

Student ID: HT22100004510

Hemant Thapa

1. An algorithm that asks a user to enter a positive number repeatedly until the user enters a zero value, then determines and outputs the largest of the numbers that were input.

request positive number as input from the user

store input value into list called "total_number"

sort the number into ascending order for identifying largest number

if the user input is equal to "0"

 break the loop

 print out the largest number from "total_number"

if the user input is not equal to "0"

 store those positive number inside the list called "total_number"

 request user to input another number repeatedly until the user enter number is equal to "0"

```
In [1]: total_number = []
while True:
    total_number.sort()
    positive_number = int(input("Enter positive number: "))
    if positive_number == 0:
        print("\nLargest number is : ", total_number[-1])
        break
    if positive_number != 0:
        total_number.append(positive_number)
print("\n",total_number)
```

```
Enter positive number: 10
Enter positive number: 20
Enter positive number: 30
Enter positive number: 15
Enter positive number: 5
Enter positive number: 7
Enter positive number: 6
Enter positive number: 10000
Enter positive number: 100
Enter positive number: 60
Enter positive number: 0
```

```
Largest number is : 10000
```

```
[5, 6, 7, 10, 15, 20, 30, 60, 100, 10000]
```

2. An algorithm that requests a user to input their name and then stores their name in a variable called first_name. Subsequently, the algorithm should print out first_name along with the phrase "Hello,World".

ask user to enter arbitrary numbers, for example 1,2,3,4,5,6,7,8,9

store user input into list "total_numbers"

create a variable "sum_of_total_numbers" for storing total sum of arbitrary numbers

use sum() for addition of all the number or numerical value stored inside the list "total_numbers"

create a variable "length_of_numbers" and use len() for calculating length of "total_number"

create variable "arithmetic_average" for storing arithmetic average value by division of "sum_of_total_numbers" by "length_of_numbers"

print "arithmetic_average" variable for arithmetic average output

```
In [2]: total_numbers = [1, 2, 3, 4, 5, 6, 7, 8 ,9]
sum_of_total_numbers = sum(total_numbers)
length_of_numbers = len(total_numbers)
arithmetic_average = sum_of_total_numbers/length_of_numbers
print(arithmetic_average)
```

```
5.0
```

4. An algorithm that reads a grocery list and prints out the products (in alphabetical order) that are still left to buy

"grocery_list" are the list of the product left to buy

sort "grocery_list" in ascending order from first letter of the product

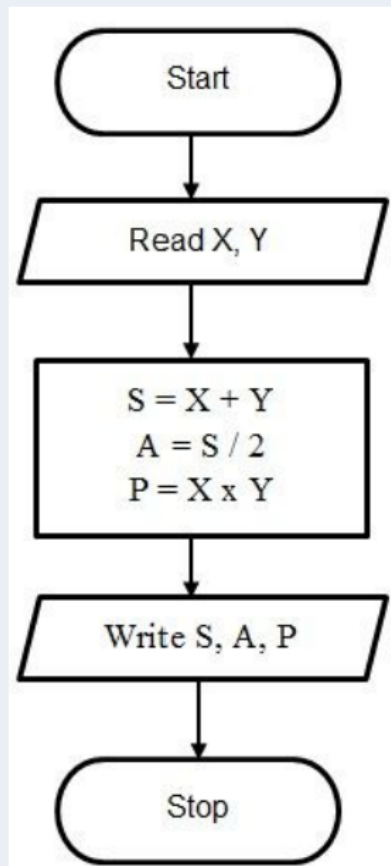
print out the all the item from the list in ascending order

```
In [3]: grocery_list = ["Milk", "Sugar", "Tea bag", "Bread", "Butter", "Oranges"]
grocery_list.sort
for count, grocery_list in enumerate(grocery_list):
    print(count, grocery_list)
```

```
0 Milk
1 Sugar
2 Tea bag
3 Bread
4 Butter
5 Oranges
```

5. An algorithms for the flowchart below:

- o An algorithm for the flowchart below:



ask user to enter input for X and Y

create a variable "S" for storing sum of X and Y

create a variable "A" for storing division of "S" by 2

Create a variable "P" for storing Multiplication of X and Y

Print value of S, value of A, and value of P

```
In [10]: X = float(input("Enter value of X: "))
Y = float(input("Enter value of Y: "))

S = X+Y
A = S/2
P = X*Y

print(f"\nS:{S}, A:{A}, P:{P}")
```

Enter value of X: 20

Enter value of Y: 50

S:70.0, A:35.0, P:1000.0