if statement

In [1]:
```
if True:
    print('hello')
```

```
hello
```

In [2]:
```
if True:
print('hello')
```

```
  Cell In[2], line 2
    print('hello')
    ^
IndentationError: expected an indented block after 'if' statement on line 1
```

In [3]:
```
if True:
    print('hello')
```

```
hello
```

In [4]:
```
if False:
    print('bye')
```

In [5]:
```
if True:
    print('Data Science')
print('Bye for now')
```

```
Data Science
Bye for now
```

In [7]:
```
if False:
    print('Data Science')

print('bye for now')
```

```
bye for now
```

In [8]:
```
if True:
    print('Data Science')

print('bye for now')
```

```
Data Science
bye for now
```

if else statement

In [9]:
```
if True:
    print('Data Science')

else:
    print('bye for now')
```

```
Data Science
```

In [10]:
```
if False:
    print('Data Science')

else:
    print('bye for now')
```

```
bye for now
```

write python code to check wheather number is even or odd

In [11]:
```
x = 4
r = x % 2
if r==0:
    print('Even Number')
```

```
Even Number
```

In [15]:
```
x=6
r=x%2
if r==0:
    print('Even Number')

if r==1:
    print('odd Number')
```

```
Even Number
```

In [16]:
```
x=5
r=x%2
if r==0:
    print('Even Number')

if r==1:
    print('odd Number')
```

```
odd Number
```

In [17]:
```
x=5
r==x%2
if r==0:
    print('Even Number')

else:
    print('odd Number')
```

```
odd Number
```

In [18]:
```
x=6
r=x%2
if r==0:
    print('Even Number')
```

```
else:
    print('odd Number')
```

```
Even Number
```

In [19]:
```
x=6
r=x%2
if r==0:
    print('Even Number')
print('Odd Number')
```

```
Even Number
Odd Number
```

In [20]:
```
x=4
r=x%2
if r==0:
    print('even number')
else:
    print('odd number')
```

```
even number
```

In [21]:
```
x=5
r=x%2
if r==0:  print('even number')
else: print('odd number')
```

```
odd number
```

In [23]:
```
x=10
r=x%2
if r==0:
    print('Even number')
if r==1:
    print('odd number')
```

```
Even number
```

In [24]:
```
x=9
r=x%2
if r==0:
    print('even number')
if r !=0:
    print('odd number')
```

```
odd number
```

nested if statement

In [25]:
```
x=3
r=x%2
if r==0:
    print('Even number')
    if x>5:
```

```
        print('greater number')

else:
    print('odd number')
```

```
odd number
```

In [26]:
```
x = 6
r = x % 2

if r == 0:
    print('Even number')

    if x>5:
        print('greater number')
    else:
        print('smaller number')
else:
    print('odd number')
```

```
Even number
greater number
```

In [27]:
```
x=4

if x==1:
    print('one')
if x==2:
    print('two')
if x==3:
    print('Three')
if x==4:
    print('four')
```

```
four
```

if elif elif statement

In [28]:
```
x = 2

if x == 1:
    print('one')
elif x == 2:
    print('Two')
elif x == 3:
    print('Three')
elif x == 4:
    print('four')
```

```
Two
```

In [29]:
```
x = 10

if x == 1:
    print('one')
```

```
elif x == 2:
    print('Two')
elif x == 3:
    print('Three')
elif x == 4:
    print('four')
```

In [30]:
```
x = 10

if x == 1:
    print('one')
elif x == 2:
    print('Two')
elif x == 3:
    print('Three')
elif x == 4:
    print('four')

else:
    print('Number not found')
```

```
Number not found
```

In [31]:
```
num = int(input("Enter a number:"))
if num>0:
    print("positive")
elif num<0:
    print("Negative")
else:
    print("Zero")
```

```
positive
```

geeksforgeeks

In [3]:
```
age = 20
if age >= 18:
    print("Eligible to vote.")
```

```
Eligible to vote.
```

In [4]:
```
age = 19
if age > 18: print("Eligible to Vote.")
```

```
Eligible to Vote.
```

In [5]:
```
age = 10

if age <= 12:
    print("Travel for free.")
else:
    print("Pay for ticket.")
```

```
Travel for free.
```

In [7]:
```
marks = 35
res = "Pass" if marks >= 40 else "Fail"

print(f"Result: {res}")
```

```
Result: Fail
```

In [8]:
```
age = 25

if age <= 12:
    print("Child.")
elif age <= 19:
    print("Teenager.")
elif age <= 35:
    print("Young adult.")
else:
    print("Adult.")
```

```
Young adult.
```

In [9]:
```
age = 70
is_member = True

if age >= 60:
    if is_member:
        print("30% senior discount!")
    else:
        print("20% senior discount.")
else:
    print("Not eligible for a senior discount.")
```

```
30% senior discount!
```

