Ste p	а	b	sum	output
1	10			
2	10	5		
3	10	5	15	
4	10	5	15	15

```
demo.py > ...

1    a = 10
2    b = 5
3    sum = a + b
4    print(sum)
```

Ste	а	b	output
р			
1	10		
2	10	5	
3	10	5	10
4	10	5	b

```
main.py > ...

1    a = 10
2    b = 5
3    print(a)
4    print("b")
```

Ste	а	b	output
р			
1	10		
2	10	а	
3	10	а	b

```
main.py > ...

1    a = 10

2    b = a

3    print("b")
```

Ste	а	b	output
р			
1	10		
2	10	а	
3	10	а	10

```
main.py > ...

1    a = 10
2    b = a
3    print(b)
```

Step	А	a<10	output
1	10		
2	10	False	
3	10		No

```
main.py > ...

1    a = 10
2    if a < 10:
3        print("Yes")
4    else:
5        print("No")</pre>
```

Step	а	a <= 10	output
1	10		
2	10	True	
3	10		Yes

```
main.py > ...

1    a = 10
2    if a <= 10:
3        print("Yes")
4    else:
5        print("No")</pre>
```

Step	А	A<=10	output
1	10		
2	10	True	
3	10		Yes

```
e main.py > ...
     a = 10
  2 if a <= 10:
          print("Yes")
      elif a == 10:
          print("No")
    elif a >= 10:
          print("Okay")
```

Step	а	a<=10	a==10	a>=10	output
1	10				
2	10	True			
3	10				Yes
4	10		True		
5	10				No
6	10			True	
7	10				Okay

```
e main.py > ...
  1 \quad a = 10
  2 if a <= 10:
           print("Yes")
      if a == 10:
  5
           print("No")
      if a >= 10:
           print("Okay")
```

Step	а	b	A<10 and b>10	a==10 and b==5	A ==10 and b<=10	Output
1	10					
2	10	5				
3	10	5	False			
4	10	5		True		
5	10	5				No
6	10	5			True	
7	10	5				Okay

```
main.py > ...

1    a = 10
2    b = 5
3    if a < 10 and b > 10:
4        print("Yes")
5    elif a == 10 and b == 5:
6        print("No")
7    if a >= 10 and b <= 10:
8        print("Okay")</pre>
```

Ste p	а	b	a<10 and b>10	A==10 and b==5	output
1	10				
2	10	5			
3	10	5	False		
4	10	5		True	
5	10	5			No

```
main.py > ...

1    a = 10
2    b = 5
3    if a < 10 and b > 10:
4        print("Yes")
5    elif a == 10 and b == 5:
6        print("No")
7    elif a >= 10 and b <= 10:
8        print("Okay")</pre>
```

Step	а	b	a<10 or b>5	a==10 or b==5	output
1	10				
2	10	5			
3	10	5	False		
4	10	5		True	
5	10	5			No
6	10	5			

```
e main.py > ...
  1 \quad a = 10
  2 b = 5
  3 \vee if a < 10 or b > 5:
    print("Yes")
  5 \vee elif a == 10 or b == 5:
  6 print("No")
  7 \sim elif a >= 10 or b <= 10:
  8 print("Okay")
```

Step	А	b	a<10 or b>=5	A>=10 or b<=10	output
1	10				
2	10	5			
3	10	5	True		
4	10	5			Yes
5	10	5		True	
6	10	5			Okay

```
e main.py > ...
  1 \quad a = 10
  2 b = 5
  3 \vee if a < 10 or b >= 5:
       print("Yes")
  5 \vee elif a == 10 or b == 5:
           print("No")
  7 \vee if a >= 10 \text{ or } b <= 10:
          print("Okay")
```

Ste	n1	n2	sum	output
р				
1	3			
2	3	5		
3	3	5	35	
4	3	5	35	35

If user enter first: 3 and second 5

```
main.py > ...

1    n1 = input()
2    n2 = input()
3    sum = n1 + n2
4    print(sum)
```

Ste p	n1	n2	sum	output
1	3			
2	3	5		
3	3	5	8	
4	3	5	8	8

If user enter first : 3 and second 5

```
main.py > [②] n2

1     n1 = int(input())

2     n2 = int(input())

3     sum = n1 + n2

4     print(sum)
```

