Introduction to Python

Fun with Coding!

Robogen

May 12, 2025

Workshop Overview

6-Day Workshop:

- Day 1: Python Basics
- Day 2: Fun with AI
- Day 3: Prompt Engineering
- Day 4: Robotics Basics
- Day 5: ATL Challenge
- Day 6: Final Project

Tools: Google Colab

What is Python?

- Simple programming language
- Used for games, websites, AI
- Named after Monty Python

Why Learn Python?

- Easy to read and write
- Used by Google, NASA
- Great for beginners

Google Colab

How to Use:

1. Go to `colab.research.google.com`
2. Create new notebook
3. Type code in cells
4. Run with Shift+Enter

Note

Works best on Chrome/Firefox

Printing Messages

```
1    print("Hello, World!")
2    print("My name is Alice!")
```

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Activity:

- Print your name
- Print your favorite food

Variables

```
1    name = "Rahul"
2    age = 12
3    print(name, "is", age, "years old")
```

Variables

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1    name = "Rahul"
2    age = 12
3    print(name, "is", age, "years old")
```

Try:

- Store your school name
- Store your class

Basic Math

```
1    a = 10
2    b = 5
3    print(a + b)   # Addition
4    print(a * b)   # Multiplication
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Activity: Calculate area of rectangle
(area = length × width)

If-Else Statements

```python
age = 12
if age >= 13:
    print("Teen")
else:
    print("Kid")
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```

Challenge: Check if number is even or odd
Hint: Use % operator

Loops

For Loop:

```
1    for i in range(5):
2        print("Hello!")
```

While Loop:

```
1    count = 0
2    while count < 3:
3        print(count)
4        count += 1
```

Story Generator

```python
name = input("Enter name: ")
animal = input("Enter animal: ")
for i in range(3):
    print(name, "met a", animal)
```

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animal = input("Enter animal: ")
for i in range(3):
    print(name, "met a", animal)
```

Enhance:

- Add more characters
- Use if-else for different endings

Recap

Today We Learned:

- Printing messages
- Variables
- Basic math
- If-else decisions
- Loops (for/while)

Questions?

Ask anything!

Next Steps

Before Next Session:

- Try making a simple calculator
- Experiment with more loops

Next: Fun with AI - Teachable Machine!