In [10]:
```
# Assign a value based on a condition
age = 20
s = "Adult" if age >= 18 else "Minor"

print(s)
```

```
Adult
```

In [11]:
```
number = 2

match number:
    case 1:
        print("One")
    case 2 | 3:
        print("Two or Three")
    case _:
        print("Other number")
```

```
Two or Three
```

In [ ]:
```
# Python If Else Statements – Conditional Statements
```

In [12]:
```
i = 10
```

```
 # Checking if i is greater than 15
if (i > 15):
    print("10 is less than 15")

print("I am Not in if")
```

```
I am Not in if
```

In [14]:
```
i = 20

 # Checking if i is greater than 0
if (i > 0):
    print("i is positive")
else:
    print("i is 0 or Negative")
```

```
i is positive
```

In [15]:
```
a = -2

# Ternary conditional to check if number is positive or negative
res = "Positive" if a >= 0 else "Negative"
print(res)
```

```
Negative
```

In [16]:
```
age = 25
exp = 10

# Using '>' operator & 'and' with if-else
if age > 23 and exp > 8:
    print("Eligible.")
else:
    print("Not eligible.")
```

```
Eligible.
```

In [17]:
```
i = 10
if (i == 10):

    #  First if statement
    if (i < 15):
        print("i is smaller than 15")

    # Nested - if statement
    # Will only be executed if statement above
    # it is true
    if (i < 12):
        print("i is smaller than 12 too")
    else:
        print("i is greater than 15")

else:
  print("i is not equal to 10")
```

```
i is smaller than 15
i is smaller than 12 too
```

In [18]:
```
i = 25

 # Checking if i is equal to 10
if (i == 10):
    print("i is 10")
 # Checking if i is equal to 15

elif (i == 15):
    print("i is 15")
 # Checking if i is equal to 20

elif (i == 20):
    print("i is 20")

 # If none of the above conditions are true
else:
    print("i is not present")
```

```
i is not present
```

In [ ]:
```
# if , if..else, Nested if, if-elif statements
```

In [54]:
```
# if statement example
if 10 > 5:
    print("10 greater than 5")

print("Program ended")
```

```
10 greater than 5
Program ended
```

In [55]:
```
# if..else statement example
x = 3
if x == 4:
    print("Yes")
else:
    print("No")
```

```
No
```

In [56]:
```
# if..else chain statement
letter = "A"

if letter == "B":
    print("letter is B")

else:

    if letter == "C":
        print("letter is C")

    else:

        if letter == "A":
            print("letter is A")
```

```
        else:
            print("letter isn't A, B and C")
```

```
letter is A
```

In [57]:
```
# Nested if statement example
a = 10

if a > 5:
    print("Bigger than 5")

    if a <= 15:
        print("Between 5 and 15")
```

```
Bigger than 5
Between 5 and 15
```

In [58]:
```
# if-elif statement example
letter = "A"

if letter == "B":
    print("letter is B")

elif letter == "C":
    print("letter is C")

elif letter == "A":
    print("letter is A")

else:
    print("letter isn't A, B or C")
```

```
letter is A
```

In [59]:
```
x = 10
y = 5
if x > 5:
    if y > 5:
        print("x is greater than 5")
    elif y==5:
         print("x is greater than 5 and y is 5")
    else:
        print("x is greater than 5 and y is less than 5")
```

```
x is greater than 5 and y is 5
```

In [ ]:
```
# Nested-if statement
```

In [60]:
```
age = 30
member = True

if age > 18:
    if member:
        print("Ticket price is $12.")
    else:
        print("Ticket price is $20.")
else:
```

```
    if member:
        print("Ticket price is $8.")
    else:
        print("Ticket price is $10.")
```

```
Ticket price is $12.
```

In [61]:
```
i = 0;

# if condition 1
if i != 0:
    # condition 1
    if i > 0:
        print("Positive")

    # condition 2
    if i < 0:
        print("Negative")
else:
    print("Zero")
```

```
Zero
```

In [ ]:
```
# Python If Else in One Line
```

In [62]:
```
x = 10
y = 5

res = "x is greater" if x > y else "y is greater"
print(res)
```

```
x is greater
```

In [63]:
```
n = -5

res = "Positive" if n > 0 else "Negative" if n < 0 else "Zero"

print(res)
```

```
Negative
```

In [64]:
```
x = 15

res = "Greater than 20" if x > 20 else "Greater than 10" if x > 10 else "10 or less
print(res)
```

```
Greater than 10
```

In [65]:
```
# Check multiple conditions in if statement
```

In [ ]:
```
# Syntax:

#if (condition):
    #code1
#else:
    #code2
```

In [66]:
```
age = 18

if ((age>= 8) and (age<= 12)):
    print("YOU ARE ALLOWED. WELCOME !")
else:
    print("SORRY ! YOU ARE NOT ALLOWED. BYE !")
```

```
SORRY ! YOU ARE NOT ALLOWED. BYE !
```

