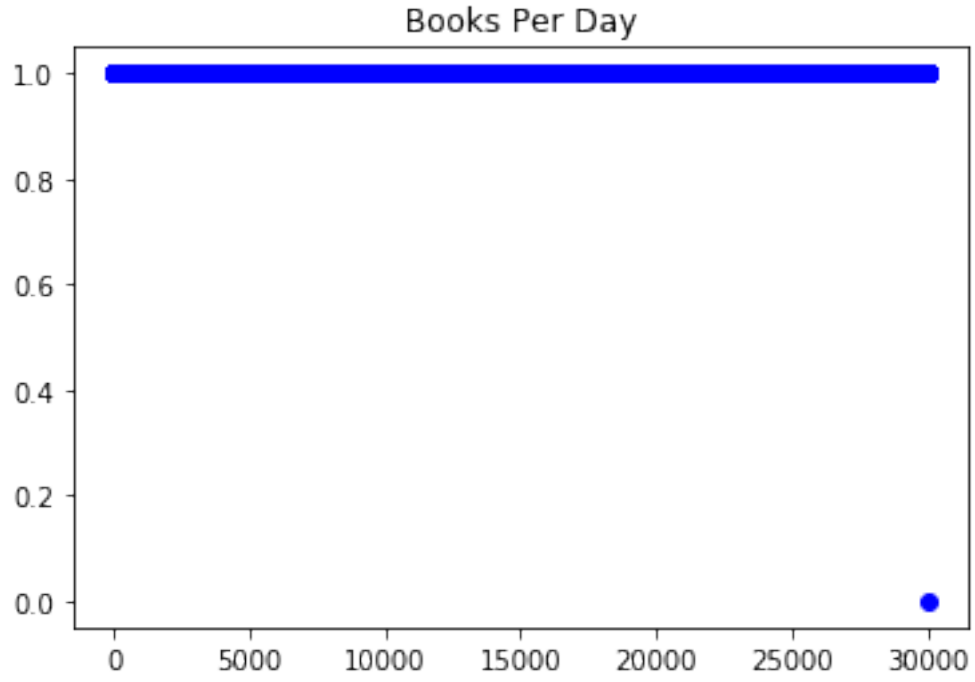

Books Per Lib
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
0
2000
4000
6000
8000
10000

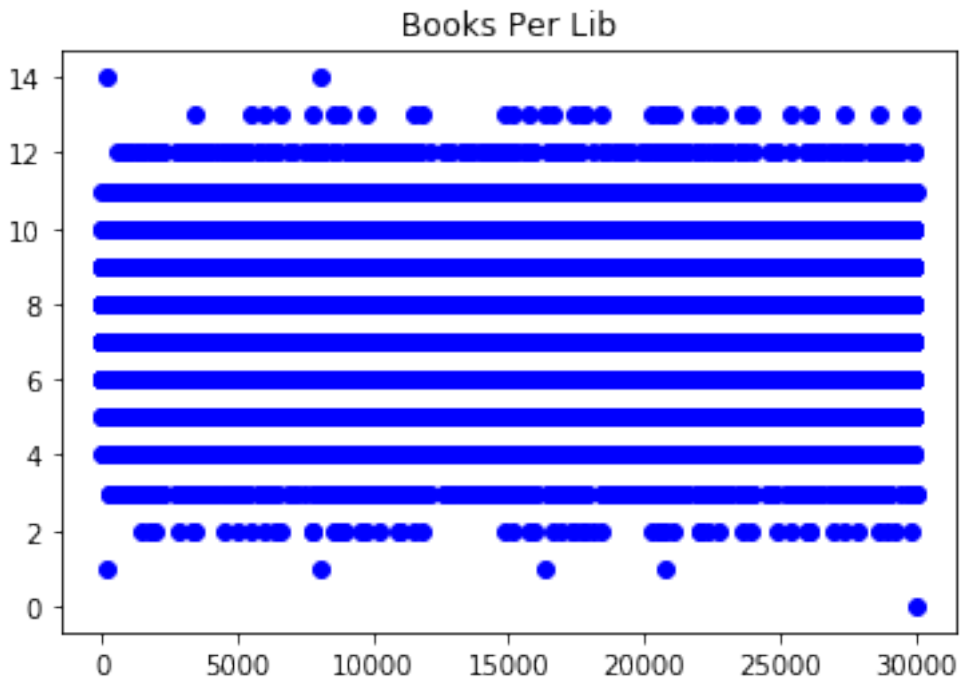


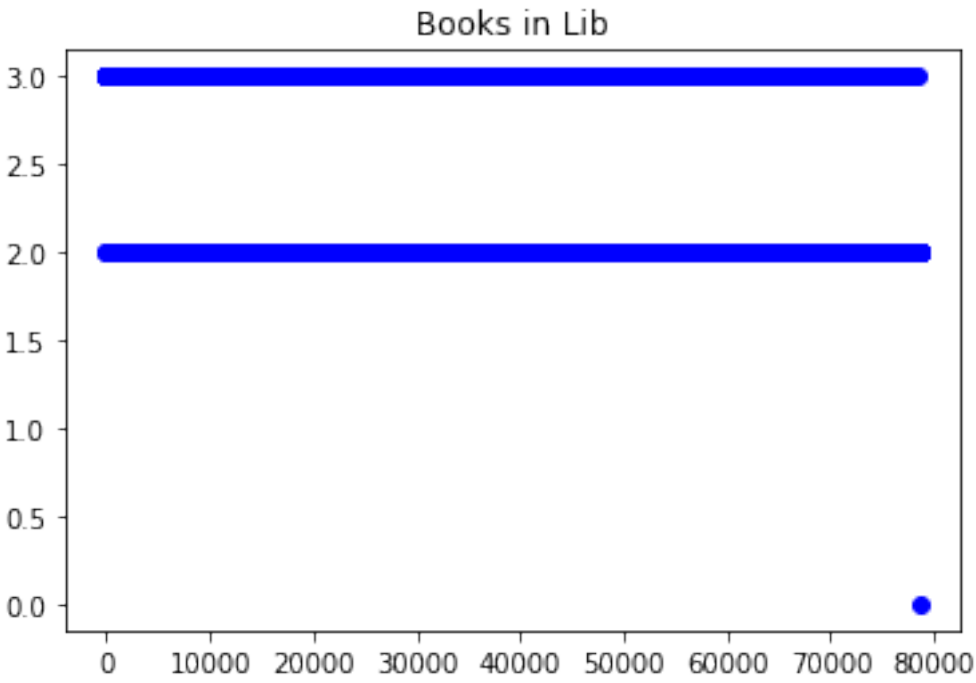
[5]:
```
plots("d_tough_choices.txt")
```



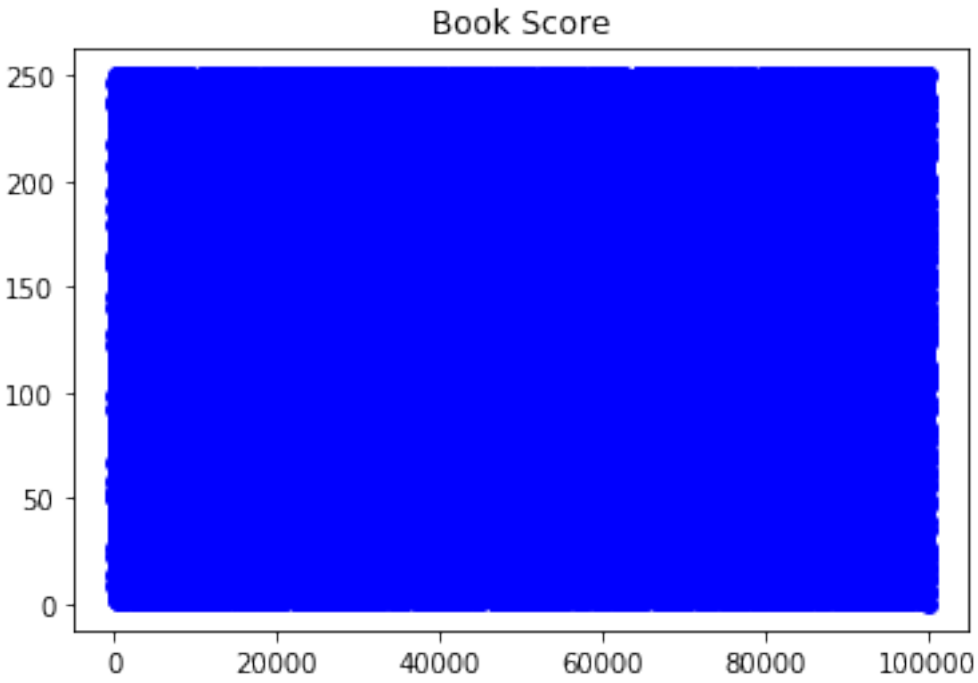

SignUp Time
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0
5000
10000
15000
20000
25000
30000

