E

February 20, 2020

```python
In [1]: import matplotlib.pyplot as plt
        import pandas
        import numpy as np
```

```python
In [2]: f = open("e_so_many_books.txt", "r")
```

```python
In [3]: b, l, d = map(int, f.readline().split())
```

```python
In [4]: book_scores = map(int, f.readline().split())
```

```python
In [5]: lib_books_count = []
        lib_days_signup = []
        lib_speed = []
```

```python
In [6]: book_count_in_libs = dict()
```

```python
In [7]: # for bb in range(b):
        #     book_count_in_libs[bb] = 0
```

```python
In [8]: for i in range(l):
            n, t, m = map(int, f.readline().split())
            lib_books_count.append(n)
            lib_days_signup.append(t)
            lib_speed.append(m)

            books = map(int, f.readline().split())
            for book in books:
                if book not in book_count_in_libs:
                    book_count_in_libs[book] = 0

                book_count_in_libs[book] += 1
```
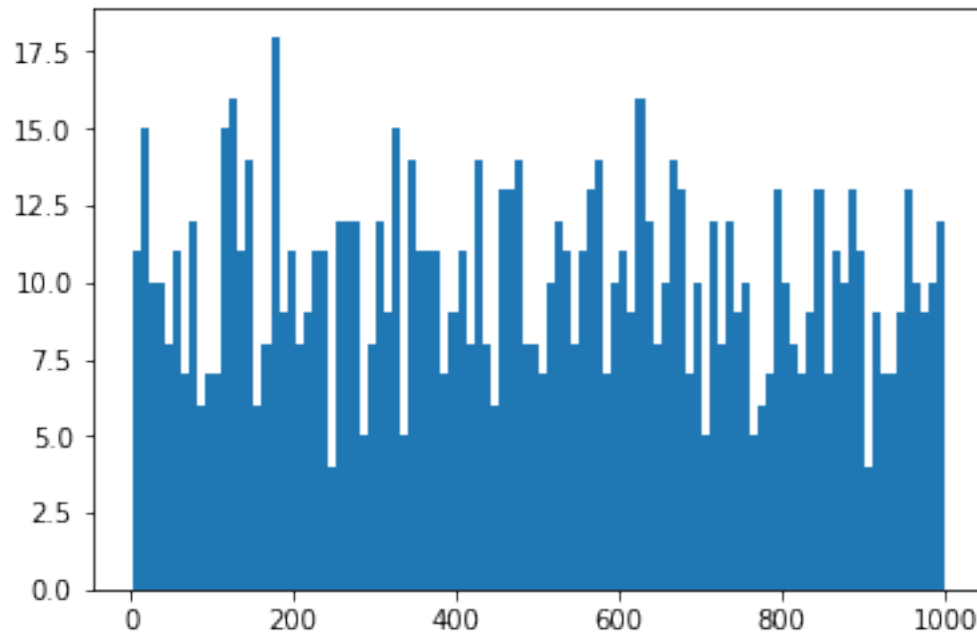
```python
In [9]: books_counts = book_count_in_libs.values()
```

```python
In [10]: print("Books", b)
         print("Libraries", l)
         print("Days", d)
```

```
('Books', 100000)
('Libraries', 1000)
('Days', 200)
```
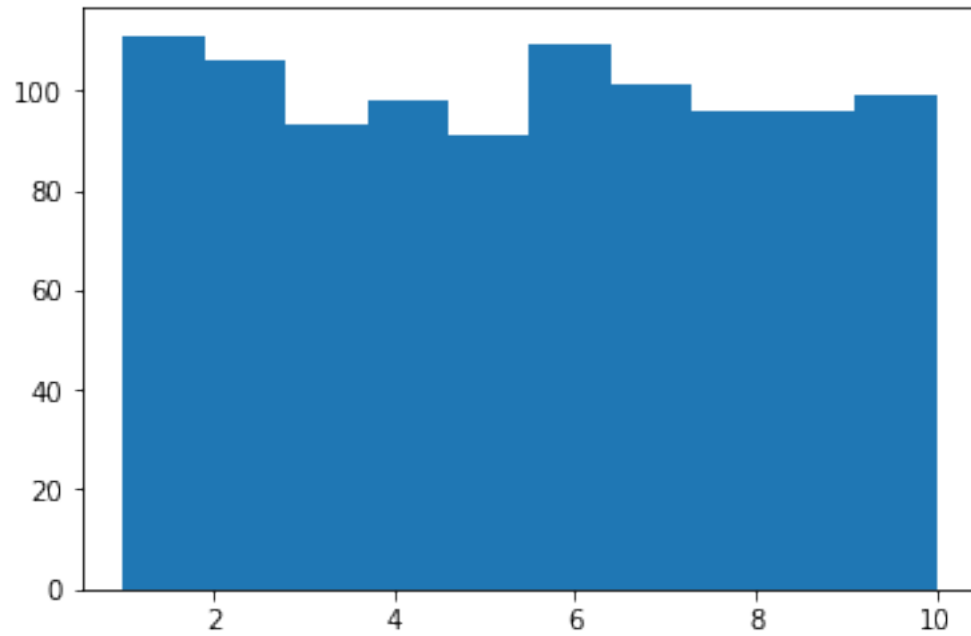
```
In [11]: print("Books per library stats")
         _ = plt.hist(lib_books_count, 100)
```

