

" control flow and loops"

```
age=18
if age>=18:
    print("you are eligible to vote")
```

you are eligible to vote

IF , ELSE STATEMENT

Add blockquote

```
num=int(input("enter a number;"))
if num%2==0:
    print(" number is even")
else: # Corrected indentation for the else statement.
    print("number is odd")
```

enter a number;34
number is even

New section

```
marks=int(input("enter your marks:"))
if marks>=90:
    print("grade:A")
elif marks>=80:
    print("grade:B")
elif marks>=70:
    print("grade:C")
elif marks>=60:
    print("grade:D")
else:
    print("grade:F")
```

enter your marks:90
grade:A

LOOPS FOR' LOOP

```
for i in range(5):
    print("interation:",i)
```

```
iteration: 0
iteration: 1
iteration: 2
iteration: 3
iteration: 4
```

```
for i in range(5,50,10):
    print("iteration:",i)
```

```
iteration: 5
iteration: 15
iteration: 25
iteration: 35
iteration: 45
```

WHILE LOOP

```
count=0
while count<5:
    print("count:",count)
    count+=1
```

```
count: 0
count: 1
count: 2
count: 3
count: 4
```

"CONTROL FLOW TOOLS"

```
#break
for i in range(10):
    if i==5:
        break
    print(i)
```

```
0
1
2
3
4
```

```
#continue
for i in range(10):
    if i==5:
        continue
    print(i)
```

```
0
1
2
```

```
3
4
6
7
8
9

#pass
for i in range(10):
    if i==5:
        pass
    print(i)

0
1
2
3
4
5
6
7
8
9
```

1.PROGRAM TO CHECK IF A NUMBER IS EVEN OR ODD

```
num=int(input("enter a number:"))
if num%2==0:
    print("number is even")
else:
    print("number is odd")

enter a number:500
number is even
```

2.SUM OF NUMBER IN GIVEN RANGE

```
start=int(input("enter the start of the range:"))
end=int(input("enter the end of the range:"))
sum=0
for i in range(start,end+1):
    sum+=i
    print("sum is:",sum)

enter the start of the range:68
enter the end of the range:70
sum is: 68
sum is: 137
sum is: 207
```

3.PROGRAM TO FACTORIAL NUMBER

```
NUM=int(input("enter a number:"))
fact=1
for i in range(1,NUM+1):
    fact*=i
    print("factorial is:",fact)

enter a number:4
factorial is: 1
factorial is: 2
factorial is: 6
factorial is: 24
```

4.FIBBONACII SEQUENCE

```
n=int(input("enter the number of terms:"))
a,b=0,1
for i in range(n):
    print(a,end="\t")
    a,b=b,a+b

enter the number of terms:10
0    1    1    2    3    5    8    13    21    34

n=int(input("enter the number of terms:"))
a,b=0,1
for i in range(n):
    print(a,end="\t")
    a,b=b,a+b

enter the number of terms:5
0    1    1    2    3
```

5.SIMPLE CALCULATOR USING if-else

```
num1=float(input("enter the first number:"))
num2=float(input("enter the second number:"))
operation=input("enter the operation(+,-,*,/):")
if operation=="+":
    result=num1+num2
    print("result:",result)
elif operation=="-":
    result=num1-num2
    print("result:",result)
elif operation=="*":
    result=num1*num2
    print("result:",result)
```

```
enter the first number:70
enter the second number:60
enter the operation(+,-,*,/):-
result: 10.0
```

6.CHECK LEAP YEAR

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

```
enter a year:2005
not a leap year
```

7.FIND THE LARGEST OF THREE NUMBERS

```
num1=float(input("enter the first number:"))
num2=float(input("enter the second number:"))
num3=float(input("eneter the third number:"))
if num1>=num2 and num1>=num3:
    print("largest number is:",num1)
elif num2>=num3:
    print("largest number is:",num2)
else:
    print("largest number is:",num3)
```

```
enter the first number:20
enter the second number:50
eneter the third number:60
largest number is: 60.0
```

