

# if-else

In Python, if-else is a conditional statement used to execute certain blocks of code based on whether a condition is True or False.

**if statement:** Checks whether a condition is True. If it is, the code inside the if block is executed.

**else statement:** If the if condition is False, the code inside the else block is executed (optional, but used to handle the case when the if condition is not met).

**elif (else if):** It's used to check multiple conditions. If the if condition is False, Python checks the conditions in elif. You can have multiple elif blocks.

```
In [1]: p = 50

if p > 75:
    print("O")
elif 60 < p <= 75:
    print("A")
elif 50 < p < 60:
    print("B")
elif 35 < p < 50:
    print("C")
else:
    print("fail")
```

fail

```
In [3]: n = 7

if n % 2 == 0 and n % 3 == 0:
    print("Divisible by 2 and 3")
elif n % 2 == 0:
    print("Divisible by 2, not 3")
elif n % 3 == 0:
    print("Divisible by 3, not 2")
else:
    print("Not divisible by 2 or 3")
```

Not divisible by 2 or 3

## Examples of if

```
In [1]: # 1) Check if a number is greater than 10:
num = 12
if num > 10:
    print("Number is greater than 10")

# 2) Check if a string is a palindrome (only a basic check for the first character)
word = "level"
if word[0] == 'l':
    print("Starts with 'l'")

# 3) Check if the temperature is above freezing (0°C):
temperature = 5
if temperature > 0:
```

```

    print("Above freezing temperature")

# 4) Check if a List is not empty:
my_list = [1, 2, 3]
if my_list:
    print("List is not empty")

# 5) Check if a number is divisible by 7:
num = 49
if num % 7 == 0:
    print("Divisible by 7")

```

Number is greater than 10  
 Starts with 'l'  
 Above freezing temperature  
 List is not empty  
 Divisible by 7

## Examples of if-else

```

In [11]: # 1) Check if a number is even or odd:
num = 7
if num % 2 == 0:
    print("Even")
else:
    print("Odd")

# 2) Check if a person is eligible to vote (age >= 18):
age = 20
if age >= 18:
    print("Eligible to vote")
else:
    print("Not eligible to vote")

# 3) Check if a number is divisible by 5:
num = 25
if num % 5 == 0:
    print("Divisible by 5")
else:
    print("Not divisible by 5")

# 4) Check if a string is empty or not:
text = "Hello"
if text:
    print("String is not empty")
else:
    print("String is empty")

# 5) Check if a student has passed or failed (marks >= 50):
marks = 45
if marks >= 50:
    print("Passed")
else:
    print("Failed")

```

Odd  
Eligible to vote  
Divisible by 5  
String is not empty  
Failed

## Examples of if-elif-else

```
In [12]: # 1) Check if a number is positive, negative, or zero:
num = 10
if num > 0:
    print("Positive")
elif num < 0:
    print("Negative")
else:
    print("Zero")

# 2) Grade classification based on marks:
marks = 75
if marks >= 90:
    print("A+")
elif marks >= 75:
    print("A")
elif marks >= 50:
    print("B")
else:
    print("Fail")

# 3) Check if a number is divisible by 2, 3, or neither:
num = 18
if num % 2 == 0 and num % 3 == 0:
    print("Divisible by both 2 and 3")
elif num % 2 == 0:
    print("Divisible by 2")
elif num % 3 == 0:
    print("Divisible by 3")
else:
    print("Not divisible by 2 or 3")

# 4) Check if a person is an adult, teenager, or child based on age:
age = 15
if age >= 18:
    print("Adult")
elif age >= 13:
    print("Teenager")
else:
    print("Child")

# 5) Determine the weather condition:
temperature = 30
if temperature > 35:
    print("Hot")
elif temperature > 20:
    print("Warm")
elif temperature > 0:
    print("Cool")
else:
    print("Cold")
```

Positive

A

Divisible by both 2 and 3

Teenager

Warm

In [ ]: