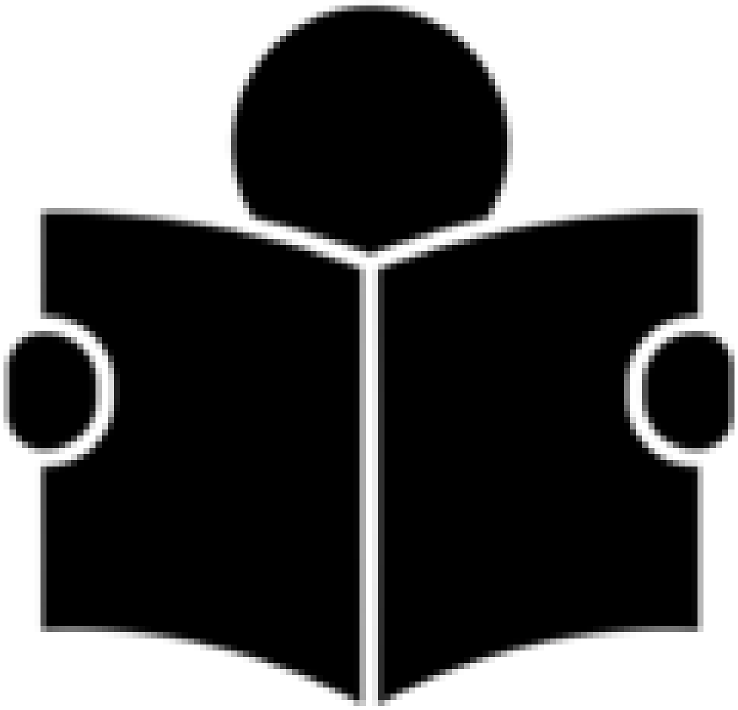
Reading Group Project Report



By:

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Contents

1. Overview

This is a program to produce a **monthly report of the group reading**. The report includes some statistics about what the group has read during the month.

Programming Language:

- Python

Requirements:

- Python (3.7)
- NumPy (1.19.0)
- Matplotlib (3.3.3)

2. Input File

- The input file format must be .txt and the Name of the file must be: inputFile (inputFile.txt)

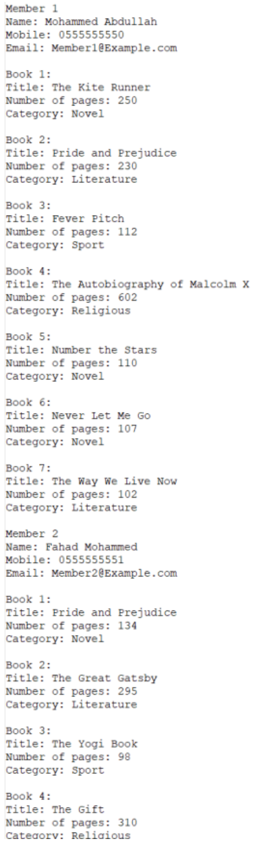
The program takes the Members information:

a. Name
b. Mobile Number
c. Email

and the books information

a. Titles of the books
b. Number of pages for each book
c. Category of each book.

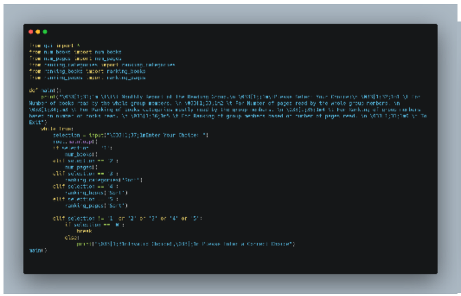
Screenshot of the input file:



