

```
In [1]: #1 Write a program that prints the numbers from 1 to 10.
for i in range(1,11):
    print(i)

1
2
3
4
5
6
7
8
9
10
```

```
In [2]: #2 Write a program that prints the numbers from 10 to 1.
for i in range(10,0,-1):
    print(i)

10
9
8
7
6
5
4
3
2
1
```

```
In [4]: #3 Write a program that takes an integer
# from the user and prints all the even
# numbers from 0 to that integer.
number = int(input("Enter an integer: "))
for i in range(0,number+1):
    if i % 2 == 0:
        print(i)
```

```
Enter an integer: 11
0
2
4
6
8
10
```

```
In [6]: #4 Write a program that takes an integer
# from the user and prints all the odd numbers
# from 0 to that integer and sum of them all.
number = int(input("Enter an integer: "))
sum = 0
for i in range(0,number+1):
    if i % 2 != 0:
        print(i)
        sum += i
print(f"Sum: {sum}")
```

```
Enter an integer: 8
1
3
5
7
Sum: 16
```

```
In [7]: #5 Write a program that takes start and end
# of numbers from the user and finds the
# sum of all numbers between start and end (inclusive).
start = int(input("Enter the start number: "))
end = int(input("Enter the end number: "))
sum = 0
for i in range(start, end+1):
    sum += i
print(f"Sum of numbers from {start} to {end} is {sum}")
```

```
Enter the start number: 1
Enter the end number: 25
Sum of numbers from 1 to 25 is 325
```

```
In [ ]: #6 Write a program that takes a List of numbers
# from the user and finds the largest number in the List.
numbers = []
while True:
    number = input("Enter a number or press enter to stop: ")
    if number == '':
        break
    numbers.append(int(number))
if len(numbers) == 0:
    print("No number inserted")
else:
    max_num = max(numbers)
    print(f"The largest number among {numbers} is {max_num}")
```

Enter a number or press enter to stop: 20  
Enter a number or press enter to stop: 25  
Enter a number or press enter to stop: 45  
Enter a number or press enter to stop: 98  
Enter a number or press enter to stop: 45  
Enter a number or press enter to stop: 54  
Enter a number or press enter to stop:  
The largest number among [20, 25, 45, 98, 45, 54] is 98

```
In [ ]: #7 Write a program that takes a string from
# the user and prints the number of vowels in the string.
string = input("Enter a text: ")
vowels = 'aeiouAEIOU'
count = 0
for i in string:
    if i in vowels:
        count += 1
print(f"The number of vowels: {count}")
```

Enter a text: thank you so much  
The number of vowels: 5

```
In [1]: #8 Write a program that takes a List of numbers
# as input and prints all the numbers that are
# greater than the average of the List

numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
average = sum(numbers) / len(numbers)
result = []

for number in numbers:
    if number > average:
        result.append(number)

print(result)
```

[6, 7, 8, 9, 10]

```
In [2]: #9 Write a program that takes a List of numbers as
# input and prints all the possible combinations of
# adding two numbers from the List.

numbers = [5, 7, 13, 24]
result = []

for i in range(len(numbers)):
    for j in range(i+1, len(numbers)):
        result.append((numbers[i], numbers[j]))

print(result)
```

[(5, 7), (5, 13), (5, 24), (7, 13), (7, 24), (13, 24)]

```
In [ ]: #10 Write a program that takes a sentence
# from the user and prints the longest word in the sentence.
text = input("Enter a text: ")
longest_word = ""
print("The initial length of longest word:", len(longest_word))
for i in text.split():
    if len(i) > len(longest_word):
        longest_word = i
print(f"The longest word is {longest_word}")
```

Enter a text: the number of people are decreasing  
The initial length of longest word: 0  
The longest word is decreasing

In [ ]:

### 3 Class exercise

#### 1. Guessing number game

In [ ]:

```
#1
# option 1
import random

computer_total = 0.0
user_total = 0.0
count = 0

continue_to_play = 'y'

while continue_to_play == 'y':

    computer = random.randrange(1,7)
    user = int(input("Enter a number between 1 and 6: "))
    if computer == user:
        print("You win 10 points!")
        user_total += 10
    else:
        print("Computer win 10 points!")
        computer_total += 10
    count += 1
    continue_to_play = input("Continue to play (y/n): ")

print("_____")
print("                Scoreboard")
print("_____")
print("You played",count,"times!")
print("Computer total: ",computer_total)
print("Your total: ",user_total)
```

