

GCS 150 - DIGITAL SKILLS

GROUP - 3 PROJECT REPORT

Group Members :

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Course Learning outcomes

CLO2: Developing algorithms to solve problems incorporating the concept of data abstraction in a computer program. [PLO: b]

CLO3: Apply fundamental programming concepts, such as variables, loops, conditionals, functions, and arrays, in programming assignments. [PLO: f]

CLO4: Analyze existing programs to identify problems or potential improvements. [PLO: a]

CLO5: Working in groups to construct working programs for real-world problems. [PLO: e]

Advantages of using python -

- **Extensive library:** Python gives the client a tremendous library. Python's standard library is gigantic, and around each function one should perform is accessible in its library. Usually since it includes a tremendously strong community and corporate sponsorship. External libraries are not utilized by clients whereas working with Python.
- **Simple to utilize and learn:** For beginners, Python is clear to utilize. It may be a high-level programming language, and its sentence structure is just like the English dialect. These reasons make the language simple to memorize and adapt to. Compared to Java and C, in Python, the same errand can be performed utilizing less lines of code. As a result of its simple learning, the standards in Python can be executed quicker compared to other dialects.
- **Adaptability:** This language is exceptionally flexible, and subsequently it permits the client to undertake modern things. The clients can create new sorts of the application utilizing Python programming language. The language does not limit the client from attempting something different. Other programming languages don't give this sort of adaptability and flexibility, and subsequently Python is more favored in these things.
- **Supportive community:** The Python language was made a long time back, and thus it features a developed community that can back up each sort of designer, beginning from beginners' level to master level. There are sufficient guides, instructional exercises, and documentation accessible on the Python programming dialect, which makes a difference the programmers to understand the language quicker and way better. Since of its strong community, Python has rapid development compared to other languages.

Dis-advantages of using python -

- **Memory utilization:** Python encompasses a exceptionally high memory utilization. Usually because it is adaptable to the information sorts. It employs expansive sums of memory. Python isn't a great choice for errands where the client needs to optimize memory, i.e., a memory-intensive dialect.
- **Simplicity:** Python may be a straightforward and easy-to-use programming dialect which is additionally an impediment of the language. The clients of Python get so accustomed to its simple language structure and broad library include that they confront issues whereas learning other programming languages.
- **Mobile development:** Python is solid in server platforms and desktops, and thus it may be a fantastic server-side programming language. But it isn't appropriate for portable development. For mobile development, Python may be a delicate language. Since it isn't memory proficient and incorporates a delayed power for preparing, due to these reasons, Python does not have numerous built-in mobile applications

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Functions and their execution :

- **Function 1**

```
def choosing_option():
    print('Which option do you want to carry out:\n'
          '1) Store item information: name, type, and quantity\n'
          '2) Display all items from the same type \n'
          '3) Edit one item quantity\n'
          '4) Delete an item\n'
          '5) Add an item\n'
          '6) Sort items ascending or descending\n'
          '7) Close the program\n')

    choosing_option = input('Enter your number here: ')

    if choosing_option == '1':
        store()
    elif choosing_option == '2':
        display()
    elif choosing_option == '3':
        edit()
    elif choosing_option == '4':
        delete()
    elif choosing_option == '5':
        add()
    elif choosing_option == '6':
        sort()
    else:
        exit_program()
```

- This function is assigned for the user to log in and get access to the later on program

```
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending
7) Close the program
```

Enter your number here:

- The Run of Function 1

Function 2 :

```

def display():
    found = False
    search_type = str(input("Which product's type do you want to display?"))
    makeup_file = open('makeup.txt','r')
    makeup = makeup_file.readline()
    line = makeup_file.readline()
    while line != '':
        quantity = makeup_file.readline()
        line = line.rstrip('\n')
        if line == search_type:
            print('Product:',makeup)
            print('Type:', type)
            print('Quantity',quantity)
            found = True
        line = makeup_file.readline()
    makeup_file.close()
    if not found:
        print('That type was not available')

```

- This function is created to enable the user to display all items from the same type

```

/Users/ameeraattiah/PycharmProjects/CS_project/venv/bin/python /Users/ameeraattiah/PycharmProjects/CS_project/main.py
Welcome to Sephora

Enter the Password:1234
The password is correct
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending

Enter your number here: 2
Which product's type do you want to display?face
Product: mascara

Type: <class 'type'>
Quantity 2

Do you want to carry out another option? (yes = y, no = n) n
Closing the Program . . .

Process finished with exit code 0

