Conditional Statement

- if
- else
- nested if
- if elif else

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

```
Data Science
```

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

print('bye for now')
```

```
bye for now
```

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

print('bye for now')
```

```
Data Science
bye for now
```

if

else

In [11]:
```
if True:
    print('Data Science')
else:
    print('no job')
```

```
Data Science
```

In [12]:
```
if False:
    print('Data Science')
else:
    print('no job')
```

```
no job
```

In [13]:
```
x = 4
r = x % 2
```

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

```
Even number
```

In [15]:
```
x = 5
r = x % 2

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

In [16]:
```
x = 5
r = x % 2

if r != 0:
    print('Odd number')
```

```
Odd number
```

In [17]:
```
x = 7
r = x % 2
if r == 1:
    print('odd number')
```

```
odd number
```

In [19]:
```
x = 5
r = x % 2
if r == 0:
    print('Even number')

print('odd number')
```

```
odd number
```

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

print('odd number')
```

```
Even number
odd number
```

In [21]:
```
x = 9
r = x % 2

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

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

```
odd number
```

In [22]:
```
x = 8
r = x % 2
```

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

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

```
Even number
```

In [23]:
```
x = 8
r = x % 2

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

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

```
Even number
```

In [24]:
```
x = 9
r = x % 2

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

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

```
odd number
```

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 = 4
r = x % 2

if r == 0:
    print('Even number')
    if x>5:
        print('greater number')

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

```
Even number
```

In [27]:
```
x = 14
r = x % 2

if r == 0:
    print('Even number')
    if x>5:
        print('greater number')

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

```
Even number
greater number
```

nested if

In [35]:
```
x = 4
r = x % 2

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

    if x>5:
        print('greater number')
    else:
        print('lesser number')

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

```
Even number
lesser number
```

In [39]:
```
x = 3

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

```
Three
```

In [40]:
```
x = 1

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

```
if x == 4:
    print('four')
```

```
one
```

if

elif

else

In [41]:
```
x = 1

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

```
one
```

In [43]:
```
x = 5

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
```

if Conditional Statement

In [5]:
```
age = 19
if age > 18:
   print("Eligible to Vote")
```

```
Eligible to Vote
```

Short hand if

- Short-hand if statement allows us to write a single-line if statement.

In [1]:
```
age = 19
if age > 18:print("eligible to vote")
```

```
eligible to vote
```

Ternary Conditional Statement

- A ternary conditional statement is a compact way to write an if-else condition in a single line. It's sometimes called a conditional expression

In [6]:
```
# Assign a value based on a condition
age = 20
s = "adult" if age >= 18 else "Minor"
print(s)
```

```
adult
```

Basic Practice Tasks (Warm up Round)

1. Odd or Even Checker

In [7]:
```
x = 11
if x % 2 ==0:
    print("even number")
else:
    print("odd number")
```

```
odd number
```

In [11]:
```
user = int(input("enter a number to check wether its a odd number or even number"))
if user % 2 == 0:
    print("even number")
else:
    print("odd number")
```

```
even number
```

2. Voting Eligibility

In [17]:
```
age = 21
if age >= 18:
    print("you are aligible to vote ",age)
else:
    print("you are not aligible to vote now",age)
```

```
you are aligible to vote  21
```

In [15]:
```
age =  int(input("enter your age"))
if age >= 18:
    print("yoy are aligible to vote",age)
else:
    print("you are not aligible to vote now",age)
```

```
yoy are aligible to vote 20
```

Option 2

In [19]:
```
age = int(input("enter your age for checking wether you are eligible to vote or not
if age >= 18:
    print("congratulation you are aligible to vote from this year")
elif age>60:
    print("i am soryy but you have votre enough now you are not aligibel")
elif age<=0:
    print("enter valid age ")
elif age<=18:
    print("i am sorry but you are too young to vote wait for few years to vote",age
```

```
i am sorry but you are too young to vote wait for few years to vote 17
```

3. Positive, Negative or Zero

In [22]:
```
user = int(input("choose a number between 0 1 and -1"))
if user==0:
    print("enterend number is zero",user)
elif user>0:
    print("enterd number is positive",user)
elif user<0:
    print("enter number is negative number",user)
```

```
enter number is negative number -2
```