In [67]:
```
var = 'N'

if (var =='Y' or var =='y'):
    print("YOU SAID YES")
elif(var =='N' or var =='n'):
    print("YOU SAID NO")
else:
    print("INVALID INPUT")
```

```
YOU SAID NO
```

In [68]:
```
a = 7
b = 9
c = 3


if((a>b and a>c) and (a != b and a != c)):
    print(a, " is the largest")
elif((b>a and b>c) and (b != a and b != c)):
    print(b, " is the largest")
elif((c>a and c>b) and (c != a and c != b)):
    print(c, " is the largest")
else:
    print("entered numbers are equal")
```

```
9  is the largest
```

In [69]:
```
a = 1
b = 1
c = 1
if(a == 1 and b == 1 and c == 1):
    print("working")
else:
    print("stopped")
```

```
working
```

In [71]:
```
 # Python if AND
```

In [72]:
```
a = 20  # age
b = True  # Citizen status
if a >= 18 and b:
    print("Eligible")
else:
    print("Ineligible")
```

```
Eligible
```

In [73]:
```
a = 23 # age
b = "yes" # permission

if a >= 18 and b == "yes":
    print("Granted")
else:
    print("Denied")
```

```
Granted
```

In [74]:
```
p = "securePass123" #password
if len(p) >= 8 and any(char.isdigit() for char in p):
    print("Valid")
else:
    print("Invalid")
```

```
Valid
```

In [75]:
```
a = 50  # health
b = True  # has_weapon
if a > 0 and b:
    print("Fight")
else:
    print("No Fight")
```

```
Fight
```

In [76]:
```
# Python Match Case Statement
```

In [77]:
```
def check_number(x):
    match x:
        case 10:
            print("It's 10")
        case 20:
            print("It's 20")
        case _:
            print("It's neither 10 nor 20")

check_number(10)
check_number(30)
```

```
It's 10
It's neither 10 nor 20
```

In [78]:
```
def greet(person):
    match person:
        case "A":
            print("Hello, A!")
        case "B":
            print("Hello, B!")
        case _:
            print("Hello, stranger!")

greet("A")
greet("B")
```

```
Hello, A!
Hello, B!
```

In [79]:
```python
def num_check(x):
    match x:
        case 10 | 20 | 30:  # Matches 10, 20, or 30
            print(f"Matched: {x}")
        case _:
            print("No match found")

num_check(10)
num_check(20)
num_check(25)
```

```
Matched: 10
Matched: 20
No match found
```

In [80]:
```python
def num_check(x):
    match x:
        case 10 if x % 2 == 0:  # Match 10 only if it's even
            print("Matched 10 and it's even!")
        case 10:
            print("Matched 10, but it's not even.")
        case _:
            print("No match found")

num_check(10)
num_check(15)
```

```
Matched 10 and it's even!
No match found
```

In [81]:
```python
def process(data):
    match data:
        case [x, y]:
                # A list with two elements
            print(f"Two-element list: {x}, {y}")
        case [x, y, z]:
                # A list with three elements
            print(f"Three-element list: {x}, {y}, {z}")
        case _:
            print("Unknown data format")

process([1, 2])
process([1, 2, 3])
process([1, 2, 3, 4])
```

```
Two-element list: 1, 2
Three-element list: 1, 2, 3
Unknown data format
```

In [82]:
```python
def person(person):
    match person:

        # Dictionary with name and age keys
        case {"name": name, "age": age}:
```

```
            print(f"Name: {name}, Age: {age}")

        # Dictionary with only name key
        case {"name": name}:
            print(f"Name: {name}")
        case _:
            print("Unknown format")

person({"name": "Alice", "age": 25})
person({"name": "Bob"})
person({"city": "New York"})
```

```
Name: Alice, Age: 25
Name: Bob
Unknown format
```

In [ ]:
```
# Ternary Operator in Python
```

In [84]:
```
n = 5
res = "Even" if n % 2 == 0 else "Odd"
print(res)
```

```
Odd
```

In [85]:
```
n = -5

res = "Positive" if n > 0 else "Negative" if n < 0 else "Zero"
print(res)
```

```
Negative
```

In [86]:
```
n = 7
res = ("Odd", "Even")[n % 2 == 0]
print(res)
```

```
Odd
```

In [87]:
```
a = 10
b = 20
max = {True: a, False: b}[a > b]
print(max)
```

```
20
```

In [88]:
```
a = 10
b = 20
max = (lambda x, y: x if x > y else y)(a, b)
print(max)
```

```
20
```

In [89]:
```
a = 10
b = 20

print("a is greater" if a > b else "b is greater")
```

```
b is greater
```