QUAID-E-AWAM UNIVERSITY

OF ENGINEERING, SCIENCE & TECHNOLOGY

NAWABSHAH, SINDH, PAKISTAN

Subject Teacher

Muhammad Owais Rehmani

- **Name:** Firza Ghori
- **Batch:** 23
- **Roll No:** 036
- **Subject:** Programming Fundamental
- **Department:** Artificial Intelligence
- **Assignment :** while loop for loop & Control flow

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EXERCISE 1:

- **Write a program using a for loop to print the numbers from 1 to 10.**

Coding Python
Auto saved at 19:29:05
RUN MENU

```
numbers=range(1,10)
for number in numbers:
    print(number)
```

OUTPUT

Compile Result

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

[Process completed - press Enter]
```

EXERCISE 2:

- **Create a program that uses a for loop to print the multiplication table of the user-inputted number.**

Coding Python
Auto saved at 20:12:37
RUN MENU

```
1 num=int(input("enter a num:"))
2 for i in range(1,11):
3       print(num,"*",i,"=",num*i)
4
```

OUTPUT

Compile Result

```
enter a num:3
3 * 1 = 3
3 * 2 = 6
3 * 3 = 9
3 * 4 = 12
3 * 5 = 15
3 * 6 = 18
3 * 7 = 21
3 * 8 = 24
3 * 9 = 27
3 * 10 = 30

[Process completed - press Enter]
```

EXERCISE 3:

- **Write a program that uses a while loop to find the sum of natural numbers up to a given number entered by the user.**

```
1  num=int(input("enter a num:"))
2  sum=0
3  while (num>0):
4      sum+=num
5      num -=1
6  print("the result is",sum)
```

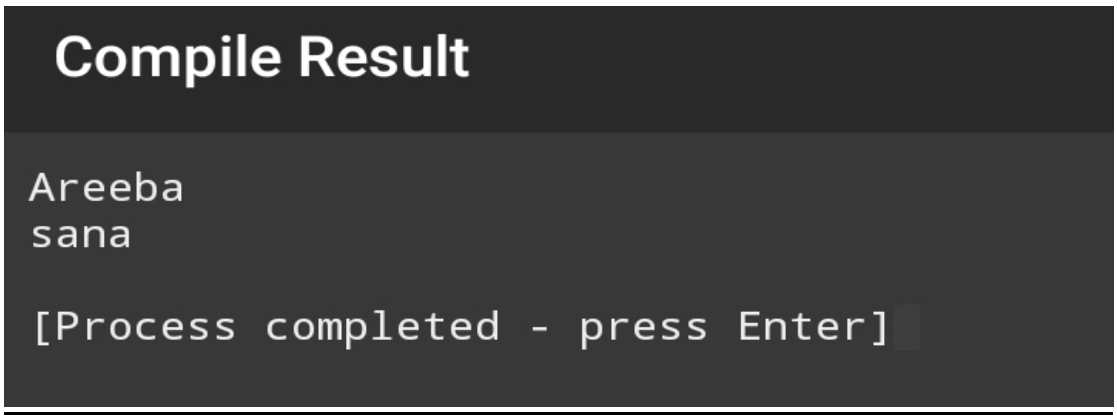
OUTPUT

```
enter a num:19
the result is 190
>
```

EXERCISE 4:

- **Create a program that uses a for loop to iterate through a list of name and print each name.**

OUTPUT



EXERCISE 5:

- **Write a program using a while loop to find factorial of a user inputted number.**

```
Auto saved at 21:53:00
num=int(input("enter num:"))
fact=1
for i in range(1,num+1):
    fact=fact*i
print("factorial num is: ",fact)
```

OUTPUT

```
enter num:5
factorial num is:  120

[Process completed - press Enter]
```

EXERCISE 6:

- **Create a program using a for loop to print the fabonacci series up to specified number of term entered by the user.**

```
1 a=int(input ("enter the num:"))
2 a1, a2 = 0, 1
3 sum=0
4
5 if a<=0:
6     print("please enter number greater t
7 else:
8     for i  in range(0,a):
9         print(sum,end=" ")
10        a1=a2
11        a2=sum
12        sum= a1+a2
13
```

OUTPUT

```
enter the num:9
0 1 1 2 3 5 8 13 21
[Process completed - press Enter]
```

EXERCISE 7:

- **Write a program using a while loop to reverse a number entered by a user.**

