Using AI Tools and Python to Automate Tasks

A two-day, beginner-friendly journey to streamline workflows, boost productivity, and integrate AI into everyday tasks.

Goals

1. **Understand the basics of Python scripting without prior programming experience**

Goals

1. **Understand the basics of Python scripting without prior programming experience**
2. **Explore ways to leverage LLMs in combination with Python**

Goals

1. **Understand the basics of Python scripting without prior programming experience**
2. **Explore ways to leverage LLMs in combination with Python**
3. **Learn how to automate tasks such as file organization and data entry**

Goals

1. **Understand the basics of Python scripting without prior programming experience**
2. **Explore ways to leverage LLMs in combination with Python**
3. **Learn how to automate tasks such as file organization and data entry**
4. **Use Python scripts to integrate with external LLM APIs**

Survey Question: Do you have a subscription for ChatGPT/Claude/Gemini?

Why Learn to Automate?

Automation as a General Skill

- **Automate Repetitive Tasks**

Automation as a General Skill

- **Automate Repetitive Tasks**
- **Increase Productivity**

Automation as a General Skill

- **Automate Repetitive Tasks**
- **Increase Productivity**
- **Save Money**:
  - Replace expensive subscription tools with your own scripts

Automation as a General Skill

- **Automate Repetitive Tasks**
- **Increase Productivity**
- **Save Money**:
  - Replace expensive subscription tools with your own scripts
- **Analyse Massive Amounts of Data**

The Real Reason....

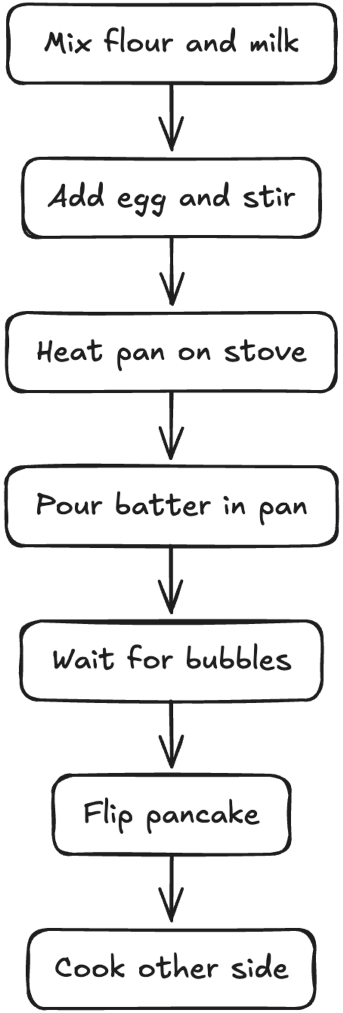
Writing code = the most general skill you can have!

It is a superpower! :)

Scripting vs. Programming

An important distinction!

Both are About Following Recipes



Mix flour and milk

Add egg and stir

Heat pan on stove

Pour batter in pan

Wait for bubbles

Flip pancake

Cook other side

Scripting

- Writing code to full fill a set of pre-defined steps that accomplish a task

Scripting

- Writing code to full fill a set of pre-defined steps that accomplish a task
- Quick, targeted, and task-oriented

Scripting

- Writing code to full fill a set of pre-defined steps that accomplish a task
- Quick, targeted, and task-oriented
- Typically used for automations, data manipulation, or utility tasks

Scripting

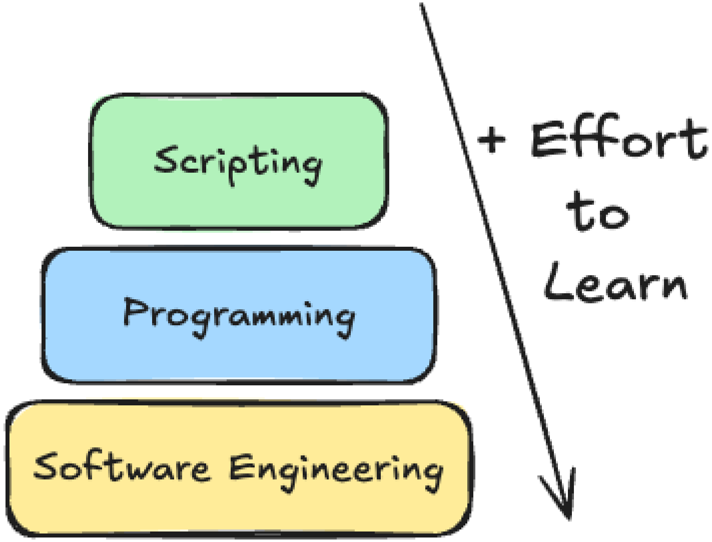
- Writing code to full fill a set of pre-defined steps that accomplish a task
- Quick, targeted, and task-oriented
- Typically used for automations, data manipulation, or utility tasks
- Toy example -> Renaming multiple files

```python
# Rename all .txt files in a directory to include today's date
import os
from datetime import date

today = date.today().strftime("%Y-%m-%d")

for filename in os.listdir("."):
    if filename.endswith(".txt"):
        new_name = f"{today}_{filename}"
        os.rename(filename, new_name)
```

