match statement

match statement is introduced in python 3.10 version
match statement is similar to switch statement in C,C++ and Java
match is a selection statement or conditional statement.
This statement is used to execute block of statements based on equality of value, we use match statement.

Syntax:

```
match(expression/value):
        case <value>:
                statement-1
        case <value>:
                statement-2
        case <value>:
                statement-3
        case _:
                statement-4
```

Example:

```
num=int(input("enter any number"))
match(num):
   case 1:
      print("I")
   case 2:
      print("II")
   case 3:
      print("III")
   case 4:
      print("IV")
   case 5:
      print("V")
   case _:
      print("invalid number")
```

Output:

```
enter any number2
II
```

```
========= RESTART: F:/python6pmaug/test48.py =========
enter any number4
IV

========= RESTART: F:/python6pmaug/test48.py =========
enter any number8
invalid number
```

Example:

```
print("1. Area of Triangle")
print("2. Area of Circle")
print("3. Exit")
opt=int(input("Enter your option"))
match(opt):
    case 1:
        base,height=map(float,input("enter base,height").split())
        area=0.5*base*height
        print("Area of triangle is ",round(area,2))
    case 2:
        r=float(input("enter radius"))
        area=3.147*r*r
        print("Area of circle is ",round(area,2))
    case 3:
        print("Bye")
    case _:
        print("invalid option")
```

Output:

```
========= RESTART: F:/python6pmaug/test49.py =========
1. Area of Triangle
2. Area of Circle
3. Exit
Enter your option1
enter base,height1.5 2.5
Area of triangle is  1.88

========== RESTART: F:/python6pmaug/test49.py =========
1. Area of Triangle
2. Area of Circle
```

```
3. Exit
Enter your option2
enter radius1.2
Area of circle is  4.53

========== RESTART: F:/python6pmaug/test49.py =========
1. Area of Triangle
2. Area of Circle
3. Exit
Enter your option3
Bye

========== RESTART: F:/python6pmaug/test49.py =========
1. Area of Triangle
2. Area of Circle
3. Exit
Enter your option5
invalid option
```

Loop control statements

These statements are used to repeat one or more than one statement number of times or until given condition.

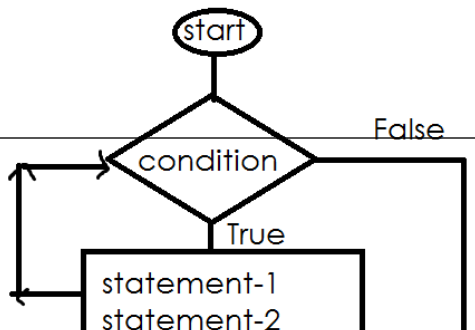
Python support two types looping control statements

1. While loop
2. For loop

While loop

"while" is a keyword, which is used to represent while loop

While loop repeat one or more than one statement until given condition is True.

Syntax: while <condition>:	

statement-1 statement-2 statement-3 statement-1,statement-2 are repeated until condition is True.	

```
# find output

while False:
    print("Python")
print("Jython")
```

Output:
Jython

```
# find output

while True:
    print("Python")
print("Jython")
```

Output:
Python is printed infinite times

```
# Find output
n=1
while n<=5:
    print("Python")
    n=n+1

print("Jython")
```

Output:

Python
Python
Python
Python
Python
Jython

While loop or statement required 3 statements

1. Initialization statement
2. Condition
3. Update

Initialization statement, which defines initial value of condition
Condition, is a Boolean expression which defines how many time while loop has to be repeated.
Update statement, is statement which update the value of condition.

Example:

```
# write a program to print 1 to 10 numbers

num=1
while num<=10:
    print(num)
    num=num+1
```

Output:

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

Example:

```
# write a program to print sum of 10 numbers
# input 10 numbers from keyboard
```

```
i=1
s=0
while i<=10:
    num=int(input("enter any number"))
    s=s+num
    i=i+1

print("Sum is ",s)
```

Output:

```
enter any number10
enter any number20
enter any number30
enter any number40
enter any number50
enter any number60
enter any number70
enter any number80
enter any number90
enter any number100
Sum is  550
```

Example:

```
# write a program to print numbers from 10 to 1

num=10
while num>=1:
    print(num,end=" ")
    num=num-1
```

Output:

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

Example:

```
# write a program to print alphabets from A-Z

n=65
```

```
while n<=90:
    print(n,"=",chr(n))
    n=n+1
n=97
while n<=122:
    print(n,"=",chr(n))
    n+=1
```

Output:

```
65 = A
66 = B
67 = C
68 = D
69 = E
70 = F
71 = G
72 = H
73 = I
74 = J
75 = K
76 = L
```

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```
T=int(input())
while T>0:
    cab1,cab2=map(int,input().split())
    if cab1<cab2:
        print("FIRST")
    elif cab2<cab1:
        print("SECOND")
    else:
        print("ANY")
    T=T-1
```