Books per library stats
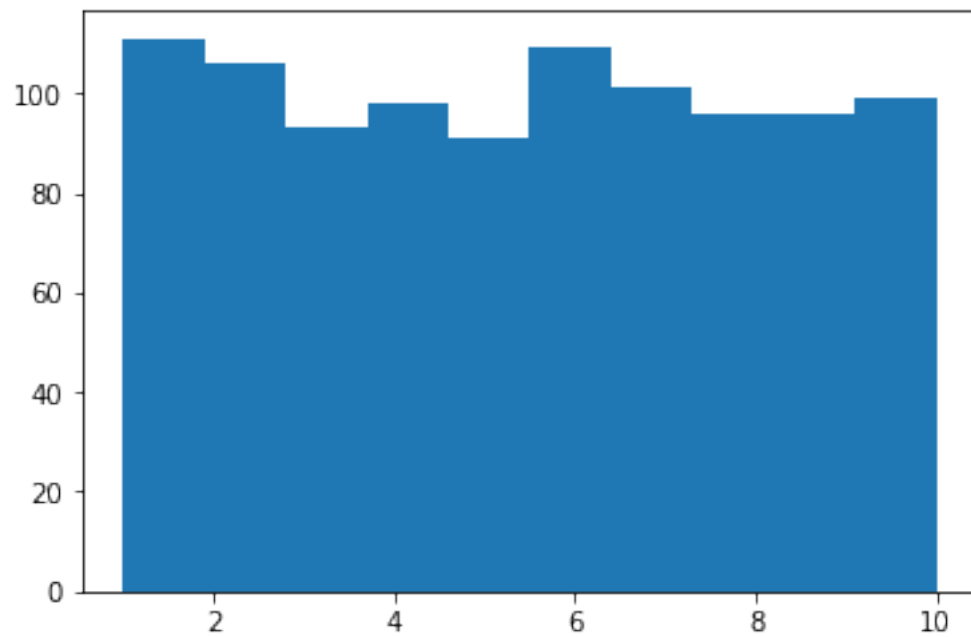


```
In [12]: print("Signup duration stats")
         _ = plt.hist(lib_days_signup, 10)
```
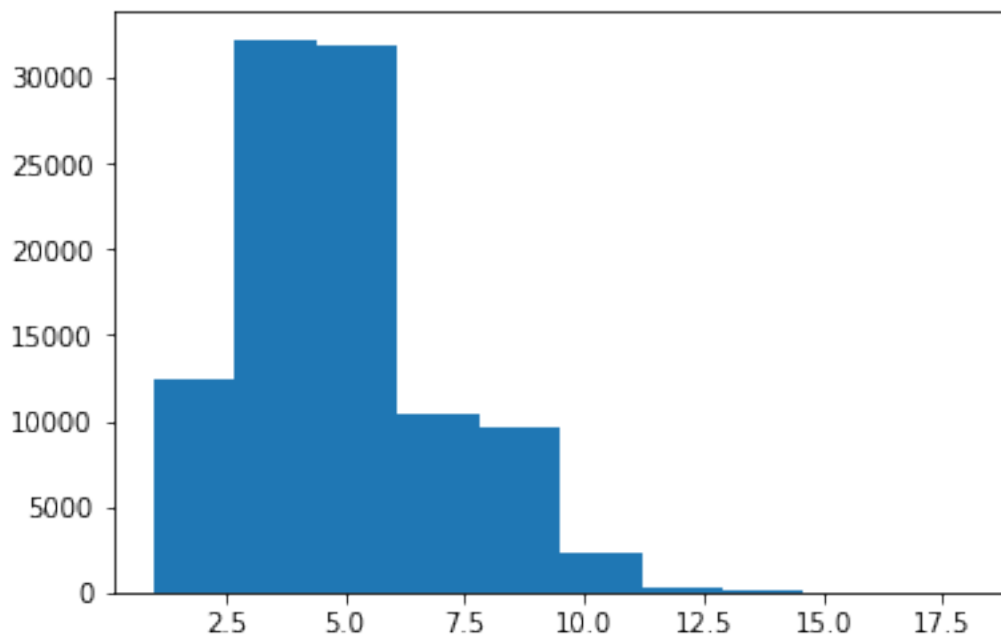
Signup duration stats

```
In [13]: print("Speed stats")
         _ = plt.hist(lib_days_signup, 10)
```

Speed stats

3

```
In [14]: print("Books per library count stats")
         _ = plt.hist(books_counts, 10)
         print(np.mean(books_counts), np.min(books_counts), np.max(books_counts), np.std(books_
```

Books per library count stats
(4.955895390070922, 1, 18, 2.180343502271195)


```
In [ ]:

In [ ]:
```