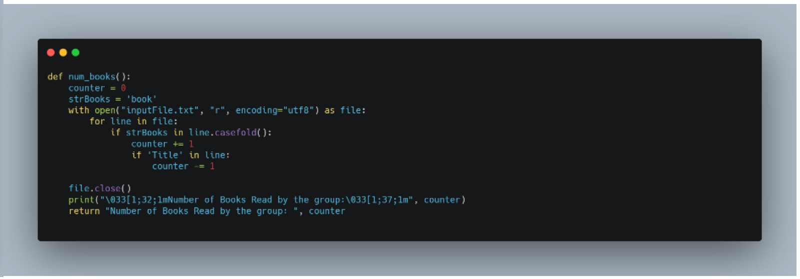
```
Member 1
Name: Mohammed Abdullah
Mobile: 0555555550
Email: Member1@Example.com

Book 1:
Title: The Kite Runner
Number of pages: 250
Category: Novel

Book 2:
Title: Pride and Prejudice
Number of pages: 230
Category: Literature

Book 3:
Title: Fever Pitch
Number of pages: 112
Category: Sport

Book 4:
Title: The Autobiography of Malcolm X
Number of pages: 602
Category: Religious

Book 5:
Title: Number the Stars
Number of pages: 110
Category: Novel

Book 6:
Title: Never Let Me Go
Number of pages: 107
Category: Novel

Book 7:
Title: The Way We Live Now
Number of pages: 102
Category: Literature

Member 2
Name: Fahad Mohammed
Mobile: 0555555551
Email: Member2@Example.com

Book 1:
Title: Pride and Prejudice
Number of pages: 134
Category: Novel

Book 2:
Title: The Great Gatsby
Number of pages: 295
Category: Literature

Book 3:
Title: The Yogi Book
Number of pages: 98
Category: Sport

Book 4:
Title: The Gift
Number of pages: 310
Category: Religious
```

3. Code

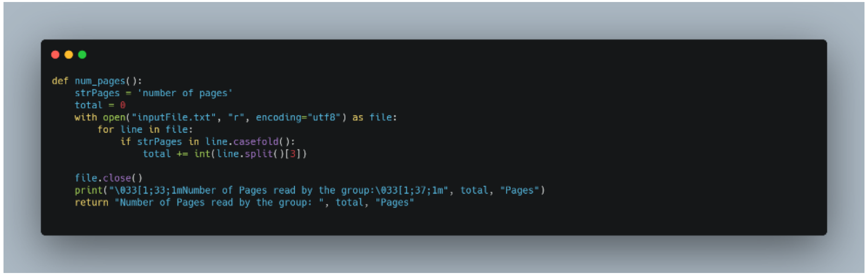
Screenshots of the code:



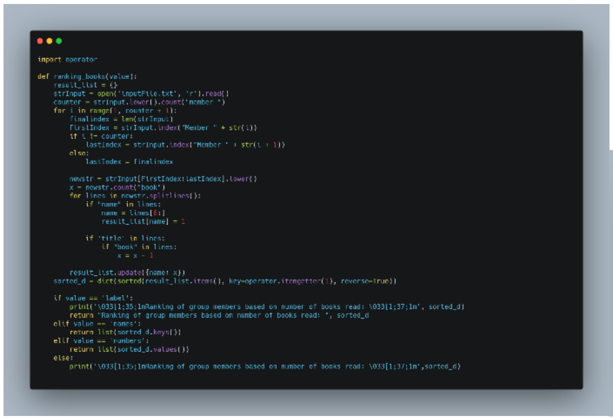
```python
from gui import *
from num_books import num_books
from num_pages import num_pages
from ranking_categories import ranking_categories
from ranking_books import ranking_books
from ranking_pages import ranking_pages

def main():
    print("\033[1;31;1m \t\t\t Monthly Report of the Reading Group.\n \033[1;37;1m\tPlease Select Your Choice:\n \033[1;32;1m1 \t For Number of books read by the whole group members. \n \033[1;33;1m2 \t For Number of pages read by the whole group members. \n \033[1;34;1m3 \t For Ranking of books categories mostly read by the group members. \n \033[1;35;1m4 \t For Ranking of group members based on number of books read. \n \033[1;36;1m5 \t For Ranking of group members based on number of pages read. \n \033[1;31;1m6 \t To Exit")
    while True:
        selection = input("\033[1;37;1mEnter Your Choice: ")
        root.mainloop()
        if selection == '1':
            num_books()
        elif selection == '2':
            num_pages()
        elif selection == '3':
            ranking_categories('Sort')
        elif selection == '4':
            ranking_books('Sort')
        elif selection == '5':
            ranking_pages('Sort')

        elif selection != '1' or '2' or '3' or '4' or '5':
            if selection == '6':
                break
            else:
                print("\033[1;31mInvalid Choice!,\033[1m Please Enter a Correct Choice")
main()
```