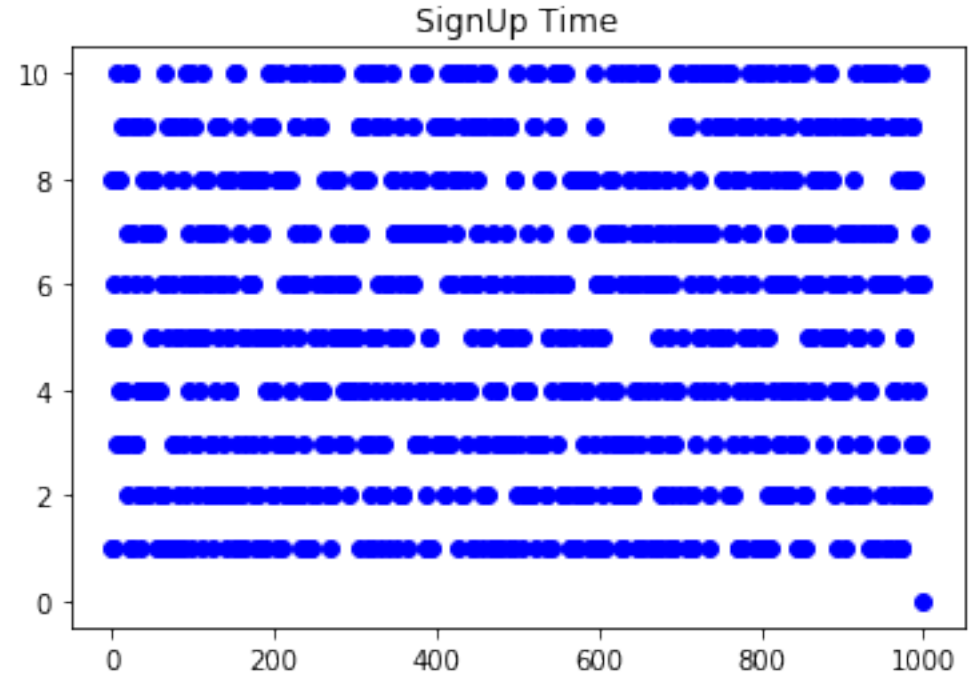

Books Per Day
1.0
0.8
0.6
0.4
0.2
0.0
0
5000
10000
15000
20000
25000
30000

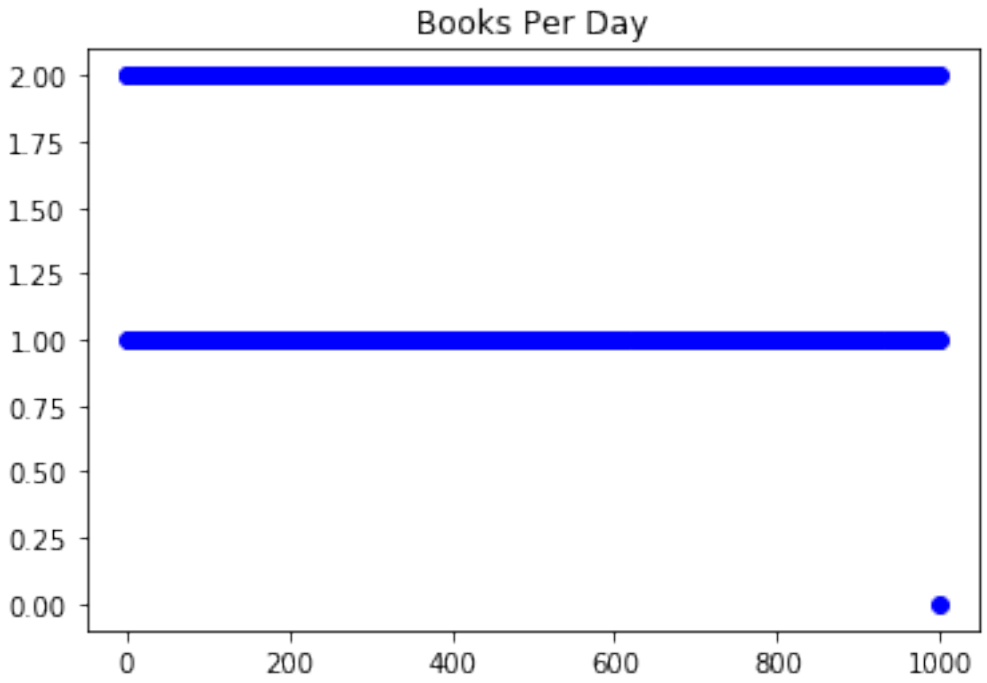