```
1 i=int(input("enter num:"))
2 rev=0
3
4 while (i>0):
5     rev=(rev*10)+i%10
6     i=i//10
7 print("reverse=",rev)
```

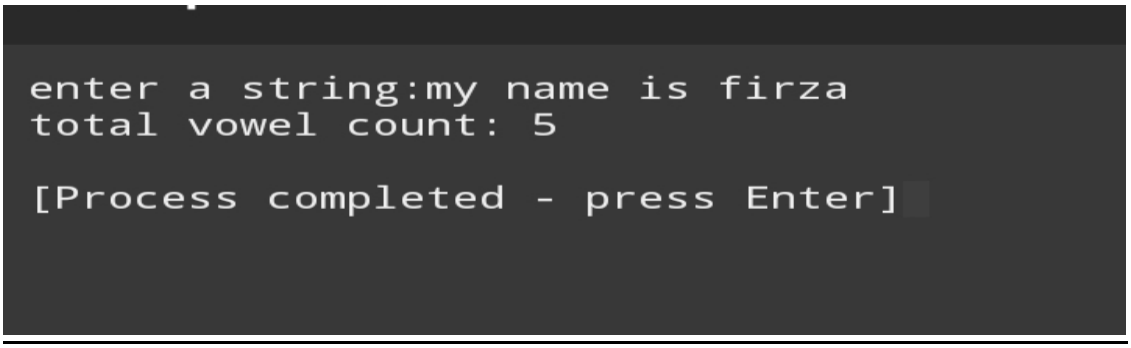
OUTPUT

```
enter num:129
reverse= 921

[Process completed - press Enter]
```

EXERCISE 8:

- **Create a program that use a for loop to iterate through a string and count the number of vowel.**

OUTPUT



EXERCISE 9:

- **Write a program using a while loop to check if a user inputted number is a palindrome.**

```
i=int(input("enter a num:"))
rev=0
x=i

while (i>0):
    rev=(rev*10)+i%10
    i=i//10
if(x==rev):
    print("palindrome num")
else:
    print("not palindrome")
```

OUTPUT

```
enter a num: 678
not palindrome

[Process completed - press Enter]
```

```
enter a num:525
palindrome num

[Process completed - press Enter]
```

EXERCISE 10:

- **Create a program using a for loop to calculate and print the sum of the squares of the numbers from 1 to 5**

```
1
2 sum_squares = 0
3 for i in range(1, 5):
4     sum_squares += i ** 2
5 print("Sum of squares:", sum_squares)
```

OUTPUT

```
Sum of squares: 30

[Process completed - press Enter]
```

ASSIGNMENT#2

CONTROL AND FLOW

EXERCISE 1:

- **Write a python program that takes a number as input and print “even” if it’s even and “odd” if it’s odd**

```
Auto saved at 13:27:48
num=int(input("enter a num:"))
if num%2==0:
    print(f"even")
else:
    print(f"odd")
```

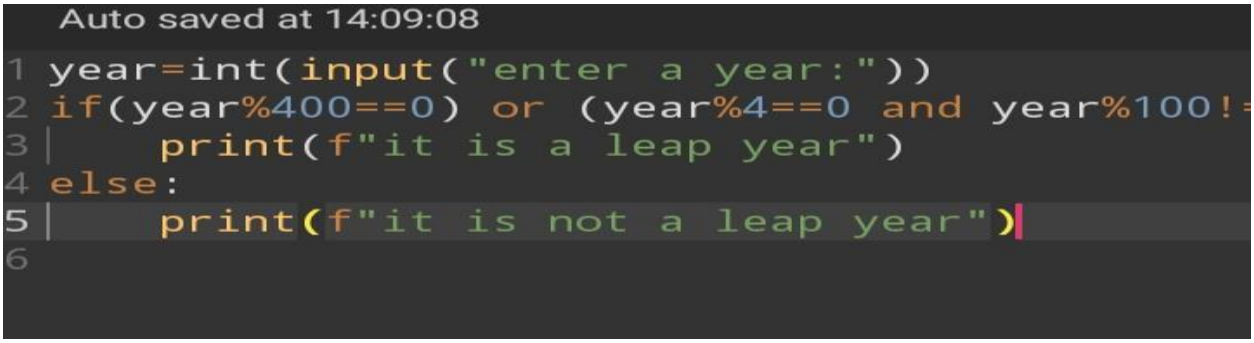
OUTPUT

