

# C

February 20, 2020

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In [42]: import matplotlib.pyplot as plt
import pandas
import numpy as np

In [43]: f = open("c_incunabula.txt", "r")

In [44]: b, l, d = map(int, f.readline().split())

In [45]: book_scores = map(int, f.readline().split())

In [46]: lib_books_count = []
lib_days_signup = []
lib_speed = []

In [47]: book_count_in_libs = dict()

In [48]: # for bb in range(b):
#         book_count_in_libs[bb] = 0

In [49]: 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

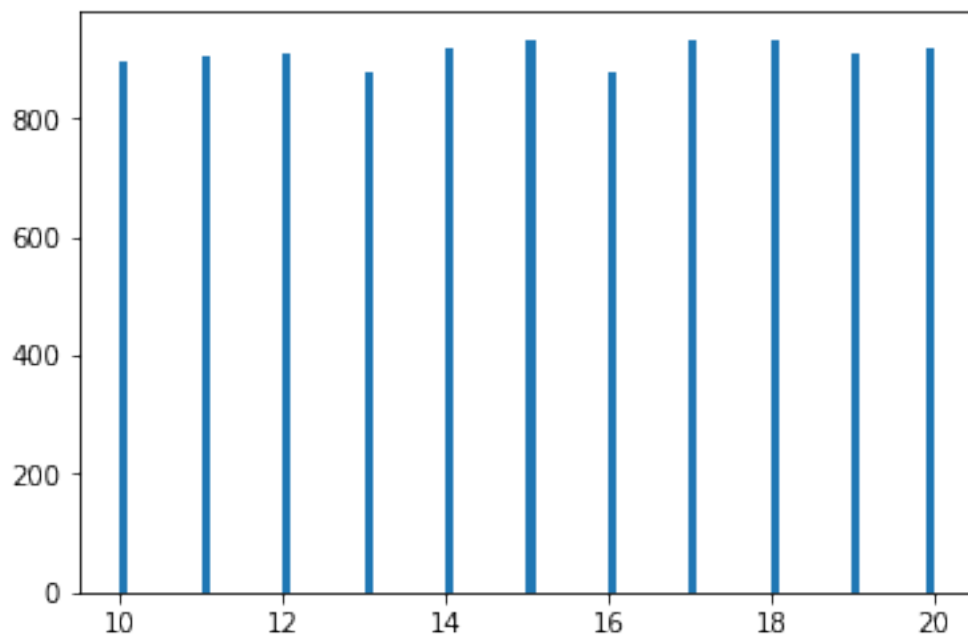
In [50]: books_counts = book_count_in_libs.values()

In [51]: print("Books", b)
print("Libraries", l)
print("Days", d)
```

```
('Books', 100000)
('Libraries', 10000)
('Days', 100000)
```

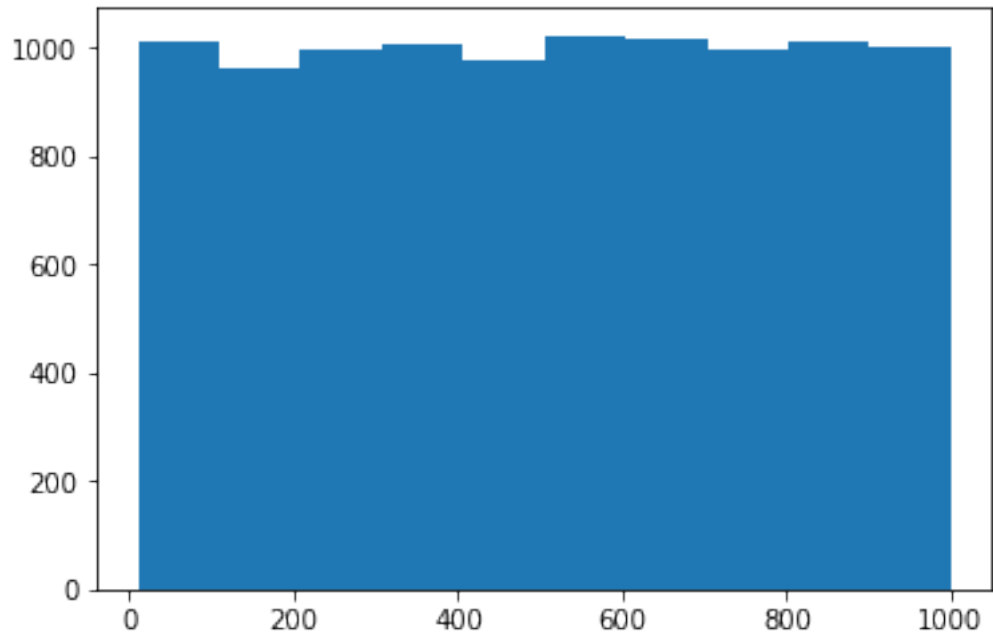
```
In [52]: print("Books per library stats")
_ = plt.hist(lib_books_count, 100)
print(np.mean(lib_books_count), np.min(lib_books_count), np.max(lib_books_count), np.
```