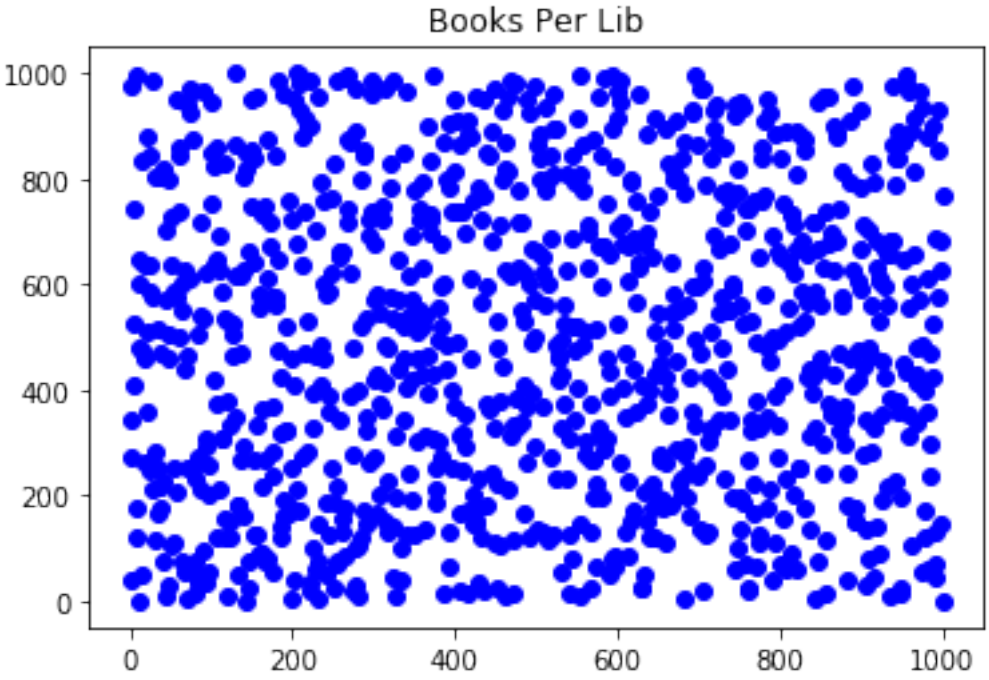


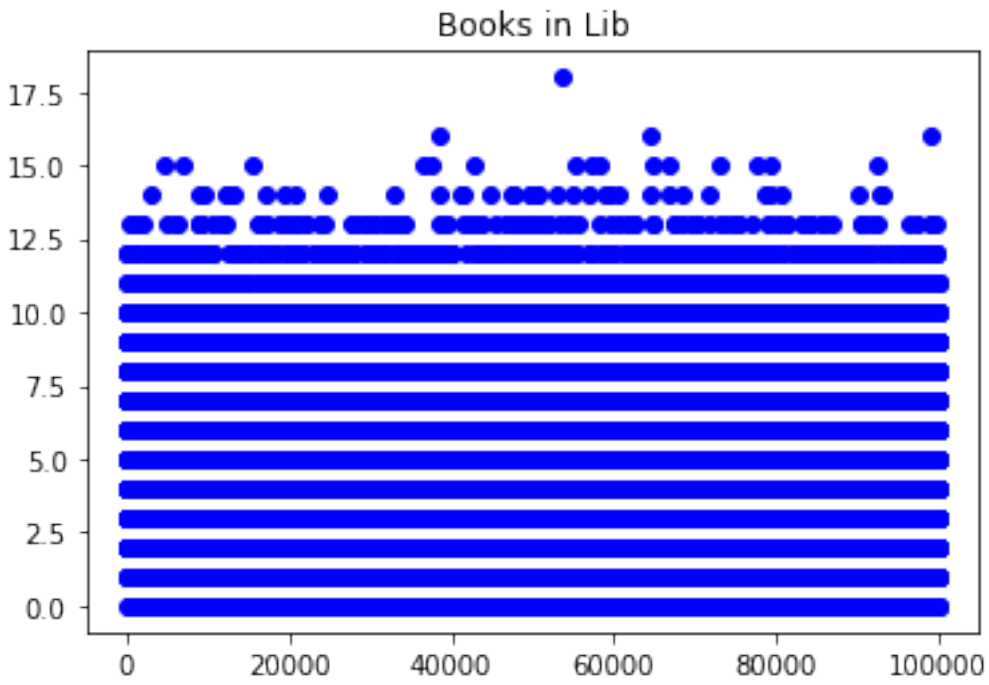
[6]:
```
plots("e_so_many_books.txt")
```