8.FIND POSITIVE OR NEGATIVE

```
a= int(input("nenter a number:"))
if a>0:
    print("positive number")
elif a<0:
    print("negative number")
else:
    print("zero")
```

```
nenter a number:5
positive number
```

9.SUM OF ALL EVEN NUMBER IN A RANGE

```

start=int(input("enter the start of the range:"))
end= int(input("enter the end of the range:"))
even_sum=0
for num in range(start,end+1):
    if num%2==0:
        even_sum+=num
    print("sum of even numbers:",even_sum)

```

```

enter the start of the range:4
enter the end of the range:6
sum of even numbers: 4
sum of even numbers: 10

```

#IMP QUESTS

What **is** the result of the following code snippet?

```

x = 10
if x > 5:
    print("Greater")
elif x == 5:
    print("Equal")
else:
    print("Less")

```

Greater

What **is** the output of the following loop?

```

i = 0
while i < 5:
    print(i)
    i += 2

```

```

0
2
4

```

Write a while loop that counts down from 10 to 1 and stops when it reaches 5 using a break statement.

```

i = 10
while i > 0:
    print(i)
    if i == 5:
        break
    i -= 1

```

```

10
9
8
7

```

```
6
5
```

Write a program that uses continue to skip printing even numbers between 1 and 10.

```
i = 10
while i > 0:
    print(i)
    if i == 5:
        break
    i -= 1
```

```
1
3
5
7
9
```

How would you loop over a list of numbers and print each one using a for loop?

```
numbers = [1, 2, 3, 4, 5]
for num in numbers:
    print(num)
```

```
1
2
3
4
5
```

```
for i in range(3,6):
    print(i)
```

```
3
4
5
```

```
num = int(input("Enter a number: "))
if num % 2 == 0:
    print("Even")
else:
    print("Odd")
```

```
Enter a number: 78
Even
```

```
x=10
y=5
```

```
if x>y and y>3:
    print("condition met")
else:
    print("condition is not met")
```

condition met

```
x = 10
y = 40
if x == y:
    print("Equal")
elif x > y:
    print("Greater")
else:
    print("Smaller")
```

Smaller

```
for i in range(1, 6):
    for j in range(i):
        print('*', end="")
    print()
```

```
*
**
***
****
*****
```

```
my_list = ['a', 'b', 'c']
for index, value in enumerate(my_list):
    print(f"Index: {index}, Value: {value}")
```

```
Index: 0, Value: a
Index: 1, Value: b
Index: 2, Value: c
```

```
nums = [1, 2, 3, 4, 5]
```

```
# Check if all numbers are greater than 0
```

```
if all(num > 0 for num in nums):
    print("All numbers are positive")
```

```
# Check if any number is divisible by 3
```

```
if any(num % 3 == 0 for num in nums):
    print("Some numbers are divisible by 3")
```

```
All numbers are positive
Some numbers are divisible by 3
```



```

for i in range(3):
    for j in range(3):
        print(i, j, end=" ")

0 0 0 1 0 2 1 0 1 1 1 2 2 0 2 1 2 2

while True:
    user_input = input("Enter a command (type 'exit' to quit): ")
    if user_input.lower() == "exit":
        break
    print(f"You entered: {user_input}")

Enter a command (type 'exit' to quit): QUIT
You entered: QUIT
Enter a command (type 'exit' to quit): EXIT

x = 0
for i in range(3):
    for j in range(2):
        x += 1
print(x)

6

def is_armstrong_number(number):
    num_str = str(number)
    num_digits = len(num_str)
    total = sum(int(digit) ** num_digits for digit in num_str) #
    Corrected indentation
    return total == number

# Assuming 'number' is defined and has a value like 153
if is_armstrong_number(number):
    print(f"{number} is an Armstrong number")
else:
    print(f"{number} is not an Armstrong number")

153 is an Armstrong number

```