```
Books per library stats
(15.0282, 10, 20, 3.161108153796703)
```



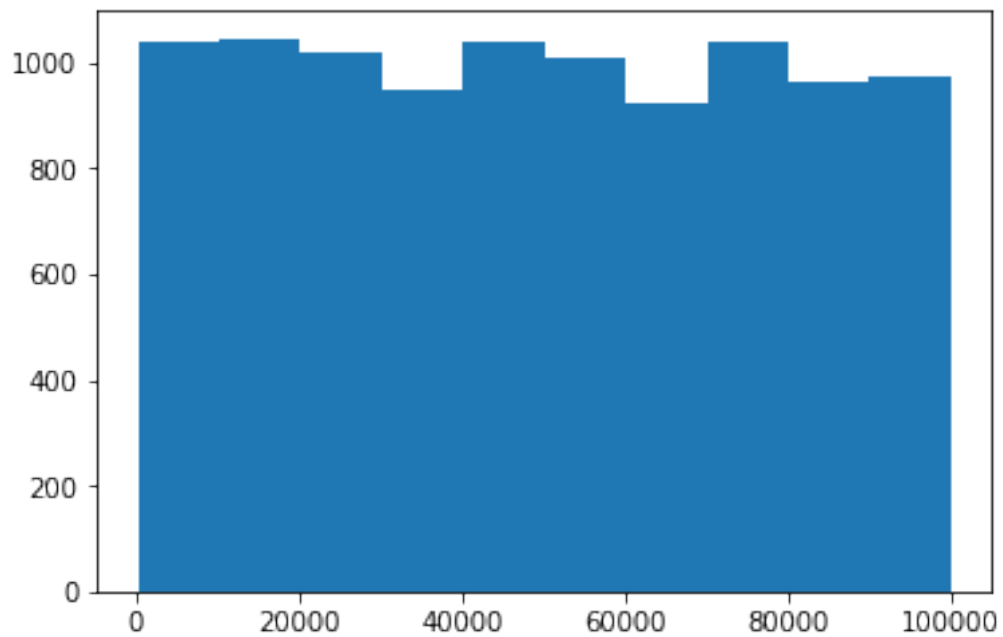
```
In [53]: print("Signup duration stats")
_ = plt.hist(lib_days_signup, 10)
print(np.mean(lib_days_signup), np.min(lib_days_signup), np.max(lib_days_signup), np.
```

```
Signup duration stats
(506.0797, 10, 1000, 285.94810953722003)
```



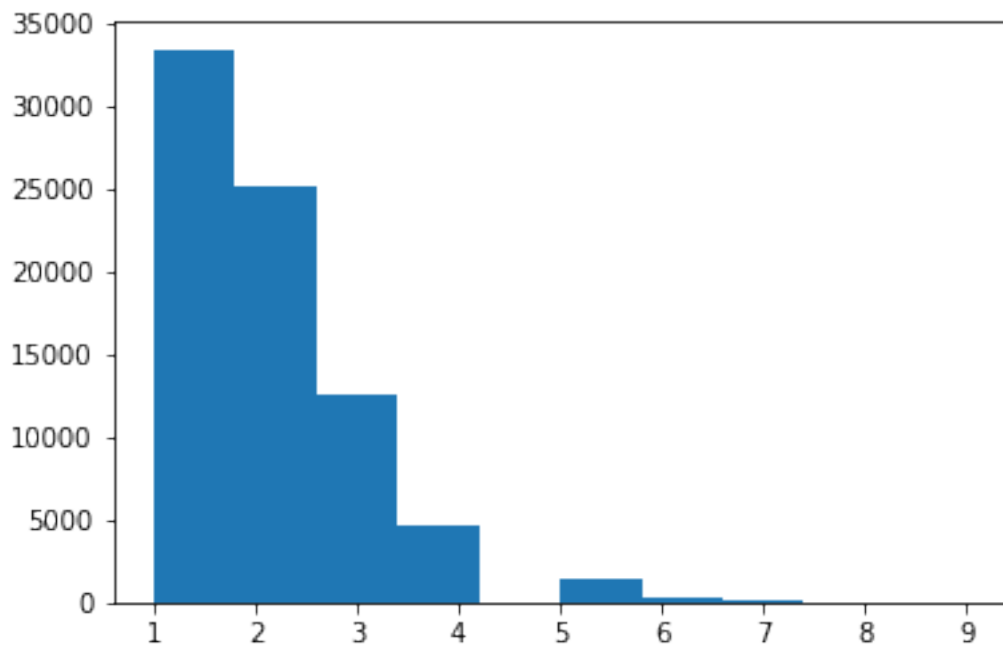
```
In [54]: print("Speed stats")
_ = plt.hist(lib_speed, 10)
print(np.mean(lib_speed), np.min(lib_speed), np.max(lib_speed), np.std(lib_speed))
```

Speed stats  
(49511.3775, 210, 99998, 28885.853359352113)



```
In [55]: print("Libraries per book stats")
_ = plt.hist(books_counts, 10)
print(np.mean(books_counts), np.min(books_counts), np.max(books_counts), np.std(books_counts))
```

```
Libraries per book stats
(1.935127478753541, 1, 9, 1.055095507025871)
```



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In [ ]:
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In [ ]:
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