Book Score
250
200
150
100
50
0
0
20000
40000
60000
80000
100000

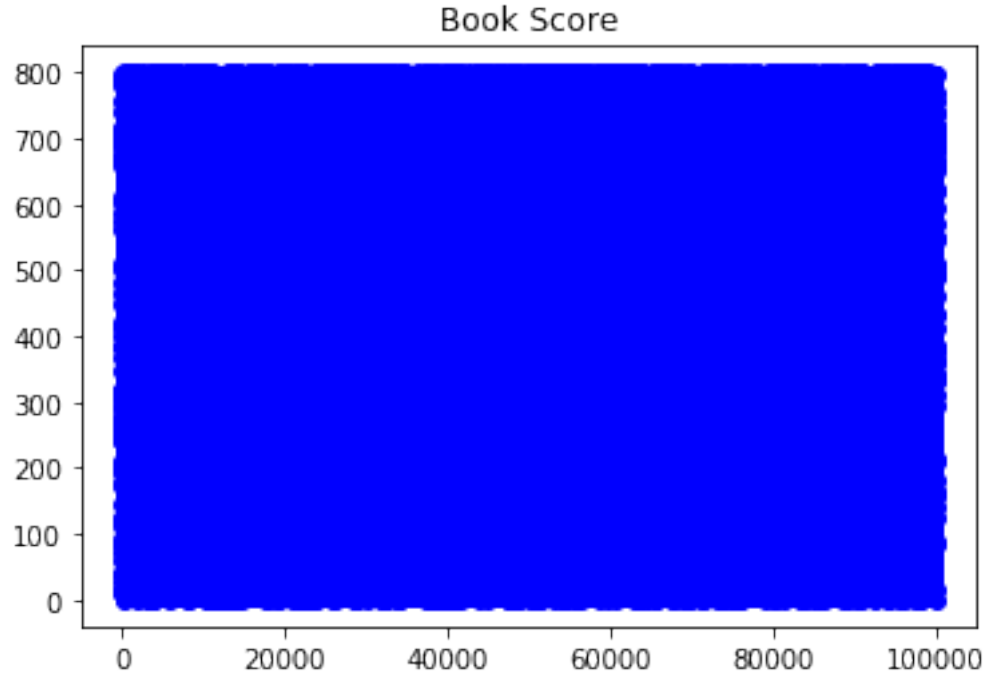

SignUp Time
10
8
6
4
2
0
0
200
400
600
800
1000

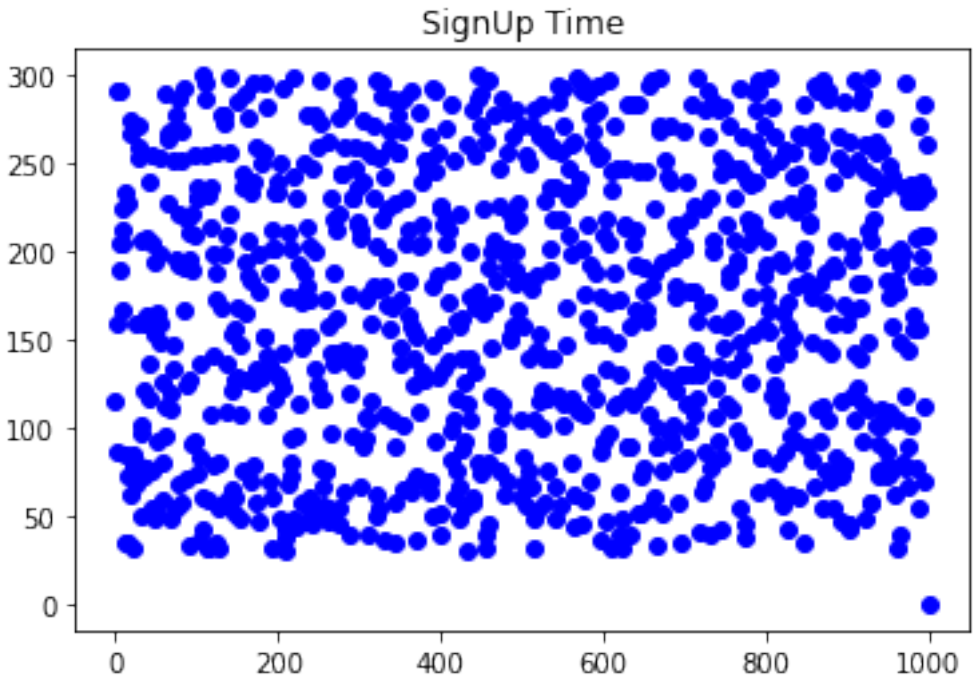

Books Per Day
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
0
200
400
600
800
1000

