Lab assignment 1

Subject:Data Structure Lab
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INPUT:

```
borrow_book = {

 'OOP': 12,
 'DM': 10,
 'DSA': 13,
 'OS': 0,
 'JAVA':12,
 'PYTHON':12
}
member_details = {
 'sojal': ['os'],
 'viraj': ['DS', 'DM'],
 'swapnil': [],
 'umaid': ['DS', 'OOP','DSA'],
 'aditya': ['DM'],
}
def avg_books(borrow_book):
 total = sum(borrow_book.values())
 count = len(borrow_book)
 return total / count
print("Average books borrowed:", avg_books(borrow_book))
def maxmin(borrow_book):
 non_zero_values = [val for val in borrow_book.values() if val != 0]
 if not non_zero_values:
  return None, None
 max_borrow = max(non_zero_values)
 min_borrow = min(non_zero_values)
 return max_borrow, min_borrow
max_b, min_b = maxmin(borrow_book)
print("Highest borrow count (excluding 0):", max_b)
print("lowest borrow count (excluding 0):", min_b)
def zero_borrowers(member_details):
 zero_count = 0
 for books in member_details.values():
  if len(books) == 0:
   zero_count += 1
 return zero_count
print("Number of members with 0 borrowings:",
zero_borrowers(member_details))
def most_frequent_borrow_book(borrow_books):
 if not borrow_books:
  return None
 return max(borrow_books, key=borrow_books.get)
print("Most frequently borrowed book:",
most_frequent_borrow_book(borrow_book))
```

```
res=dict()
x=list(val for val in borrow_book.values() if val != 0)
y=list(set(x))
for i in y :
 res[i]=x.count(i)

print(res)
```

output:-

```
Average books borrowed: 9.833333333333334
Highest borrow count (excluding 0): 13
lowest borrow count (excluding 0): 10
Number of members with 0 borrowings: 1
Most frequently borrowed book: DSA
{10: 1, 12: 3, 13: 1}
```