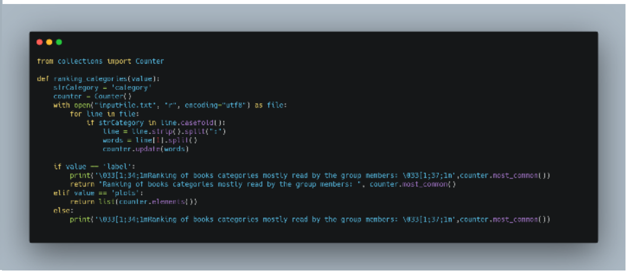
```python
def num_books():
    counter = 0
    strBooks = 'book'
    with open("inputFile.txt", "r", encoding="utf8") as file:
        for line in file:
            if strBooks in line.casefold():
                counter += 1
                if 'Title' in line:
                    counter -= 1

    file.close()
    print("\033[1;32;1mNumber of Books Read by the group:\033[1;37;1m", counter)
    return "Number of Books Read by the group: ", counter
```



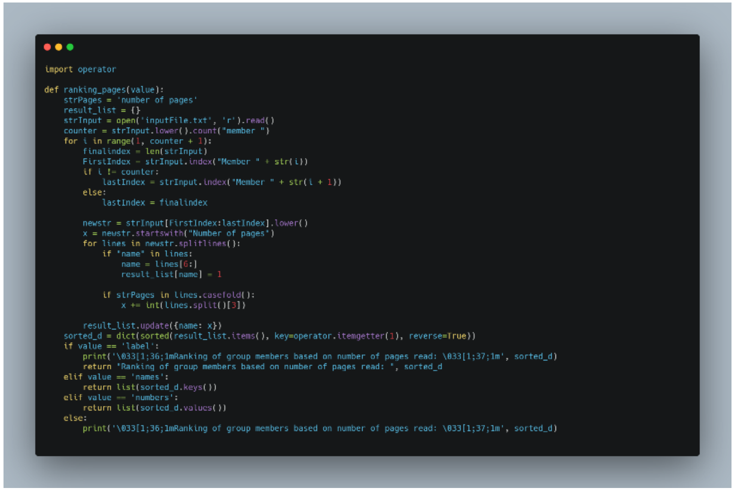
```python
def num_pages():
    strPages = 'number of pages'
    total = 0
    with open("inputFile.txt", "r", encoding="utf8") as file:
        for line in file:
            if strPages in line.casefold():
                total += int(line.split()[3])

    file.close()
    print("\033[1;33;1mNumber of Pages read by the group:\033[1;37;1m", total, "Pages")
    return "Number of Pages read by the group: ", total, "Pages"
```



```python
import operator

def ranking_books(value):
    result_list = {}
    strInput = open('inputFile.txt', 'r').read()
    counter = strInput.lower().count('member ')
    for i in range(1, counter + 1):
        finalindex = len(strInput)
        FirstIndex = strInput.index("Member " + str(i))
        if i != counter:
            lastIndex = strInput.index("Member " + str(i + 1))
        else:
            lastIndex = finalindex

        newstr = strInput[FirstIndex:lastIndex].lower()
        x = newstr.count('book')
        for lines in newstr.splitlines():
            if "name" in lines:
                name = lines[6:]
                result_list[name] = 1

            if 'title' in lines:
                if "book" in lines:
                    x = x - 1

        result_list.update({name: x})
    sorted_d = dict(sorted(result_list.items(), key=operator.itemgetter(1), reverse=True))

    if value == 'label':
        print('\033[1;35;1mRanking of group members based on number of books read: \033[1;37;1m', sorted_d)
        return 'Ranking of group members based on number of books read: ', sorted_d
    elif value == 'names':
        return list(sorted_d.keys())
    elif value == 'numbers':
        return list(sorted_d.values())
    else:
        print('\033[1;35;1mRanking of group members based on number of books read: \033[1;37;1m',sorted_d)
```



```python
from collections import Counter

def ranking_categories(value):
    strCategory = 'category'
    counter = Counter()
    with open("inputFile.txt", "r", encoding="utf8") as file:
        for line in file:
            if strCategory in line.casefold():
                line = line.strip().split(":")
                words = line[1].split()
                counter.update(words)

    if value == 'label':
        print('\033[1;34;1mRanking of books categories mostly read by the group members: \033[1;37;1m',counter.most_common())
        return "Ranking of books categories mostly read by the group members: ", counter.most_common()
    elif value == 'plots':
        return list(counter.elements())
    else:
        print('\033[1;34;1mRanking of books categories mostly read by the group members: \033[1;37;1m',counter.most_common())
```