```
enter a num:2
even

[Process completed - press Enter]
```

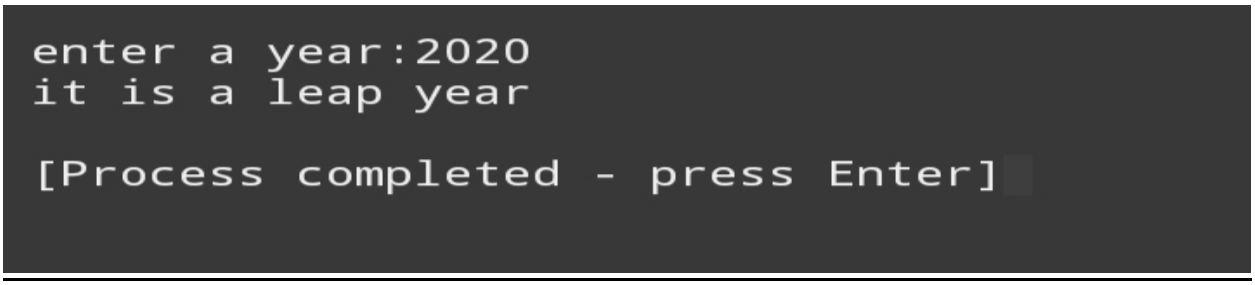
```
enter a num:5
odd

[Process completed - press Enter]
```

EXERCISE 2:

- **Create a program that checks if a user inputted year leap year. Print result accordingly.**



OUTPUT



EXERCISE 3:

- **Write a program that prompts the user to enter their age. If the age is 18 or above, print "you are an adult," and otherwise print "you are a mirror".**

```
1 age=20
2 if age>=18:
3     print(f"you are an_adult")
4 else:
5     print(f"you are mirror")
```

OUTPUT

```
you are an_adult

[Process completed - press Enter]
```

EXERCISE 4:

- **Create a simple login system. Ask the user to enter their username and password. If the username is "admin" and password "12345", print "login successful," otherwise print "login failed"**

```
username="admin"
password="12345"

input_username=input("enter username:")
input_password=input("enter password:")

if username==input_username:
        if password==input_password:
            print(f"successful login")
        else:
            print(f"username and password invalid")
else:
    print(f"login failed")
```

OUTPUT

```
enter username:admin
enter password:12345
successful login

[Process completed - press Enter]
```

EXERCISE 5:

- **Write a program that determine if a given number is positive, negative, or zero. Print the result accordingly**

```
num=-35
if num>0:
    print(f"it is positive number")
elif num==0:
    print(f"it is zero number")
else:
    print(f"it is negative number")

```

OUTPUT

```
it is negative number

[Process completed - press Enter]
```

EXERCISE 6:

- **Ask the user to enter three number. Find and print the maximum of three number.**

```
x= int(input("enter a number1:"))
y= int(input("enter a number2:"))
z= int(input("enter a number3:"))

if x<=y>=z:
    print(f"y")
elif y<=x>=z:
    print(f"x")
else:
    print(f"z")
```

OUTPUT

```
enter a number1:56
enter a number2:100
enter a number3:400
z

[Process completed - press Enter]
```

EXERCISE 7:

- **Create a grading systems, take a numeric score as input and print corresponding grade (A,B,C,D,F)**

```
marks=int(input("enter a marks:"))
if marks>=180:
    print("A grade")
elif marks>=100:
    print("B grade")
elif marks>=80:
    print("C grade")
elif marks>=50:
    print("D grade")
else:
    print("F grade")

```

OUTPUT

```
enter a marks:190
A grade

[Process completed - press Enter]
```

EXERCISE 8:

- **Write a program to check user _ inputted number is a prime number or not. Print the result.**

```
n=int(input("enter a number:"))

if n<2:
    print(f"not a prime numbe")
else:
    for i in range(2,n):
        if n%i==0:
            print(f"not a prime number")

            break
    else:
        print(f"number is prime")

```

OUTPUT

```
enter a number:5
number is prime

[Process completed - press Enter]
```

EXERCISE 9:

- **Create a program that checks if a user _ inputted year is a leap year. If it is , print “leap year, “otherwise print “Not a leap year”.**

```
year=int(input("enter a year:"))
if year%400==0:
    print(f"leap year")
elif year%4==0 and year%100!=0:
    print(f"leap year")
else:
    print(f"not leap year")
```

OUTPUT

```
enter a year:2000
leap year

[Process completed - press Enter]
```

```
enter a year:2023
not leap year

[Process completed - press Enter]
```

EXERCISE 10:

- **Prompt the user to enter two number. Print the large number or a message saying they are equal.**

```
num1=int(input("enter a number1:"))
num2=int(input("enter a number2:"))

if num1==num2:
    print("number are equal")
elif num1>num2:
    print("num1")
else:
    print("num2")
```

OUTPUT

```
enter a number1:100
enter a number2:10000
num2

[Process completed - press Enter]
```