

control flow and loops conditional statements

```
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("even number")
else:
    print("odd number")

enter a number:5
odd number
```

if-elif-else statement

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

enter your marks:40
Grade F
```

Loop for loop

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

Iteration: 5
Iteration: 15
Iteration: 25
Iteration: 35
Iteration: 45

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

```
Iteration: 0  
Iteration: 1  
Iteration: 2  
Iteration: 3  
Iteration: 4
```

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
```

Hands on practice

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

```
enter a number:40
the number is even.
```

sum of numbers 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("the sum is:",sum)
```

```
enter the start of the range:5
enter the end of the range:10
the sum is: 45
```

sum of factorial

```
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("the sum is:",sum)
```

```
enter a number:5
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:9
0 1 1 2 3 5 8 13 21
```

simple calculator using if-else

```
num1=float(input("enter first number:"))
num2=float(input("enter 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)
elif operation=='%':
    print("result:",num1%num2)
else:
    print("invalid operation")
```

```
enter first number:10
enter second number:10
enter operation(+,-,*,/,**,/,/,%)://
result: 1.0
```

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:2024
leap year
```

largest of three numbers

```
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:7
enter second number:6
enter third number:18
largest number is: 18.0
```

sum of all even numbers in range

```
start=int(input("enter start of range:"))
end=int(input("enter 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 start of range:5
enter end of range:10
sum of even numbers: 24
```