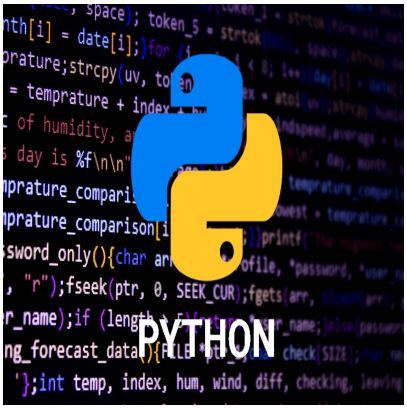

Introduction to Python

Description

Python is a programming language that is easy to read and write. In this notebook, you will learn the basics and then move on to more advanced concepts like functions, lists, and dictionaries.

---

1. The print() function

It is used to display a message on the screen.

Example:

```
print("Hello, world!")
```

Exercise 1: Write a program that prints your name.

---

2. Variables

A variable is a container that can store a value.

Example:

```
name = "Luca"
age = 13
```

Exercise 2: Create two variables, one with your name and one with your age, then print them.

---

3. Keyboard Input

With the `input()` function we can ask the user to enter data.

Example:

```
name = input("What is your name? ")
print("Hello", name)
```

Exercise 3: Ask the user for their favorite color and print it.

---

4. Mathematical Operations

Python can perform calculations:

- `+` addition
- `-` subtraction
- `*` multiplication
- `/` division
- `**` exponentiation

Example:

```
a = 5
b = 2
print(a + b)
```

Exercise 4: Ask the user for two numbers and print the sum.

---

5. Conditions (if - else)

With `if` we can decide what to do depending on a condition.

Example:

```
age = int(input("How old are you? "))
if age >= 18:
    print("You are an adult")
else:
    print("You are a minor")
```

Exercise 5: Ask for a number and print whether it is even or odd.

6. Loops (for - while)

For loop

```
for i in range(1, 6):
    print(i)
```

While loop

```
i = 1
while i <= 5:
    print(i)
    i += 1
```

Exercise 6: Print numbers from 1 to 10 using `for`.

Exercise 7: Print even numbers from 2 to 20 using `while`.

7. Comments

Comments explain the code but are not executed.

```
# This is a comment
```

Exercise 8: Rewrite one of your programs adding a comment to each line.

INTERMEDIATE LEVEL

8. Lists

A **list** is a sequence of values enclosed in square brackets.

Example:

```
fruits = ["apple", "banana", "kiwi"]
print(fruits[0])  # prints "apple"
```

Exercise 9: Create a list with 5 animals and print the second item.

---

9. Looping through a list

You can use a `for` loop to read each item in the list.

```
for fruit in fruits:
    print(fruit)
```

Exercise 10: Write a program that prints all the items in a list of sports.

---

10. Functions

A **function** is a block of code that can be reused.

Example:

```
def greet(name):
    print("Hello", name)

greet("Julia")
```

Exercise 11: Write a function that takes two numbers and prints their sum.

---

11. Dictionaries

A **dictionary** is a collection of key-value pairs.

Example:

```
student = {"name": "Anna", "age": 13}
print(student["name"])
```

Exercise 12: Create a dictionary with information about a city (name, population, country).

12. Final Challenge (optional)

Write a program that:

- Asks the user for two numbers
- Adds them and calculates the average
- Prints a different message if the average is greater or less than 10

Exercise 13: Try using `if`, `input()`, `print()` and math operations.

Category

1. Senza categoria

Tags

1. information_technology

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