PYTHON IS FOR EVERYONE

Tutorial 4:
PYTHON PROGRAMMING - CONTROL STRUCTURES IN GOOGLE COLAB

Jeff Gentry

@www.linkedin.com/in/jefferycharlesgentry

Objectives

- **Understand how to use conditional statements (if, elif, else) in Python.**
- **Learn how to create simple decision-making programs.**
- **Practice writing conditional statements.**

What are Control Structures?

Control structures are constructs that dictate the flow of control in a program. In Python, the most common control structures are conditional statements, which allow you to execute code based on certain conditions.

The "if" Statement

The if statement evaluates a condition and executes a block of code if the condition is True.
Create a new notebook as in previous tutorials.


```python
age = 18

if age >= 18:

    print("You are an adult.")
```

```
You are an adult.
```

The "else" Statement

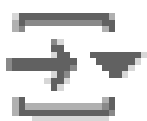The else statement can be used to execute a block of code if the condition in the if statement is False.

```python
age = 16

if age >= 18:
    print("You are an adult.")
else:
    print("You are a minor.")
```

```
You are a minor.
```

The "elif" Statement

The elif (short for "else if") statement allows you to check multiple conditions.
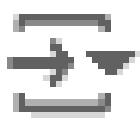
```python
age = 20

if age < 13:
    print("You are a child.")
elif age < 18:
    print("You are a teenager.")
else:
    print("You are an adult.")
```

```
You are an adult.
```

Practice Exercises

Age Checker: Write a program that asks the user for their age and prints whether they are a child (under 13), a teenager (13-17), or an adult (18 and over).

```python
age = int(input("Enter your age: "))
if age < 13:
    print("You are a child.")
elif age < 18:
    print("You are a teenager.")
else:
    print("You are an adult.")
```

```
Enter your age: 42
You are an adult.
```

Practice Exercises

Write a program that takes a score (0-100) as input and prints the corresponding grade:

- **A: 90-100**
- **B: 80-89**
- **C: 70-79**
- **D: 60-69**
- **F: Below 60**

```python
grade = int(input("Enter your grade: "))
if grade >= 90:
    print("A")
elif grade >= 80:
    print("B")
elif grade >= 70:
    print("C")
elif grade >= 60:
    print("D")
else:
    print("F")
```

```
Enter your grade: 91
A
```

Practice Exercises

Even or Odd: Write a program that checks if a number entered by the user is even or odd.

```python
number = int(input("Enter a number: "))
if number % 2 == 0:
    print("The number is even.")
else:
    print("The number is odd.")
```

```
Enter a number: 115
The number is odd.
```
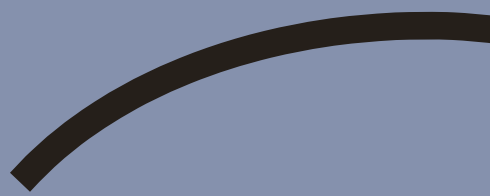
Conclusion

In this tutorial, you learned about control structures in Python, specifically conditional statements (if, elif, else). You practiced writing simple decision-making programs that execute different code blocks based on conditions.

Next Steps

In tutorial 5, we will look at loops. Specifically, the main two types of loops in Python "for" and "while". These will let us iterate over sequences for repetitive tasks.

FOLLOW ME

for more tips you didn't know you needed

Jeff Gentry

@www.linkedin.com/in/jefferycharlesgentry