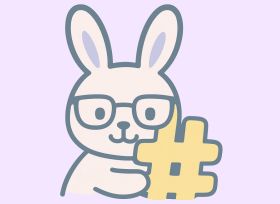
Python If Statements



Everyday “if”

We use `if` all the time:

- If it is **raining**, take an **umbrella**.
- If you are **hungry**, eat a **snack**.
- If you finish homework, you can **play games**.

Python can do this kind of thinking by using `if` statements.

Very important: Indentation

- Python cares about **spaces** at the beginning of a line.
- We call this **indentation**.

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- Python cares about **spaces** at the beginning of a line.
- We call this **indentation**.

Example:

```
age = 11

if age >= 10:
    print("You are 10 or older!")
    print("Welcome to the game!")
```

- 4 spaces are in front of `print(...)`.
- They tell Python: “These lines belong to the `if`.”

Simple `if` statement

Syntax:

```
if CONDITION:
    # do something
```

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```

Example:

```
temperature = 32

if temperature > 30:
    print("It's a hot day!")
```

Question 💯 Exam Performance

What is the output?

```
score = 100

if score > 90:
    print("Great job!")
    print("You got an A!")
```

Question 💯 Exam Performance

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```
score = 100

if score > 90:
    print("Great job!")
    print("You got an A!")
```

Output:

```
Great job!
You got an A!
```

`if-else` Two-Way Choice

Syntax:

```
if CONDITION:
    # do this when condition is True
else:
    # do this when condition is False
```

`if-else` Two-Way Choice

Syntax:

```
if CONDITION:
    # do this when condition is True
else:
    # do this when condition is False
```

Example (even or odd):

```
number = 7

if number % 2 == 0:
    print("Even number")
else:
    print("Odd number")
```

Question ⛔ Do You Pass the Exam?

What is the output?

```
score = 55

if score >= 60:
    print("You passed!")
else:
    print("Try again next time!")
```

Question ⛔ Do You Pass the Exam?

What is the output?

```
score = 55

if score >= 60:
    print("You passed!")
else:
    print("Try again next time!")
```

Output:

```
Try again next time!
```

`if-elif-else` Many Choices

Sometimes we have **more than 2** cases.

Syntax:

```
if condition1:
    ...
elif condition2:
    ...
elif condition3:
    ...
else:
    ...
```

- Python checks from **top to bottom**.
- Python stops when it finds the **first True** condition.

Question 💯 Exam Grade

What is the output?

```
score = 88

if score >= 90:
    print("Grade A")
elif score >= 80:
    print("Grade B")
elif score >= 70:
    print("Grade C")
else:
    print("Grade D or below")
```

Question 💯 Exam Grade

What is the output?

```
score = 88

if score >= 90:
    print("Grade A")
elif score >= 80:
    print("Grade B")
elif score >= 70:
    print("Grade C")
else:
    print("Grade D or below")
```

Output:

```
Grade B
```

Question 🌡️ Temperature

What is the output?

```
temperature = 15

if temperature >= 25:
    print("Wear T-shirt")
elif temperature >= 15:
    print("Wear a light jacket")
else:
    print("Wear a warm coat")
```

Question 🌡️ Temperature

What is the output?

```
temperature = 15

if temperature >= 25:
    print("Wear T-shirt")
elif temperature >= 15:
    print("Wear a light jacket")
else:
    print("Wear a warm coat")
```

Output:

```
Wear a light jacket
```

Q1 ⚙️ Even or Odd?

What is the output?

```
number = 8

if number % 2 == 0:
    print("Even")
else:
    print("Odd")
```

Q1 ⚙️ Even or Odd?

What is the output?

```
number = 8

if number % 2 == 0:
    print("Even")
else:
    print("Odd")
```

Output:

```
Even
```

Q2 ❄️ Cold or Warm?

- We want it to print `"Cold"` when `temperature` is less than 20.
- Fill in the blanks.

```
temperature = 19

if _________________:
    print("Cold")
else:
    print("Warm")
```

Output:

```

```

Q2 ❄️ Cold or Warm?

- We want it to print `"Cold"` when `temperature` is less than 20.
- Fill in the blanks.

```
temperature = 19

if temperature < 20:
    print("Cold")
else:
    print("Warm")
```

Output:

```
Cold
```

Q3 🎢 Can You Ride the Roller Coaster?

Fill in the blanks to check if a child is tall enough.

- Prints `"You can ride the roller coaster!"` if `height >= 120`.
- Prints `"Sorry, you are not tall enough."` otherwise.

```
height = 115

if ____________:
    print("_______________________________")
else:
    print("_______________________________")
```

Output:

```

```

Q3 🎢 Can You Ride the Roller Coaster?

Fill in the blanks to check if a child is tall enough.

- Prints `"You can ride the roller coaster!"` if `height >= 120`.
- Prints `"Sorry, you are not tall enough."` otherwise.

```
height = 115

if height >= 120:
    print("You can ride the roller coaster!")
else:
    print("Sorry, you are not tall enough.")
```

Output:

```
Sorry, you are not tall enough.
```

Summary

- `if` – do something only when a condition is `True`.
- `if-else` – choose between two paths.
- `if-elif-else` – choose between many paths.
- Indentation (4 spaces) is very important in Python.