

Assignment 1 - 15 11 23

1. What is the result of the following expression in Python?

```
In [1]: print(True==1)
```

True

2. Write a program that takes the age of the user as input and tells them if they're old enough to ride a roller coaster. The minimum age to ride the roller coaster in this question is 13.

```
In [7]: age = int(input("Enter your age:"))
if age >= 13:
    print("You are old enough to ride a roller coaster... Enjoy the ride !!")
else:
    print("You are not old enough to ride a roller coaster")
```

You are old enough to ride a roller coaster... Enjoy the ride !!

3. You are given 3 integer angles(in degrees) A, B and C of a triangle. You have to tell whether the triangle is valid or not. A triangle is valid if sum of its angles equals to 180.

```
In [9]: a = int(input("Enter angle A of triangle:"))
b = int(input("Enter angle B of triangle:"))
c = int(input("Enter angle C of triangle:"))
sum_of_angles = a+b+c
if sum_of_angles == 180:
    print("The give angles form a triangle")
else:
    print("The given angles does not a triangle")
```

The give angles form a triangle

4. Write a program to input two numbers(A & B) from user and print the maximum element among A & B in each line

```
In [13]: A = int(input("Enter number 1 :"))
B = int(input("Enter number 2 :"))
if A>B:
    print(f"Maximum Element is {A}\n")
elif B>A:
    print(f"Maximum Element is {B}\n")
```

Maximum Element is 90

5. Given the number N, Categorise the number according to following condition :

1. Odd-Positive

2. Odd-Negative

3. Even-Positive

4. Even-Negative

```
In [20]: n = int(input("Enter number :"))

if n%2==1 and n>0:
    print("Odd-Positive")
elif n%2==1 and n<0:
    print("Odd-Negative")
elif n%2==0 and n>0:
    print("Even-Positive")
elif n%2==0 and n<0:
    print("Even-Negative")
else:
    print("Zero")
```

Odd-Negative

6. Given a positive integer A, return an array of strings with all the integers from 1 to N. But for multiples of 3 the array should have "Fizz" instead of the number. For the multiples of 5, the array should have "Buzz" instead of the number. For numbers which are multiple of 3 and 5 both, the array should have "FizzBuzz" instead of the number.

```
In [25]: a = int(input("Enter Positive Integer:"))
array = []
for i in range(1,a+1):
    if i%3 == 0:
        array.append('Fizz')
    elif i%5 == 0:
        array.append('Buzz')
    elif i%3 == 0 and i%5 == 0:
        array.append('FizzBuzz')
    else:
        array.append(i)
print(array)
```

[1, 2, 'Fizz', 4, 'Buzz', 'Fizz', 7, 8, 'Fizz', 'Buzz', 11, 'Fizz', 13]

7. Take an integer A as input. You have to tell whether A is divisible by both 5 and 11 or not.

```
In [27]: A = int(input("Enter integer A:"))
if A%5 == 0 and A%11 == 0:
    print(f"Given number {A} is divisible by 5 and 11")
else:
    print(f"Given number {A} is not divisible by 5 and 11")
```

Given number 552 is not divisible by 5 and 11

8. Write a program to print all even numbers from 1 to N where you have to take N as input from the user. Note: Use while-loop OR for-loop, according to session flow

Using while loop

```
In [38]: n = int(input("Enter N:"))
even_array = []
while n>0:
    if n%2 == 0:
        even_array.append(n)
    n = n-1
print(even_array[::-1])
```

```
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44,
46, 48, 50, 52, 54, 56]
```

Using For loop

```
In [40]: n = int(input("Enter N:"))
even_array = []
for i in range(1,n+1):
    if i % 2 == 0:
        even_array.append(i)
print(even_array)
```

```
[2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44,
46, 48, 50, 52, 54, 56]
```

9. Write a program to print all odd numbers from 1 to N where you have to take N as input from the user. Here N is inclusive.

Using While Loop

```
In [41]: n = int(input("Enter N:"))
even_array = []
while n>0:
    if n%2 != 0:
        even_array.append(n)
    n = n-1
print(even_array[::-1])
```

```
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23]
```

Using for loop

```
In [42]: n = int(input("Enter N:"))
even_array = []
for i in range(1,n+1):
    if i % 2 != 0:
        even_array.append(i)
print(even_array)
```

```
[1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23]
```

10. How many times will the following loop run?

```
In [2]: # c = 0
# while c<=10:
#     print(c)
#     if c%2:
#         c-=1
#     else:
#         c+=1
# The loop will run infinite time
# Loop 1 : c = 0 go to if(False) then go to else block Then c value changes to 1
# c = 1
# Loop 2 : c = 1 go to if(True) Then c value changes to 0
# c = 0
# Loop 3 : c = 0 ( Same as Loop 1 and then Loop 2 )
# It will run again and again and again

# Note : We can put break statement in while loop to exit loop
```

```
In [ ]:
```