In [4]:
```
x = int(input("what's x ? "))
y = int(input("what's y ? "))

if x > y:
    print("x is greater than y") ##first checks the number x<y (which will have tru
if x < y:
    print("x is less than y") ##similarly it will check the condition and follow tr
if x==y:
    print("x is equal to y")
```

```
x is less than y
```

In [8]:
```
##instead of using many ifs
x = int(input("what's x ? "))
y = int(input("what's y ? "))

if x > y:
    print("x is greater than y")
elif x < y:
    print("x is less than y")
elif x==y:
    print("x is equal to y")

##if we get back the true answer right away to the first "if", it gonna print out t
##suppose the first if is false, it moves to the next line of question, and checks
```

```
x is greater than y
```

In [10]:
```
x = int(input("what's x ? "))
y = int(input("what's y ? "))

if x > y:
    print("x is greater than y")
elif x < y:
    print("x is less than y")
else:
    print("x is equal to y")

##The else block provides an alternative code path to execute when none of the prec
```

```
x is equal to y
```

In [12]:
```
##asking a couple of questions one at a time - whether x is equal to y or not
x = int(input("what's x ? "))
y = int(input("what's y ? "))

if x > y or x < y:
    print("x is not equal to y")
else:
    print("x is equal to y")

##The or functions - if at least one of them is considered "truthy" returns True
##If both operands are "falsy" returns false
print("-" *30)
x = int(input("what's x ? "))
y = int(input("what's y ? "))
```

```
if x > y or x < y:
    print("x is not equal to y")
else:
    print("x is equal to y")
```

```
x is not equal to y
------------------------------
x is equal to y
```

In [14]:
```
##checking whether x is equal to y or not , instead of using above code
x = int(input("what's x ? "))
y = int(input("what's y ? "))

if x != y:
    print("x is not equal to y")
else:
    print("x is equal to y")

print("-" * 30)

x = int(input("what's x ? "))
y = int(input("what's y ? "))

if x == y:
    print("x is equal to y")
else:
    print("x is not equal to y")
```

```
x is not equal to y
------------------------------
x is not equal to y
```

In [4]:
```
##Grading
score = int(input("Enter the score : " ))

if score >= 90 and score <= 100:
    print("Grade A")
elif score >= 80 and score < 90:
    print("Grade B")
elif score >= 70 and score < 80:
    print("Grade C")
elif score >= 60 and score < 70:
    print("Grade D")
elif score >= 50 and score < 60:
    print("Grade E")
else:
    print("Grade F")

## evaluates to True only if all the conditions it connects are True.
##If even one of the conditions is False, the entire expression evaluates to False
```

```
Grade E
```

In [6]:
```
##another way of grading
score = int(input("Enter the score : " ))
```

```
if 90 <= score <= 100:
    print("Grade A")
elif 80 <= score < 90:
    print("Grade B")
elif 70 <= score < 80:
    print("Grade C")
elif 60 <= score < 70:
    print("Grade D")
elif 50 <= score < 60:
    print("Grade E")
else:
    print("Grade F")
```

```
Grade E
```

In [7]:
```
##another way of grading
score = int(input("Enter the score : " ))

if score >= 90:
    print("Grade A")
elif score >= 80:
    print("Grade B")
elif score >= 70:
    print("Grade C")
elif score >= 60:
    print("Grade D")
elif score >= 50:
    print("Grade E")
else:
    print("Grade F")
```

```
Grade E
```

In [12]:
```
##example showing if we don't make these conditons mutually exclusive
score = int(input("Enter the score : " ))

if score >= 90:
    print("Grade A")
if score >= 80:
    print("Grade B")
if score >= 70:
    print("Grade C")
if score >= 60:
    print("Grade D")
if score >= 50:
    print("Grade E")

##because the score 95 is greater for all the ifs conditions and print grade A B C
```

```
Grade A
Grade B
Grade C
Grade D
Grade E
```