Vibe Scripting?



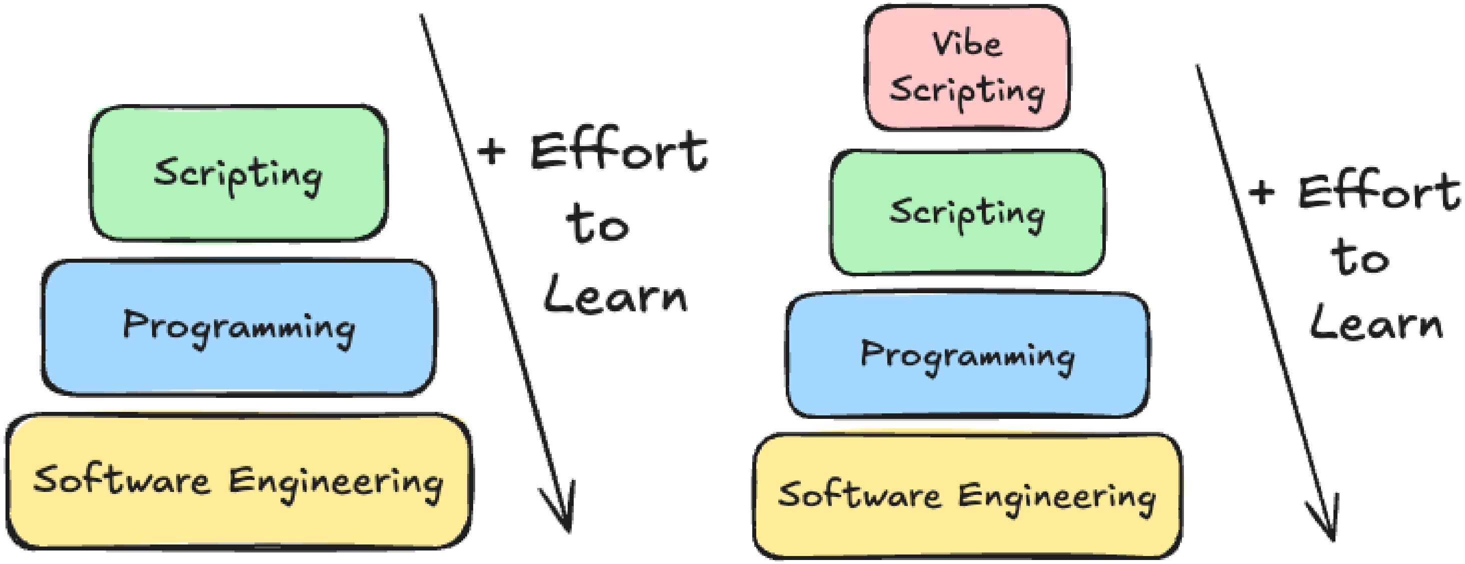
Scripting

Programming

Software Engineering

+ Effort to Learn

Vibe Scripting?



Why focus on scripting/vibe scripting?

Why focus on scripting/vibe scripting?

- Much faster learning curve - *if it works don't change it*

Why focus on scripting/vibe scripting?