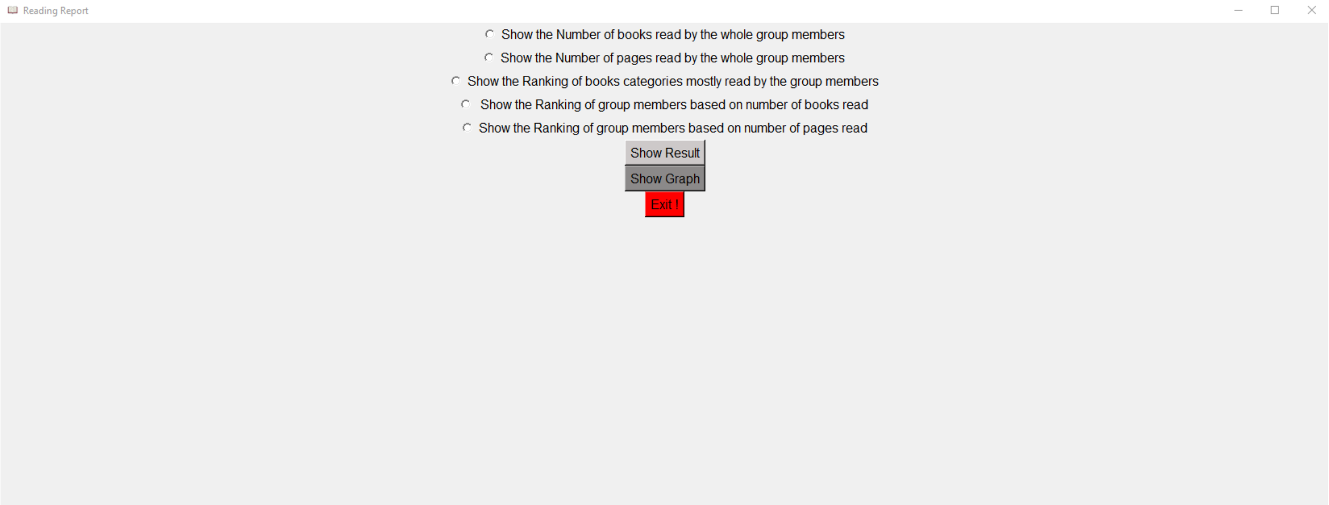
```python
import operator

def ranking_pages(value):
    strPages = 'number of pages'
    result_list = {}
    strInput = open('inputFile.txt', 'r').read()
    counter = strInput.lower().count("member ")
    for i in range(1, counter + 1):
        finalindex = len(strInput)
        FirstIndex = strInput.index("Member " + str(i))
        if i != counter:
            lastIndex = strInput.index("Member " + str(i + 1))
        else:
            lastIndex = finalindex

        newstr = strInput[FirstIndex:lastIndex].lower()
        x = newstr.startswith("Number of pages")
        for lines in newstr.splitlines():
            if "name" in lines:
                name = lines[6:]
                result_list[name] = 1

            if strPages in lines.casefold():
                x += int(lines.split()[3])

        result_list.update({name: x})
    sorted_d = dict(sorted(result_list.items(), key=operator.itemgetter(1), reverse=True))
    if value == 'label':
        print('\033[1;36;1mRanking of group members based on number of pages read: \033[1;37;1m', sorted_d)
        return 'Ranking of group members based on number of pages read: ', sorted_d
    elif value == 'names':
        return list(sorted_d.keys())
    elif value == 'numbers':
        return list(sorted_d.values())
    else:
        print('\033[1;36;1mRanking of group members based on number of pages read: \033[1;37;1m', sorted_d)
```