```

- The Run Of Function 2

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Function 3:

```
def choosing_option():
    print('Which option do you want to carry out:\n'
          '1) Store item information: name, type, and quantity\n'
          '2) Display all items from the same type \n'
          '3) Edit one item quantity\n'
          '4) Delete an item\n'
          '5) Add an item\n'
          '6) Sort items ascending or descending\n'
          '7) Close the program\n')

choosing_option = input('Enter your number here: ')

if choosing_option == '1':
    store()
elif choosing_option == '2':
    display()
elif choosing_option == '3':
    edit()
elif choosing_option == '4':
    delete()
elif choosing_option == '5':
    add()
elif choosing_option == '6':
    sort()
else:
    exit_program()
```

- This function is assigned for the user to choose the option they want to implement

```
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending
7) Close the program
```

- The Run of Function 3

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- Function 4:

```
def store():
    makeup_file = open('makeup.txt', 'w')
    print('Enter the following data for the makeup products:')
    answer = 'y'

    while answer == 'y' or answer == 'Y':
        makeup = str(input('Enter the name of the product:'))
        type = str(input('Enter the type of the product (face,eye,lip):'))
        quantity = str(input('Enter the quantity of the product:'))
        print('')

        makeup_file.write(str(makeup + '\n'))
        makeup_file.write(str(type + '\n'))
        makeup_file.write(str(quantity) + '\n')

        answer = input('Do you want to add another product? (yes = y,no = n)')

    makeup_file.close()
    print('The information has been saved in makeup.txt :')
```

- This function is designed to make the user store the product's information: name, type and quantity

```
Enter your number here: 1
Enter the following data for the makeup products:
Enter the name of the product:blusher
Enter the type of the product (face,eye,lip):face
Enter the quantity of the product:3

Do you want to add another product? (yes = y,no = n)y
Enter the name of the product:lipgloss
Enter the type of the product (face,eye,lip):lip
Enter the quantity of the product:5

Do you want to add another product? (yes = y,no = n)n
The information has been saved in makeup.txt :
Do you want to carry out another option? (yes = y, no = n) n
Closing the Program . . .
```

```
1 blusher
2 face
3
4 lipgloss
5 lip
6 5
7
```

- The Run of The Function

- In The File

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- Function 5 :

```
def edit():
    found = False

    search = input('Enter a description to search for: ')
    new_quantity = int(input('Enter the new quantity: '))

    makeup_file = open('makeup.txt', 'r')
    temp_file = open('temp.txt', 'w')

    name = makeup_file.readline()

    while name != '':
        type = makeup_file.readline()
        quantity = makeup_file.readline()
        name = name.rstrip('\n')
        type = type.rstrip('\n')
        quantity = quantity.rstrip('\n')

        if name == search:
            temp_file.write(name + '\n')
            temp_file.write(type + '\n')
            temp_file.write(str(new_quantity) + '\n')

            found = True
        else:
            temp_file.write(name + '\n')
            temp_file.write(type + '\n')
            temp_file.write(str(quantity) + '\n')

    makeup_file.close()
    temp_file.close()
```

- The function in which the user can edit an item's quantity

```
Enter the Password:1234
The password is correct
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending
7) Close the program

Enter your number here: 3
Enter a description to search for: lipgloss
Enter the new quantity: 9
The file has been updated.
Do you want to carry out another option? (yes = y, no = n) n
Closing the Program . . .

Process finished with exit code 0
```

The screenshot shows a terminal window with two tabs: 'main.py' and 'makeup.txt'. The 'makeup.txt' tab is active, displaying the following file content:

```
blusher
face
3
lipgloss
lip
9
```

- The run of the function

- In the File

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- Function 6

```

122 def delete():
123     found = False
124     search = input('which product do you want to delete? ')
125     makeup_file = open('makeup.txt', 'r')
126     temp_file = open('temp.txt', 'w')
127     descr = makeup_file.readline()
128     while descr != '':
129         qty = str(makeup_file.readline())
130         descr = descr.rstrip('\n')
131         if descr != search:
132             temp_file.write(descr + '\n')
133             temp_file.write(str(qty) + '\n')
134         else:
135             found = True
136         descr = makeup_file.readline()
137     makeup_file.close()
138     temp_file.close()
139     os.remove('makeup.txt')
140     os.rename('temp.txt', 'makeup.txt')
141     if found:
142         print('the file has been updated.')
143     else:
144         print('that item was not found in the file.')