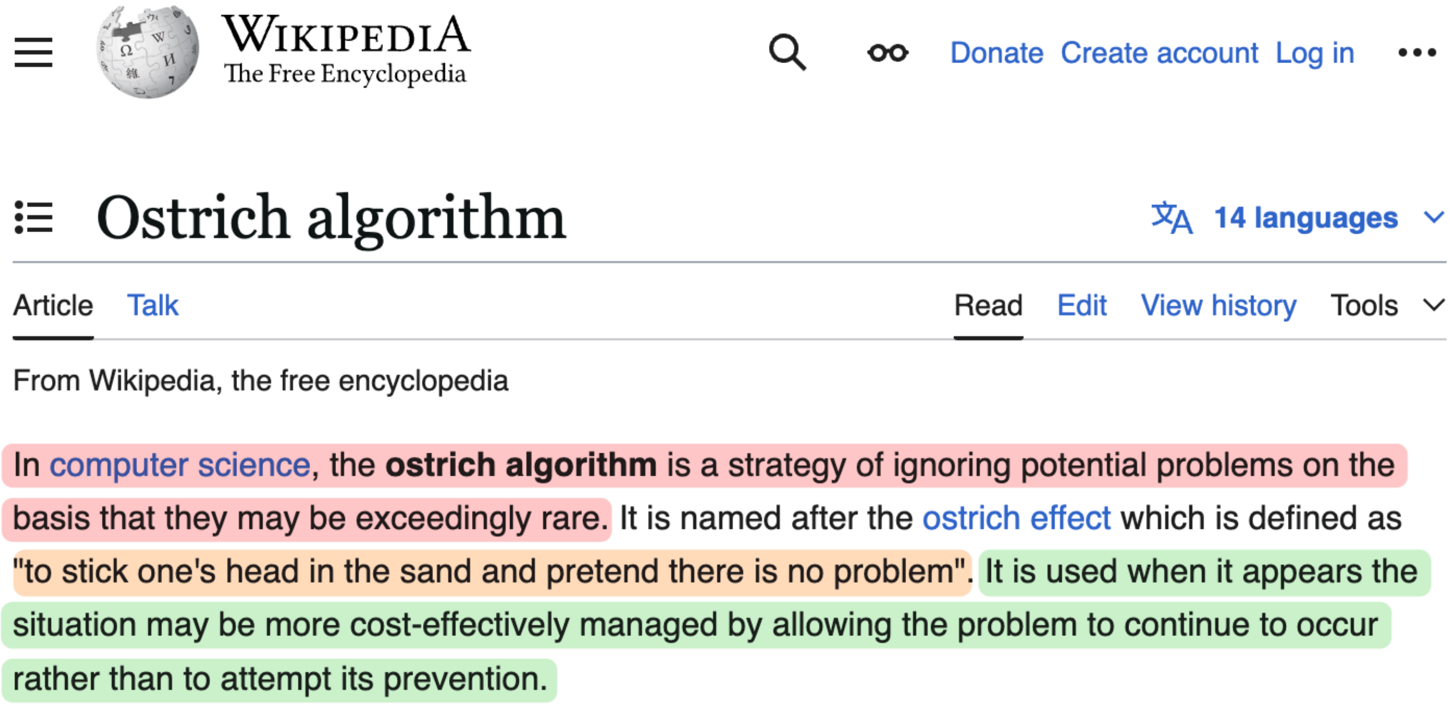
- Much faster learning curve - *if it works don't change it*
- Immediate practical benefits - *makes your life better*

Why focus on scripting/vibe scripting?

- Much faster learning curve - *if it works don't change it*
- Immediate practical benefits - *makes your life better*
- Ideal for nondevelopers who just want to get things done

Why focus on scripting/vibe scripting?

- Much faster learning curve - *if it works don't change it*
- Immediate practical benefits - *makes your life better*
- Ideal for nondevelopers who just want to get things done
- I call it "The Ostrich Approach to Learning Python"



Ostrich algorithm

From Wikipedia, the free encyclopedia

In computer science, the **ostrich algorithm** is a strategy of ignoring potential problems on the basis that they may be exceedingly rare. It is named after the ostrich effect which is defined as "to stick one's head in the sand and pretend there is no problem". It is used when it appears the situation may be more cost-effectively managed by allowing the problem to continue to occur rather than to attempt its prevention.

It's about Learning What We Need for Our Tasks!

It's about Learning What We Need for Our Tasks!

And purposefuly ignoring that which does not seem to have any effect on its success.

Learning Python with AI

Your Personal Programming Tutor

The Conversational Learning Approach

- **Start with "I don't know Python, but I want to..."** and describe your goal

The Conversational Learning Approach

- **Start with "I don't know Python, but I want to..."** and describe your goal
- **Ask for explanations**: "What does this line do?" or "Why do we use a for loop here?"

