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

you are eligible to vote

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

enter  a number24
the number is even
```

if-elif-else statements

```
# if-elif-else statement:
marks = int(input("Enter the number"))
if marks>=90:
  print("grade: A")
elif marks >=75:
    print("grade: B")
elif marks >=50:
    print("grade: C")
else:
    print("grade: F")

Enter the number93
grade: A
```

for Loops

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

interation: 0
interation: 1
interation: 2
interation: 3
interation: 4

for i in range(5,10):
  print("interation:",i)

interation: 5
interation: 6
interation: 7
```

```
interation: 8
interation: 9

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

interation: 5
interation: 15
interation: 25
interation: 35
interation: 45
```

While Loops

```
#while Loops:
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
```

Hands-on practice

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

Enter the number20
the number is even
```

Sum of number in the range

```python
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
```

Program to find the factorial in

```python
number= int(input("Enter the number: "))
factorial = 1
for i in range(1,number + 1):
  factorial*=i
  print("the factorial is:",factorial)

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

Fibonacci sequence

```python
n = int(input("Enter the number term:"))
a,b=0,1
```

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

Enter the number term:5
0 1 1 2 3

n = int(input("Enter the number term:"))
a,b=0,1
for i in range(n):
    print(a,end=" ")
    a,b = b, a + b

Enter the number term: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)
elif operation =='**':
    print("result:",num1-num2)
else:
    print("invalid operation")

Enter the first number:24
Enter the second number:20
```

```
Enter operation(+,-,*,/,//,%,**):**
result: 4.0
```

Check leap year

```
year = int(input("Enter the year:"))
if(year % 4==0 and year % 100!=0)or(year % 400==0):
  print("Leap year")
else:
  print9("Not a Leap year")

Enter the year:2024
Leap year
```

Find the largest of three numbers*

```
num1=int(input("Enter first number:"))
num2=int(input("Enter second number:"))
num3=int(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:20
Enter second number:24
Enter third number:67
largest number is: 67

a =int(input("Enter a number:"))
if a>0:
  print("Positive")
elif a<0:
  print("Negative")
else:
  print("Zero")

Enter a number:67
Positive
```

Sum of all Even numbers in a range

```
Start= int(input("Enter the start of range: "))
end = int(input("Enter the end of number: "))
even_sum=0
for num in range(start,end+1):
  if num%2==0:
```

```
    even_sum+=num
  print("Sum of even number is:",even_sum)

Enter the start of range: 5
Enter the end of number: 15
Sum of even number is: 0
Sum of even number is: 6
Sum of even number is: 6
Sum of even number is: 14
Sum of even number is: 14
Sum of even number is: 24
Sum of even number is: 24
Sum of even number is: 36
Sum of even number is: 36
Sum of even number is: 50
Sum of even number is: 50
```

Questions solving:

```python
#1
num=float(input("Enter the number:"))
if num>0:
  print("Positive number")
elif num<0:
  print("Negative number")
else:
  print("the number is zero")

Enter the number:0
the number is zero

#2
num1=int(input("Enter first number:"))
num2=int(input("Enter second number:"))
num3=int(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:12
Enter second number:55
Enter third number:67
Largest number is: 67

#3
num=int(input("Enter the number: "))
if num % 2 ==0:
```

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

```
Enter the number: 31
odd number
```

#4
```python
num=int(input("Enter the number:"))
if num % 2==0 and num % 3==0:
    print(f"{num} is divisible by 2 and 3")
else:
    print(f"{num} is not divisible by 2 and 3")
```

```
Enter the number:24
24 is divisible by 2 and 3
```

#5
```python
year=int(input("Enter the number:"))
if (year % 4==0 and year % 100!=0) or (year % 400==0):
    print("leap year")
else:
    print("Not leap year")
```

```
Enter the number:2024
leap year
```

#6
```python
num=int(input("Enter the number:"))
if num>10:
    print("hello")
else:
    print("Good bye")
```

```
Enter the number:24
hello
```

#7
```python
num=int(input("Enter the number:"))
if (num % 5==0) and (num % 10!=0):
 print(f"{num} is divisible by 5 but not 10")
else:
 print(f"{num} doesn't satisfy the conditon")
```

```
Enter the number:60
60 doesn't satisfy the conditon
```

#8
```python
number=int(input("Enter the number:"))
if 100 <= number <= 200:
    print(f"{number} is between 100 and 200")
```

```python
else:
    print(f"{number} is not between 100 and 200")
```

```
Enter the number:100
100 is between 100 and 200
```

#9
```python
num=int(input("Enter the number: "))
if 50 < num < 100:
    print(f"{num} in between 50 and 100 (exclusive)")
else:
    print(f"{num} is not satisfied")
```

```
Enter the number: 67
67 in between 50 and 100 (exclusive)
```

#10
```python
num=int(input("Enter the number:"))
if (num > 100) and (num < 500):
    print("print a message")
else:
    print("not satisfy the condition")
```

```
Enter the number:224
print a message
```

#11
```python
for number in range(1,11):
    print(number)
```

```
1
2
3
4
5
6
7
8
9
10
```

#12
```python
for number in range(2,21,2):
    print(number)
```

```
2
4
6
8
10
12
```

```
14
16
18
20
```