In [13]:
```
## checking if x is even or odd
x = int(input())
```

```
if x % 2 == 0:
    print("x is even")
else:
    print("x is odd")

##7 divided by 2 is 3 with a remainder of 1 , we want remainder 0 to say x is even
```

```
x is odd
```

In [15]:
```
## checking if x is even or odd - using def function

def main():
    x = int(input())
    if is_even(x):
        print("Even")
    else:
        print("odd")

def is_even(n):
    if n % 2 == 0:
        return True
    else:
        return False

main()

## The program takes an integer input from the user, uses a helper function is_even
##then prints the corresponding result.
```

```
odd
```

In [19]:
```
## checking if x is even or odd - using def function

def is_even():
    n = int(input())
    if n % 2 == 0:
        print("Even")
    else:
        print("odd")

is_even()
```

```
odd
```

In [20]:
```
## checking if x is even or odd - using def function


def main():
    x = int(input())
    if is_even(x):
        print("Even")
    else:
        print("odd")

def is_even(n):
        return True if n % 2 == 0 else False
```

```
main()
```

```
odd
```

In [24]:
```
name = input("What's your name ? ")

if name == "Sree":
    print("Stay : Hongasandra")
elif name == "Priya":
    print("Stay : Hongasandra")
elif name == "Sree Priya":
    print("Stay : Hongasandra")
elif name == "Krishna Priya":
    print("Stay : BTM")
else:
    print("who?")

print("-"*30)

## instead of writing the entire, we can consolidate to a smaller
name = input("What's your name ? ")

if name == "Sree" or name == "Priya" or name == "Sree Priya":
    print("Stay : Hongasandra")
elif name == "Krishna Priya":
    print("Stay : BTM")
else:
    print("who?")
```

```
Stay : Hongasandra
------------------------------
Stay : Hongasandra
```

In [25]:
```
##another technique to do - match
name = input("What's your name ? ")

match name:
    case "Sree":
        print("Hongasandra")
    case "Priya":
        print("Hongasandra")
    case "Sree Priya":
        print("Hongasandra")
    case "Krishna Priya":
        print("Btm")
    case _:                    ##whatever case has not yet been handled , go ahead
        print("who?")

print("-" * 30)

name = input("What's your name ? ")

match name:
    case "Sree":
        print("Hongasandra")
    case "Priya":
```

```
        print("Hongasandra")
    case "Sree Priya":
        print("Hongasandra")
    case "Krishna Priya":
        print("Btm")
    case _:                     ##whatever case has not yet been handled , go ahead
        print("who?")
```

```
Hongasandra
------------------------------
who?
```

In [26]:
```
##instead of writing the entire line, we can consolidate to a smaller

name = input("What's your name ? ")

match name:
    case "Sree" | "Priya" | "Sree Priya":
        print("Hongasandra")
    case "Krishna Priya":
        print("Btm")
    case _:
        print("who?")
```

```
Hongasandra
```

In [ ]:
```
### PRACTICE PROBLEMS
```

In [32]:
```
##### program to design a basic calculator.
##The program should allow the user to input two numbers and choose an operation (a
##display the result.

a = float(input("Enter the number: "))
b = float(input("Enter the number: "))
operation = input("Enter the operation : ")

if operation == "+":
    print("The sum of two numbers is : " ,a + b)
elif operation == "-":
    print("The difference of the two numbers is : " , a - b)
elif operation == "*":
    print("The product of the two numbers is : " , a * b)
elif operation == "/":
    if b == 0:
        print("Cannot divide by zero")
    else:
        print("The division of the two numbers is:", a / b)
else:
    print("Operation is invalid")

print("-" * 30)
##instead of big line code: using another technique match

def calculator(a,b,operator):
    match operation:
        case '+':
            return a + b
```

```
        case '-':
            return a - b
        case '*':
            return a * b
        case '/':
            if b != 0:
                return a / b
            else:
                return "Error: Division by zero"
        case _:
            return "Error: Invalid operation"
print(calculator(5,7,"-"))
```

```
The difference of the two numbers is :  -2.0
------------------------------
-2
```