4. Leap Yer Checker

In [24]:
```
year = int(input("enter year to see wheather its a leap year or not"))
if (year % 400==0) or (year % 4 == 0 and year % 100 != 0):
    print("its a leap year",year)
else:
    print("its not a leap year",year)
```

```
its not a leap year 2025
```

5. Password Strength Checker

In [27]:
```
password = input("enter your password")
has_digit = False
```

```
has_special = False
special_char = "!@#$%^&*()-_=+[]{};:',.<>?/|`~"
```

6. Discount Calculator

In [37]:
```
bill = float(input("enter your total bill"))
if bill > 5000:
    discount = 0.20 * bill
elif bill>2000:
    discount = 0.10 * bill
else:
    discount = 0
final_bill = bill - discount
print("discount applied:",discount)
print("final amount to pay",final_bill)
```

```
discount applied: 210.0
final amount to pay 1890.0
```

7. Number Guessing Game

In [41]:
```
secret = 69
guess = int(input("Enter a number between 60 and 70: "))
if guess < 60 or guess > 70:
    print("Bro read the game rule first! Stay between 60 and 70.")
elif guess == secret:
    print("Wow! You guessed the right number!")
else:
    print(" Well tried, but that’s not the right number. Try again!")
```

```
Well tried, but that’s not the right number. Try again!
```

Loops in Python

In [42]:
```
print('ds')
print('ds')
print('ds')
print('ds')
print('ds')
```

```
ds
ds
ds
ds
ds
```

In [43]:
```
i = 1          # initializing

while i<=5:    # condition
```

```
    print('data science')
    i = i + 1  # increment
```

```
data science
data science
data science
data science
data science
```

In [44]:
```
i = 5          # initializing

while i>=1:    # condition
    print('data science')
    i = i - 1  # decrement
```

```
data science
data science
data science
data science
data science
```

In [45]:
```
i = 1         # initializing
while i<=5:    # condition
    print('data science : ', i)
    i = i + 1  # increment
```

```
data science :  1
data science :  2
data science :  3
data science :  4
data science :  5
```

In [46]:
```
i = 5          # initializing

while i>=1:    # condition
    print('data science',i)
    i = i - 1  # decrement
```

```
data science 5
data science 4
data science 3
data science 2
data science 1
```

In [47]:
```
i = 1

while i<=5:
    print('data science') # when we mention end then new line will not create
    j = 1
    while j<=4:
        print('technology')
        j = j + 1

    i = i + 1
    print()

    # the output which we got is very lengty but how to make them one line lets ref
```

```
data science
technology
technology
technology
technology

data science
technology
technology
technology
technology

data science
technology
technology
technology
technology

data science
technology
technology
technology
technology

data science
technology
technology
technology
technology
```

In [48]:
```
i = 1
while i<=5:
    print(' datascience', end = "") # when we mention end then new line will not cr
    j = 1
    while j<=4:
        print(' technology', end="")
        j = j + 1

    i = i + 1
    print()
```

```
datascience technology technology technology technology
datascience technology technology technology technology
datascience technology technology technology technology
datascience technology technology technology technology
datascience technology technology technology technology
```

In [49]:
```
# lets use while loop usig some numbers
i = 1

while i <= 2 :
    j = 0
    while  j <= 2 :
        print(i*j, end=" ")
        j += 1
```

```
    print()
    i += 1
```

```
0 1 2
0 2 4
```

In [50]:
```
# lets use while loop usig some numbers
i = 1
while i <= 4 :
    j = 0
    while  j <= 3 :
        print(i*j, end=" ")
        j += 1
    print()
    i += 1
```

```
0 1 2 3
0 2 4 6
0 3 6 9
0 4 8 12
```

In [52]:
```
# lets use while loop usig some numbers
i = 10

while i <= 4 :
    j = 1
    while  j <= 3 :
        print(i*j, end=" ")
        j += 1

    print()
    i += 1

else:

    print('condition is not match')
```

```
condition is not match
```

for loop

In [53]:
```
name = 'nit'
for i in name:
    print(i)
```

```
n
i
t
```

In [54]:
```
name1 = [1,3.5,'hello']
for i in name1:
    print(i)
```

```
1
3.5
hello
```