4. Language Features

Language Features Table		
Language Feature	Class/Filename	Line No.
If /else	main.py	18 – 33
	num_books.py	6,8
	num_pages.py	6
	ranking_categories.py	8, 13-19
	ranking_books.py	10-13, 18,22-24,29-37,11-14, 19-24, 28-36
	ranking_pages.py	33—48,52-56
	gui.py	
switch	main.py	8
for loop	num_books.py	5
	ranking_categories.py	7
	ranking_books.py	7,17
	ranking_pages.py	8,18
while loop	main.py	11

Functions	main.py	10
	num_books.py	
	num_pages.py	1
	ranking_categories.py	1
	ranking_books.py	3
	ranking_pages.py	3
	gui.py	3
	graphs.py	32, 50, 7, 15, 27
Open(inputFile.txt)	num_books.py	4
	num_pages.py	4
	ranking_categories.py	6
	ranking_books.py	5
	ranking_pages.py	6
collections (Counter)	ranking_categories.py	11
Operator. (itemgetter)	ranking_books.py	27
	ranking_pages.py	27
Dictionaries	ranking_books.py	4
	ranking_pages.py	5
tkinter module (GUI)	gui.py	9 - 67
NumPy	graphs.py	18,30
Matplotlib	graphs.py	9-13
		19-25
		31-37

5. Graphical User Interface (GUI)



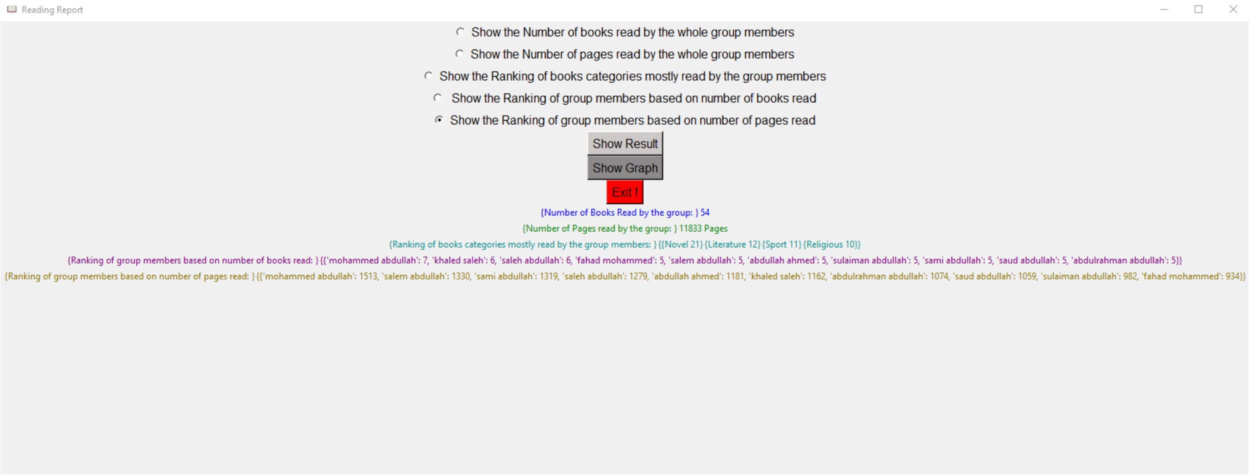
○ Show the Number of books read by the whole group members
○ Show the Number of pages read by the whole group members
○ Show the Ranking of books categories mostly read by the group members
○ Show the Ranking of group members based on number of books read
○ Show the Ranking of group members based on number of pages read