Step	n	i	output
1	3		
2	3	0	
3	3	0	3
4	3	1	
5	3	1	3
6	3	2	
7	3	2	3

```
# If user enter: 3
```

```
main.py > [②] i

1    n = int(input())
2    for i in range(n):
3     print(n)
```

Step	i	n	sum	output
1		3		
2		3	0	
3	0	3	0	
4	0	3	0	
5	0	3	0	0
6	1	3	0	
7	1	3	1	
8	1	3	1	1
9	2	3	1	
10	2	3	3	
11	2	3	3	3

If user enter: 3

```
main.py > [@] i

1    n = int(input())
2    sum = 0
3    for i in range(n):
4        sum = sum + i
5        print(sum)
```

Step	i	n	sum	output
1		2		
2		2	0	
3	0	2	0	
4	0	2	0	
5	1	2	0	
6	1	2	1	
7	1	2	1	1

```
# If user enter: 2
```

```
main.py > ...

1     n = int(input())
2     sum = 0
3          for i in range(n):
4          sum = sum + i
5          print(sum)
```

Step	i	j	k	i <j< th=""><th>output</th></j<>	output
1	0				
2	0	2			
3	0	2	3		
4	2	2	3		
5	3	2	3		
6	3	2	3	False	
7	3	2	3		I am here

```
main.py X
e main.py > ...
   1 \quad i = 0
   2 j = 2
   3 k = 3
   4 \quad i = j
   5 \quad i = k
       while i < j:
            print("Hello, world")
            i = i + 1
   8
       print("I am here")
```

Step	i	j	k	i <j< th=""><th>output</th></j<>	output
1	0				
2	0	2			
3	0	2	3		
4	0	2	3		
5	0	2	3	True	
6	0	2	3		Hello, world
7	1	2	3		
8	1	2	3	True	
9	1	2	3		Hello, world
10	2	2	3		
11	2	2	3	False	
12	2	2	3		I am here

```
🥊 main.py > 🕼 j
 1 \quad i = 0
 2 j = 2
 3 k = 3
 4 \quad j = k - 1
     while i < j:
 6
          print("Hello, world")
         i = i + 1
 8
     print("I am here")
```

Step	i	i<5	i>1	output
1	0			
2	0	True		
3	0		False	
4	1	True		
5	1		False	
6	2	True		
7	2		True	
8	2			Hello, world
9	3			
10	3	True		
11	3		True	
12	3			Hello, world
13	4			
14	4	True		
15	4		True	
16	4			Hello, world
17	5			
18	5	False		
19	5			I am here

1	0			
2	0	True		
3	0		False	
4	1			
5	1	True		
6	1		False	
7	2			
8	2	True		
9	2		True	
10	2			Hello, world
11	3			
12	3	True		
13	3		True	
14	3			Hello, world
15	4			
16	4	True		
17	4		False	
18	5			
19	5	False		
20	5			I am here

i>1 and i<4

output

i<5

Step

```
main.py > ...

1     i = 0
2     while i < 5:
3          if i > 1 and i < 4:
4                print("Hello, world")
5          i = i + 1
6     print("I am here")</pre>
```

			i <4		·
1	0				
2	0	True			
3	0		False		
4	1				
5	1	True			
6	1		False		
7	2				
8	2	True			
9	2		True		
10	2				Hello, world
11	3				
12	3	True			
13	3		True		
14	3				Hello, world
15	4	True			
16	4		False		
17	5				
18	5	False			
19	5			False	
20	5				I am not here

i>1 and i>5

output

Step

i<5

```
e main.py > ...
       while i < 5:
           if i > 1 and i < 4:
               print("Hello, world")
           i = i + 1
       if i > 5:
           print("I am here")
       else:
  8
           print("I am not here")
```

Hello, zero	
Hello, world	
Hello, world	
I am not here	

output

i>1and

False

False

True

False

False

True

False

True

True

False

False

True True

True

True

True

True

True

True Ture

True

True

True

True

False

17

```
e main.py > ...
      while i < 5:
           if i > 1 and i < 4:
               print("Hello, world")
          if i == 0:
              print("Hello, zero")
          i = i + 1
      if i > 5:
          print("I am here")
      else:
 10
           print("I am not here")
 11
```