In [33]:
```
###### Python program that accepts the basic salary of an employee as input and
##calculates the Dearness Allowance (DA) and House Rent Allowance (HRA) based on th
##salary slab below:
#Basic Salary          DA (%) HRA (%)
#Up to ₹5000              10% 20%
#₹5001 to ₹10,000         20% 30%
#₹10,001 to ₹20,000       30% 40%
#Above ₹20,000            50% 50%

basic_salary = int(input("Enter the salary : " ))

if basic_salary <= 5000:
    da_percent=0.10
    hra_percent=0.20
elif basic_salary <= 10000:
    da_percent=0.20
    hra_percent=0.30
elif basic_salary <= 20000:
    da_percent=0.30
    hra_percent=0.40
else:
    da_percent = 0.50
    hra_percent = 0.50

# Calculate the actual DA and HRA amounts
print("Dearness Allowance (DA): " ,basic_salary * da_percent)
print("House Rent Allowance (HRA): ",basic_salary * hra_percent)
```

```
Dearness Allowance (DA):  1300.0
House Rent Allowance (HRA):  1950.0
```

In [ ]:
```
##Deep thought
“All right,” said the computer, and settled into silence again. The two men fidgete
“You’re really not going to like it,” observed Deep Thought.
“Tell us!”
“All right,” said Deep Thought. “The Answer to the Great Question…”
“Yes…!”
“Of Life, the Universe and Everything…” said Deep Thought.
“Yes…!”
“Is…” said Deep Thought, and paused.
```

```
“Yes…!”
“Is…”
“Yes…!!!…?”
“Forty-two,” said Deep Thought, with infinite majesty and calm.”

implement a program that prompts the user for the answer to the Great Question of L
outputting Yes if the user inputs 42 or (case-insensitively) forty-two or forty two
```

In [35]:
```
## get the user input
answer = input("What is the answer to the Great Question of Life, the Universe and

if answer == 42:
  print("Yes")
elif answer == "forty-two":
  print("Yes")
else:
    print("No")
```

```
Yes
```

In [ ]:
```
##Meal Time
Suppose that you’re in a country where it’s customary to eat breakfast between 7:00

implement a program that prompts the user for a time and outputs whether it’s break
Assume that the user’s input will be formatted in 24-hour time as #:## or ##:##. An

Structure your program per the below, wherein convert is a function (that can be ca
```

In [15]:
```
def main():
    enter = input()
    time = convert(enter)

#checking conditions
    if 7.00 <= time <= 8.00:
        print("breakfast time")
    elif 12.00 <= time <= 13.00:
        print("Lunch time")
    elif 18.00 <= time <= 19.00:
        print("Dinner time")
    else:
        print("Not time for meal")

#converting time
def convert(time):
    hour, minute = time.split(":")
    hours = float(hour)
    minutes = float(minute)

    decimal_time = hours + (minutes / 60)
    return decimal_time

main()
```

```
breakfast time
```

In [ ]:
```
##Math interpreter
implement a program that prompts the user for an arithmetic expression
then calculates and outputs the result as a floating-point value formatted to one d
Assume that the user's input will be formatted as x y z, with one space between x a

x is an integer
y is +, -, *, or /
z is an integer
For instance, if the user inputs 1 + 1, your program should output 2.0. Assume that
```

In [7]:
```
#user input
Expressions = input()

# splitting
x, y, z = Expressions.split(" ")

#change to float
x = float(x)
z = float(z)

#conditions
if y == "+":
    result = x + z
elif y == "-":
    result = x - z
elif y == "*":
    result = x * z
elif y == "/":
    result = x / z
else:
    print("Invalid operator")

# Print the result formatted to one decimal place
print(f"{result:.1f}")
```

```
2.0
```