In [55]:
```
range(5)
```

Out[55]:
```
range(0, 5)
```

In [56]:
```
for i in range(5):
    print(i)
```

```
0
1
2
3
4
```

In [57]:
```
for i in range(10,50,5):
    print(i)
```

```
10
15
20
25
30
35
40
45
```

In [60]:
```
# print the value which is divisible by 5
for i in range(1,41):
    if i%4 == 0:
        print(i)
```

```
4
8
12
16
20
24
28
32
36
40
```

Break, Continue, Pass

In [61]:
```
for i in range(1,11):
    print(i)
```

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

In [64]:
```
for i in range(1,11):
    if i == 4:
       break
    print(i)
```

```
1
2
3
```

In [65]:
```
for i in range(1,11):
    if i == 4:
       continue
    print(i)
```

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

In [67]:
```
for i in range(1,11):
```

```
  Cell In[67], line 1
    for i in range(1,11):
                         ^
_IncompleteInputError: incomplete input
```

In [69]:
```
for i in range(1,11):
    pass
```

In [70]:
```
x = int(input('How many choclets you want:?'))
i = 1
while i <= x:
    print('choclet :',i)
    i += 1
```

```
choclet : 1
choclet : 2
choclet : 3
choclet : 4
```

In [71]:
```
ava = 5 # the machine has only 5 choclet

x = int(input('How many choclets you want:?'))

i = 1
while i<=x:
    print('choclet:', i)
    i += 1
```

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

In [74]:
```
available_choclet = 5 # the machine has only 10 candis

x = int(input('How many choclets user want:?'))

i = 1
while i<=x:

    if i>available_choclet: # we stop the execution but which code execution not en
        break # break is statement | means jump out of the loop
    print('choclet')
    i += 1

print('bye for now ')
```

```
choclet
choclet
choclet
choclet
choclet
bye for now
```

In [75]:
```
available_choclet = 5 # the machine has only 10 candis

x = int(input('How many choclets user want:?'))

i = 1
while i<=x:

    if i>available_choclet: # we stop the execution but which code execution not en
        print('out of stock')
        break # break is statement | means jump out of the loop
    print('choclet',i)
    i += 1

print('bye for now ')
```

```
choclet 1
choclet 2
choclet 3
choclet 4
choclet 5
out of stock
bye for now
```

In [79]:
```
for i in range(1,51):

    if i%3 == 0:

        print(i)
print('end')
```

```
3
6
9
12
15
18
21
24
27
30
33
36
39
42
45
48
end
```

In [84]:
```
for i in range(1,51):

    if i%3 == 0:
        continue
    print(i)
print('end')
```

```
1
2
4
5
7
8
10
11
13
14
16
17
19
20
22
23
25
26
28
29
31
32
34
35
37
38
40
41
43
44
46
47
49
50
end
```

In [85]:
```python
for i in range(1,51):

    if i%3 == 0 or i%5 == 0:

        continue
    print(i)
#print('end')
# it will skip all the value which is divisible by 3 or 5
```

```
1
2
4
7
8
11
13
14
16
17
19
22
23
26
28
29
31
32
34
37
38
41
43
44
46
47
49
```

In [86]:
```python
nums = [12,15,18,21,26,30,40]
for num in nums:
    if num % 5 == 0:
        print(num)
```

```
15
30
40
```

In [87]:
```python
nums = [12,5,15,18,21,26, 30,40]

for num in nums:
    if num % 5 == 0:
        print(num)
        #break
```

```
5
15
30
40
```

In [88]:
```python
nums = [12,5,15,18,21,26, 30,40]

for num in nums:
    if num % 5 == 0:
        print(num)
        break
```

```
5
```

In [89]:
```
nums = [12,18,21,26]

for num in nums:
    if num % 5 == 0:
        print(num)
        break
```

In [90]:
```
nums = [12,18,21,26]

for num in nums:
    if num % 5 == 0:
        print(num)
        #break

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

```
number not found
```

In [91]:
```
nums = [12,18,21,26,15]

for num in nums:
    if num % 5 == 0:
        print(num)
        break

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

```
15
```

In [ ]:
```

```