Enter a number between 1 and 6: 6  
 Computer win 10 points!  
 Continue to play (y/n): y  
 Enter a number between 1 and 6: 5  
 Computer win 10 points!  
 Continue to play (y/n): n

---

Scoreboard

---

You played 2 times!  
 Computer total: 20.0  
 Your total: 0.0

In [ ]:

```
#1
# Option 2
import random

com_total = 0
user_total = 0
count = 0

while True:
    comp = random.randrange(1,7)
    user = int(input("Enter a number between 1 and 6: "))
    if comp == user:
        print("You win 10 points!")
        user_total += 10
    else:
        print("Computer wins 10 points!")
        com_total += 10
    count += 1

    play = input("Continue to play (y/n): ")
    if play != "y":
        break
```

Enter a number between 1 and 6: 6  
 Computer wins 10 points!  
 Continue to play (y/n): y  
 Enter a number between 1 and 6: 4  
 Computer wins 10 points!  
 Continue to play (y/n): n

## 2. Accumulating Numbers

```
In [ ]: #2
lst = []

while True:
    start = int(input("Enter a number: "))
    end = int(input("Enter a number greater than previous number: "))

    sub_total = 0.0
    for i in range(start, end+1):
        #sub_total = sub_total + i
        sub_total += i
    print(f"Sub-total: {sub_total:,.2f}")
    lst.append(sub_total)
    res = input("Like to continue (y/n):")

    if res.lower() != 'y':
        break

#grand_total = 0.0
#for i in lst:
#    #grand_total = grand_total + i

grand_total = sum(lst)

print(lst)
print(f"Grand-total: {grand_total:,.2f}")
```

```
Enter a number: 1
Enter a number greater than previous number: 3
Sub-total: 6.00
Like to continue (y/n):y
Enter a number: 10
Enter a number greater than previous number: 13
Sub-total: 46.00
Like to continue (y/n):y
Enter a number: 5
Enter a number greater than previous number: 6
Sub-total: 11.00
Like to continue (y/n):n
[6.0, 46.0, 11.0]
Grand-total: 63.00
```

In [ ]:

## Calculating total salary

```
In [ ]: #3
# Option 1
salary = []
emp = []

COMMISSION = .10
want_to_continue = 'y'
while want_to_continue == 'y':
    sales = float(input("Enter sales amount: "))
    comm = sales * COMMISSION
    name = input("Enter your name: ")
    sal = int(input("Enter your basic salary: "))

    salary.append(sal+comm)
    emp.append(name)

    want_to_continue = input("Want to continue (y/n): ")

for amount, nm in zip(salary,emp):
    print(f"Total salary of {nm} for this month: ${amount:,.2f}")
```

```
Enter sales amount: 60000
Enter your name: John
Enter your basic salary: 5000
Want to continue (y/n): y
Enter sales amount: 60000
Enter your name: Smith
Enter your basic salary: 6000
Want to continue (y/n): n
Total salary of John for this month: $11000.00
Total salary of Smith for this month: $12000.00
```

```
In [ ]: #3
# Option 2

salary = []
employees = []

COMMISSION = 0.10

while True:
    sales = float(input("Enter sales amount: "))
    commission = sales * COMMISSION
    name = input("Enter your name: ")
    basic_salary = int(input("Enter your basic salary: "))

    salary.append(basic_salary + commission)
    employees.append(name)

    want_to_continue = input("Do you want to continue (y/n): ")
    if want_to_continue.lower() != 'y':
        break

for salary, name in zip(salary, employees):
    print(f"Total salary of {name} for this month: ${salary:.2f}")
```

```
Enter sales amount: 10000
Enter your name: John
Enter your basic salary: 2000
Do you want to continue (y/n): y
Enter sales amount: 50000
Enter your name: Smith
Enter your basic salary: 5000
Do you want to continue (y/n): n
Total salary of John: $3000.00
Total salary of Smith: $10000.00
```

```
In [ ]:
```