

control flow and loops conditional statements

if statements

[link text](#)

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

you are eligible to vote

if else statement

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

enter a number9
the number is odd

sum of all even Number in a range

if elif else statements

```
marks = int(input("enter your marks"))
if marks >= 90:
    print(" grade is A")
elif marks >= 75:
    print(" grade is B")
elif marks >= 50:
    print(" grade is C")
else:
    print("grade: f")
```

enter your marks90
grade is A

loops for loops

```
for i in range(5):
    print("Iteration:",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' Loops

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

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

```
#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 do nothing
for i in range(10):
    if i ==5:
        pass
    print(i)
```

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

hands on practice

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

sum of number in range

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

```
enter the starting number: 5
enter the ending number: 10
the sum is: 5
the sum is: 11
the sum is: 18
the sum is: 26
the sum is: 35
the sum is: 45
```

program to find the factorial in

```
number = int(input("Enter a number: "))
factorial = 1
for i in range(1,number+1):
```

```
factorial*=i
print("the factorial is:",factorial)
```

```
Enter a number: 5
the factorial is: 1
the factorial is: 2
the factorial is: 6
the factorial is: 24
the factorial is: 120
```

fibonacci sequence

```
n = int(input("enter the number of terms:"))
```

```
a,b= 0,1
for i in range(n):
    print(a,end=" ")
    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)
    a,b = b, a+b
```

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

simple calculator using if-else

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

```

elif operation == '*':
    print("Result:", num1 * num2)
elif operation == '/':
    print("Result:", num1 / num2)
elif operation == '//':
    print("Result:", num1 // num2)
elif operation == '%':
    print("Result:", num1 % num2)
else:
    print("invalid operation")

enter the first number:6
enter the second number:6
enter operation(+, -, *, /,%): +
Result: 15.0

```

check loop 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:2024
leap year

```

Find the largest of three Number

```

num1 = float(input("enter first number:"))
num2 = float(input("enter second number:"))
num3 = float(input("enter 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 first number:4
enter second number:5
enter third number:6
Largest number is: 6.0

a = int(input("enter a number"))
if a>0:
    print("positive")
elif a<0:

```

```
        print("negative")
else:
    print("zero")
```

```
enter a number-65
negative
```

sum of all even Number in a range

```
start = int(input("enter the start of range: "))
end = int(input("enter the end of 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 range: 2
enter the end of range: 9
sum of even numbers: 20
```