The program has a **Graphical User Interface (GUI)** which make the program be easier and if you want to use the compiler for inputs and outputs, you can click on X and use the compiler.

You can choose the information you want to see then

- Click **Show Result** to get the statistics
- Click **Show Graph** to see the graph for your choice
- Click **Exit** to close the program.

Screenshot of [Show Result]:



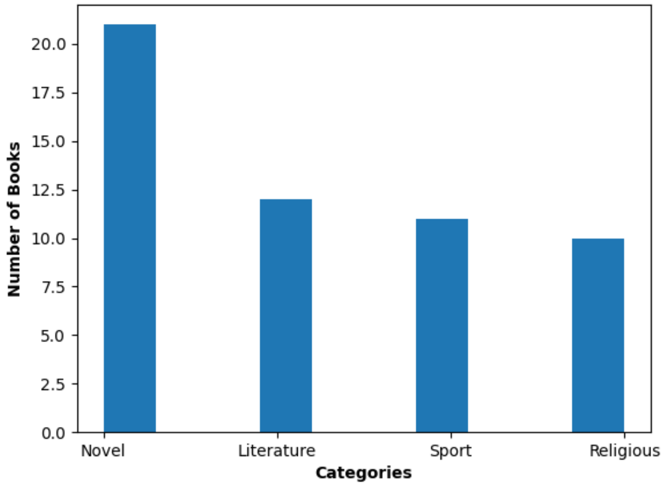
○ Show the Number of books read by the whole group members
○ Show the Number of pages read by the whole group members
○ Show the Ranking of books categories mostly read by the group members
○ Show the Ranking of group members based on number of books read
● Show the Ranking of group members based on number of pages read

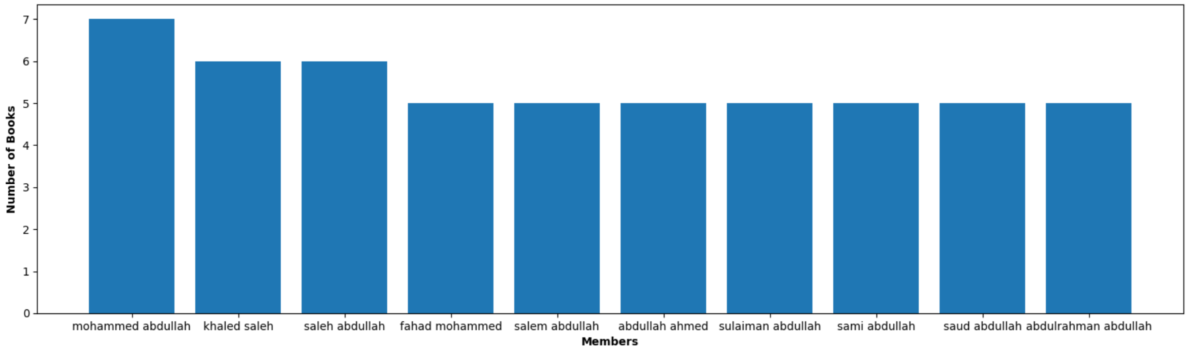
```
{Number of Books Read by the group: } 54
{Number of Pages read by the group: } 11833 Pages
{Ranking of books categories mostly read by the group members: } {{Novel 21} {Literature 12} {Sport 11} {Religious 10}}
{Ranking of group members based on number of books read: } {{'mohammed abdullah': 7, 'khaled saleh': 6, 'saleh abdullah': 6, 'fahad mohammed': 5, 'salem abdullah': 5, 'abdullah ahmed': 5, 'sulaiman abdullah': 5, 'sami abdullah': 5, 'saud abdullah': 5, 'abdulrahman abdullah': 5}}
{Ranking of group members based on number of pages read: } {{'mohammed abdullah': 1513, 'salem abdullah': 1330, 'sami abdullah': 1319, 'saleh abdullah': 1279, 'abdullah ahmed': 1181, 'khaled saleh': 1162, 'abdulrahman abdullah': 1074, 'saud abdullah': 1059, 'sulaiman abdullah': 982, 'fahad mohammed': 934}}
```