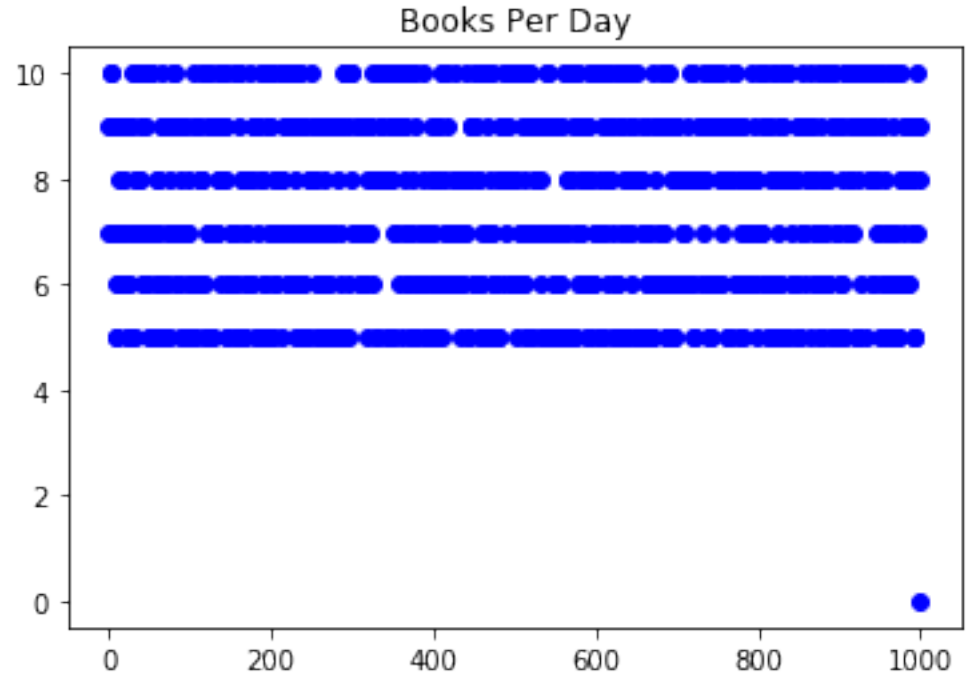

Books Per Lib
1000
800
600
400
200
0
0
200
400
600
800
1000

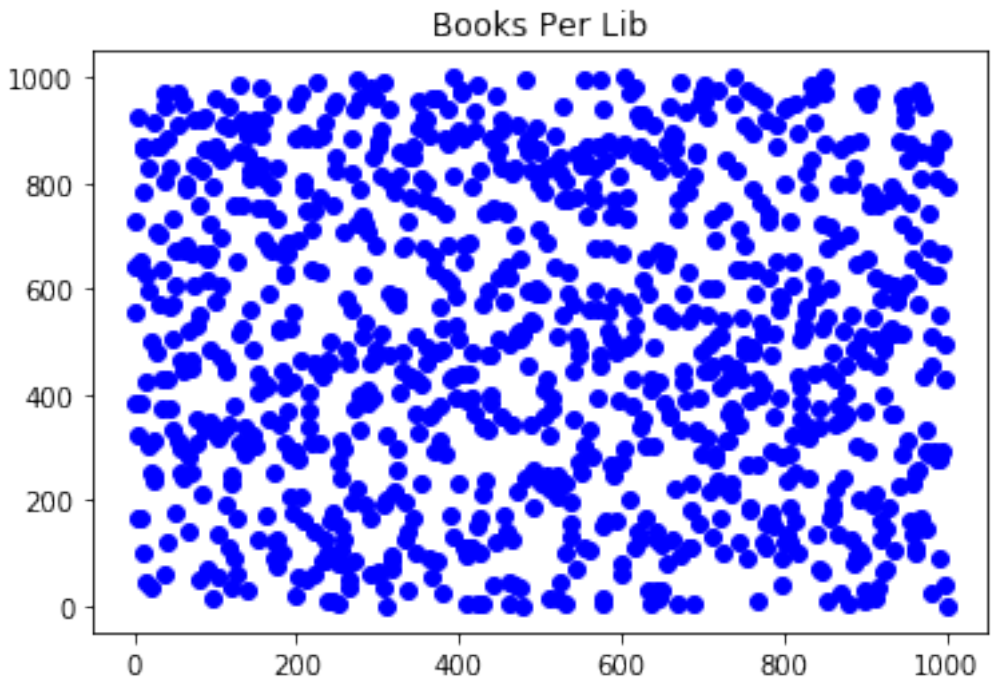


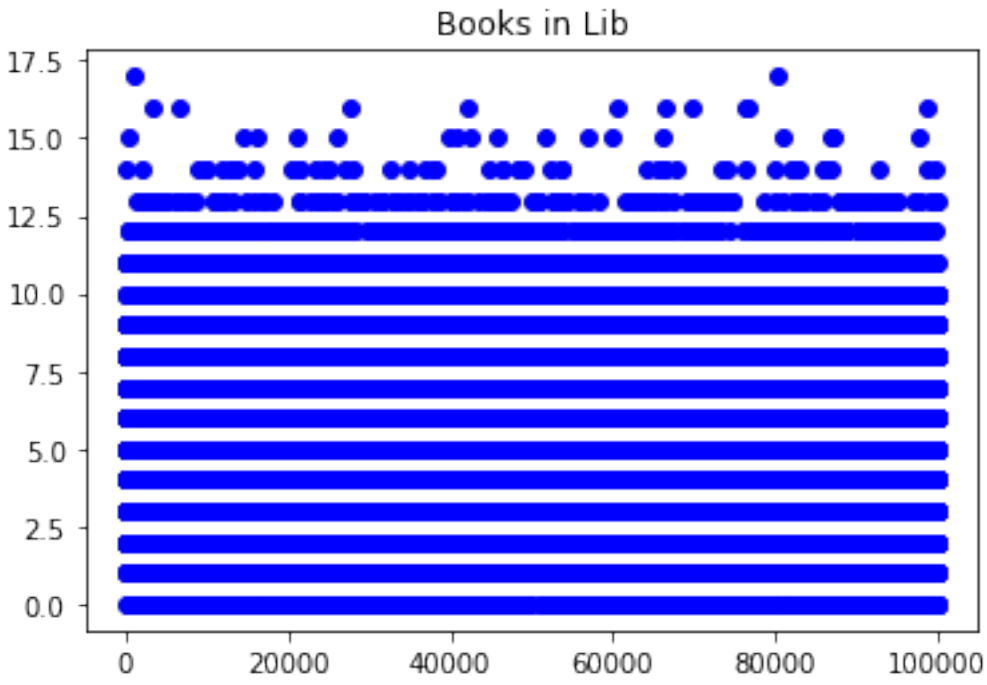
[7]:
```
plots("f_libraries_of_the_world.txt")
```




SignUp Time
300
250
200
150
100
50
0
0
200
400
600
800
1000


Books Per Day
10
8
6
4
2
0
0
200
400
600
800
1000


Books Per Lib
1000
800
600
400
200
0
0
200
400
600
800
1000


Books in Lib
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
0
20000
40000
60000
80000
100000