1	0						,
2	0	""					· ·
3	0	""	True				
4	0	un		False			
5	0	""			True		🏓 n
6	0	Hello, zero					_
7	1	Helllo, zero					1
8	1	Hello, zero	True				2
9	1	Hello, zero		False			
10	1	Hello, zero			False		3
11	2	Hello, zero					4
12	2	Helo, zero	True				5
13	2	Hello, zero		True			5
14	2	Hello, world					6
15	2	Hello, world	True		False		7
16	3	Hello, world					/
17	3	Hello, world	True				8
18	3	Hello, world		True			9
19	3	Hello, world					
20	3	Hello, wold			False		
21	4	Hello, world					
22	4	Hello, world	True				
23	4	Hello, world		False			
24	4	Hello, world			False		
25	5	Hello, world					
26	5	Hello, world	False				
27	5	Hello, world				Hello, world	

I >4 and i<4

I == 0

output

Step

result

```
main.py > ...
   i = 0
   result = ""
 \vee while i < 5:
    if i > 1 and i < 4:
           result = "Hello, world"
       if i == 0:
           result = "Hello, zero"
        i = i + 1
   print(result)
```

Step	i	result	i<5	I >4 and i<4	I == 0	output	Write step following
1	0						- write step following
2	0	""					code below
3	0	417	True				- code below
4	0	ш		False			
5	0	ш			True		
6	0	Hello, zero					
7	1	Helllo, zero					
8	1	Hello, zero	True				
9	1	Hello, zero		False			
10	1	Hello, zero			False		🟓 main.py >
11	2	Hello, zero					1 i = 0
12	2	Helo, zero	True				2 result = ""
13	2	Hello, zero		True			3 while i < 5:
14	2	Hello, zero Hello, world					4 if i > 1 and i < 4:
15	2	Hello, zero Hello, world	True		False		5 result = result + "Hello, world"
16	3	Hello, zero Hello, world					6 if i == 0:
17	3	Hello, zero Hello, world	True				7 result = result + "Hello, zero"
18	3	Hello, zero Hello, world		True			8 i = i + 1
19	3	Hello, zero Hello, world Hello, wold					9 print(result)
20	3	Hello, zero Hello, world Hello, wold			False		
21	4	Hello, zero Hello, world Hello, wold					
22	4	Hello, zero Hello, world Hello, wold	True				
23	4	Hello, zero Hello, world Hello, wold		False			
24	4	Hello, zero Hello, world Hello, wold			False		
25	5	Hello, zero Hello, world Hello, wold					
26	5	Hello, zero Hello, world Hello, wold	False				
27	5	Hello, zero Hello, world Hello, wold				Hello, zero Hello, world Hello, world	

Step	а	sum	output
1	10		
2	10	0	
3	10	10	
4	10	10	10

```
main.py > [@] a

1     a = 10

2     sum = 0

3     sum += a # sum += a mean sum = sum + a
4     print(sum)
```

			<=1		
1	0				
2	0	True			
3	0				Hello
4	1	False			
5	1		False		
6	1			True	
7	1				No
8	2	False			
9	2		False		
10	2			True	
11	2				No
12	3	False			
13	3		False		
14	3			True	
15	3				No
16	4	False			
17	4		True		
18	4				Okay
19	5	False			
20	5		True		
21	5				Okay
22	6	Flase			
23	6		True		
24	6				Okay

I >= 4 and i

i>=1 and i<=3

output

Step

```
main.py > [②];

1     for i in range(7):
2         if i == 0:
3             print("Hello")
4         elif i >= 4 and i <=7:
5             print("Okay")
6         elif i >=1 and i <= 3:
7             print("No!")</pre>
```

Wri
•

```
🥐 main.py 🗦 🕪 i
      number = 0
      for i in range(7):
          if i == 0:
               number += 1
          elif i >= 4 and i <= 7:
  5
              number += 2
  6
          elif i >= 1 and i <= 3:
               number += 3
      print(number)
```

```
0
                            True
         0
                             False
                                        False
                                                    True
                             Fasle
                                        False
10
                                                    True
12
                             False
13
                                        False
14
                                                    True
15
16
         3
                 10
                             False
17
                                        True
                 12
19
                             False
20
                                        True
                 14
22
                             False
24
         6
                 14
                                        True
```

I >= 1 and

i<=3

output

16

I >= 4 and

i<=7

Step

25

16

number