```

- This Function deletes an item

```

Enter the Password:1234
The password is correct
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending
7) Close the program

Enter your number here: 4
which product do you want to delete? blusher
the file has been updated.
Do you want to carry out another option? (yes = y, no = n) n
Closing the Program . .

Process finished with exit code 0

```

- The run of the function

```

main.py × makeup.txt ×
3
lipgloss
lip
9

```

- In the File

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- Function 7:

```

145
146     def add():
147         makeup_file = open('makeup.txt', 'a')
148         answer = 'y'
149         while answer == 'y' or answer == 'Y':
150             makeup = str(input('Enter the name of the product:'))
151
152             type = str(input('Enter the type of the product (face,eye,lip):'))
153
154             quantity = str(input('Enter the quantity of the product:'))
155
156             print('')
157
158             makeup_file.write(str(makeup + '\n'))
159             makeup_file.write(str(type + '\n'))
160             makeup_file.write(str(quantity) + '\n')
161
162             answer = input('Do you want to add another product? (yes = y, no = n) ')
163
164         makeup_file.close()
165         print('The information has been saved in makeup.txt :)')

```

- The function for adding a product

```

/Users/ameeraattiah/PycharmProjects/CS_project/venv/bin/python /Users/ameeraattiah/PycharmProjects/CS_project/main.py
Welcome to Sephora

Enter the Password: 234
The password is correct
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending
7) Close the program

Enter your number here: 5
Enter the name of the product:mascara
Enter the type of the product (face,eye,lip):eye
Enter the quantity of the product:7

Do you want to add another product? (yes = y, no = n) y
Enter the name of the product:foundation
Enter the type of the product (face,eye,lip):face
Enter the quantity of the product:2

Do you want to add another product? (yes = y, no = n) n
The information has been saved in makeup.txt :
Do you want to carry out another option? (yes = y, no = n) n
Closing the Program . .

```

- The run of the function

Line	Content
1	lipgloss
2	lip
3	9
4	mascara
5	eye
6	7
7	foundation
8	face
9	2

- In The file

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- Function 8 :

```

167     def sort():
168         order = input('Choose between sorting in ascending or descending order: (a = ascending, d = descending) ')
169         makeup_file = open('makeup.txt', 'r')
170
171         name = (makeup_file.readline()).rstrip('\n')
172         type = (makeup_file.readline()).rstrip('\n')
173         quantity = (makeup_file.readline()).rstrip('\n')
174
175         while name != '':
176             makeup_list.append([name, type, quantity])
177
178             name = (makeup_file.readline()).rstrip('\n')
179             type = (makeup_file.readline()).rstrip('\n')
180             quantity = (makeup_file.readline()).rstrip('\n')
181
182         makeup_file.close()
183
183     if order == 'a':
184         makeup_list.sort()
185     elif order == 'd':
186         makeup_list.sort(reverse=True)
187
188     rows = len(makeup_list)
189     columns = len(makeup_list[0])
190
191     temp_file = open('temporary.txt', 'w')
192     for r in range(rows):
193         for c in range(columns):
194             temp_file.write(makeup_list[r][c] + '\n')
195
196     temp_file.close()
197
197     os.remove('makeup.txt')
198     os.rename('temporary.txt', 'makeup.txt')

```

- This function is for sorting the products in either ascending or descending order, which would depend on what the user will choose

- Ascending :

```

Enter the Password:1234
The password is correct
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending
7) Close the program

Enter your number here: 6
Choose between sorting in ascending or descending order: (a = ascending, d = descending) a
Products have been sorted
Do you want to carry out another option? (yes = y, no = n) n
Closing the Program . . .

Process finished with exit code 0

```

- The run of ascending

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- In the file

```

main.py x makeup.txt x
1 foundation
2 face
3 2
4 lipgloss
5 lip
6 9
7 mascara
8 eye
9 7
10 4

```

- Descending

```

Enter the Password:1234
The password is correct
Which option do you want to carry out:
1) Store item information: name, type, and quantity
2) Display all items from the same type
3) Edit one item quantity
4) Delete an item
5) Add an item
6) Sort items ascending or descending
7) Close the program

Enter your number here: 6
Choose between sorting in ascending or descending order: (a = ascending, d = descending) d
Products have been sorted
Do you want to carry out another option? (yes = y, no = n) n
Closing the Program . . .

Process finished with exit code 0

```

- The run of descending

```

main.py x makeup.txt x
1 mascara
2 eye
3 7
4 lipgloss
5 lip
6 9
7 foundation
8 face
9 2
10 4

```

- In the file

- Final Function

```

def exit_program():
    print('Closing the Program . . .')

```

- This is the main function we have ended the program with it since we couldn't use the functions inside because it has to be in order for it to work efficiently.

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Learning Outcomes :

Throughout this project our group has learned the power of programming and how it can make almost any process digitized. We also learned how some simple online processes which one uses in their everyday life is not that simply programmed.

Difficulties:

The difficulties we have faced were writing down our program. After brainstorming, we had so many ideas which we couldn't figure out how to execute. One thing that made our job so easy was to make flowcharts and hierarchy charts.

Course Learning Outcomes:

- Learn to Program and Analyze Data with Python.
 - Create programs to accumulate, clean, analyze, and visualize data.
 - Utilize center programming tools such as but not limited to functions and loops.
 - Use factors to store, recover and calculate data.
-