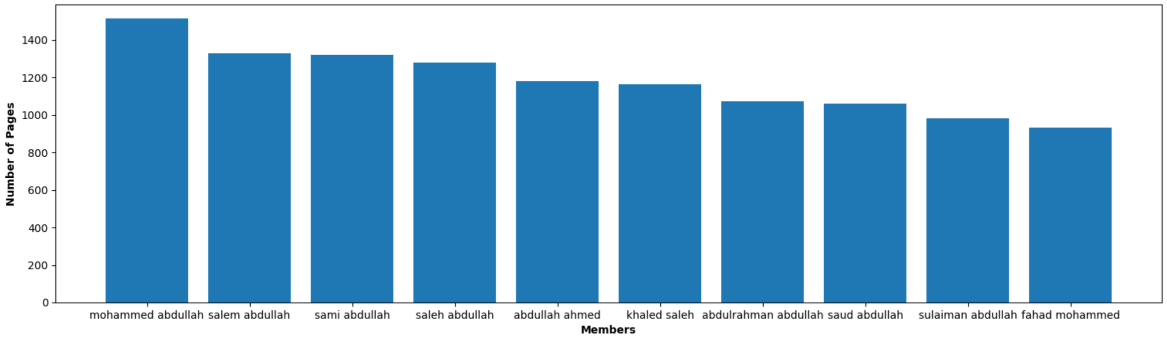
6. Graphs

If you click on Show Graph in the Ranking Choices, you will get a graph for the choice

Screenshots of [Show Graph]:







7. Input

The Outputs will be printing according to these following inputs [using compiler]:

Enter 1 **To show the Number of books read by the whole group members.**

Enter 2 **To show the Number of pages read by the whole group members.**

Enter 3 **To show the Ranking of books categories mostly read by the group members.**

Enter 4 **To show the Ranking of group members based on number of books read.**

Enter 5 **To show the Ranking of group members based on number of pages read.**

Enter 0 **To Exit.**

- If the user Enter a wrong input, For Example **Enter 6** The Output will be: **"Invalid Choice! Please Enter a correct choice"**, and make the user enter an input again

8. Output

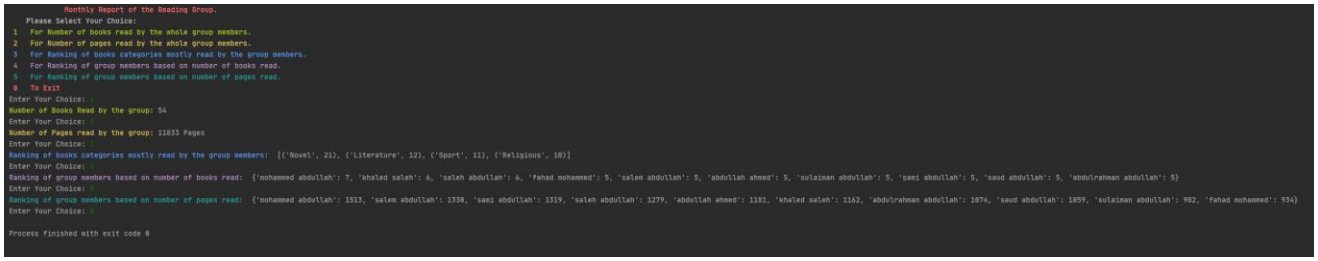
The output will be printed according to the user choice (input) [using compiler], you can check the Inputs in Page: 10.

There is 5 Outputs:

- Number of books read by the whole group members.
- Number of pages read by the whole group members.
- Ranking of books categories mostly read by the group members [show the number alongside the category in the ranked list]
- Ranking of group members based on number of books read

  [show the number alongside the member’s name in the ranked list]
- Ranking of group members based on number of pages read [show the number alongside the member’s name in the ranked list]

Screenshot of the Output:



```
          Monthly Report of the Reading Group.
   Please Select Your Choice:
 1   For Number of books read by the whole group members.
 2   For Number of pages read by the whole group members.
 3   For Ranking of books categories mostly read by the group members.
 4   For Ranking of group members based on number of books read.
 5   For Ranking of group members based on number of pages read.
 0   To Exit
Enter Your Choice: 1
Number of Books Read by the group: 54
Enter Your Choice: 2
Number of Pages read by the group: 11833 Pages
Enter Your Choice: 3
Ranking of books categories mostly read by the group members:  [('Novel', 21), ('Literature', 12), ('Sport', 11), ('Religious', 10)]
Enter Your Choice: 4
Ranking of group members based on number of books read:  {'mohammed abdullah': 7, 'khaled saleh': 6, 'saleh abdullah': 6, 'fahad mohammed': 5, 'salem abdullah': 5, 'abdullah ahmed': 5, 'sulaiman abdullah': 5, 'sami abdullah': 5, 'saud abdullah': 5, 'abdulrahman abdullah': 5}
Enter Your Choice: 5
Ranking of group members based on number of pages read:  {'mohammed abdullah': 1513, 'salem abdullah': 1330, 'sami abdullah': 1319, 'saleh abdullah': 1279, 'abdullah ahmed': 1181, 'khaled saleh': 1162, 'abdulrahman abdullah': 1074, 'saud abdullah': 1059, 'sulaiman abdullah': 982, 'fahad mohammed': 934}
Enter Your Choice: 0

Process finished with exit code 0
```

9. Conclusion

This program has been written in **Python** and its **produce a monthly report of the group reading.**

The program takes the **members information** and **Member Books information** from **input file (inputFile.txt).**

The program has a **Graphical User Interface (GUI)** which make the program be easier and if you want to use the compiler for inputs and outputs, you can click on X and use the compiler.

There is 5 Outputs:

- Number of books read by the whole group members.
- Number of pages read by the whole group members.
- Ranking of books categories mostly read by the group members [show the number alongside the category in the ranked list].
- Ranking of group members based on number of books read [show the number alongside the member's name in the ranked list].
- Ranking of group members based on number of pages read [show the number alongside the member's name in the ranked list].

To print the 5 Outputs, you need to choose from these following inputs [using compiler]:

Enter 1 **To show the Number of books read by the whole group members.**

Enter 2 **To show the Number of pages read by the whole group members.**

Enter 3 **To show the Ranking of books categories mostly read by the group members.**

Enter 4 **To show the Ranking of group members based on number of books read.**

Enter 5 **To show the Ranking of group members based on number of pages read.**

Enter 0 **To Exit.**

10. Appendix

The source code can be found at the following GitHub repository:

http://github.com/Alowirdhi/ReadingReport