The Conversational Learning Approach

- **Start with "I don't know Python, but I want to..."** and describe your goal
- **Ask for explanations**: "What does this line do?" or "Why do we use a for loop here?"
- **Request variations**: "Show me 3 different ways to do this" or "Make this simpler"

The Conversational Learning Approach

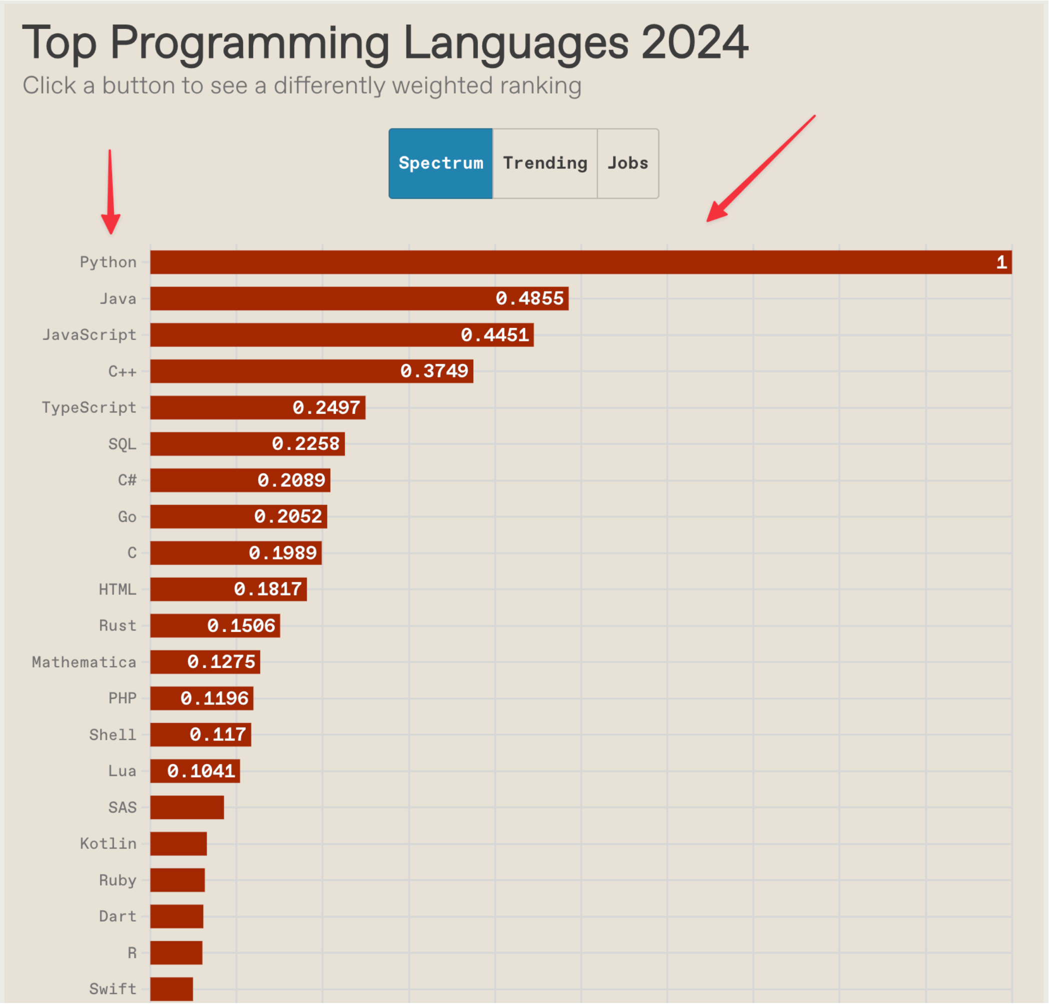
- **Start with "I don't know Python, but I want to..."** and describe your goal
- **Ask for explanations**: "What does this line do?" or "Why do we use a for loop here?"
- **Request variations**: "Show me 3 different ways to do this" or "Make this simpler"
- **Build incrementally**: Start with tiny scripts, then ask "How do I add X to this?"

The Conversational Learning Approach

- **Start with "I don't know Python, but I want to..."** and describe your goal
- **Ask for explanations**: "What does this line do?" or "Why do we use a for loop here?"
- **Request variations**: "Show me 3 different ways to do this" or "Make this simpler"
- **Build incrementally**: Start with tiny scripts, then ask "How do I add X to this?"
- **Example conversation starter**:

Why Python?

Python is Easy and Everywhere



Top Programming Languages 2024

Click a button to see a differently weighted ranking

Python is Easy and Everywhere

- Python is a general purpose language (can be used for everything)

Python is Easy and Everywhere

- Python is a general purpose language (can be used for everything)
- Python is used across the board in AI from developing AI models to powering self-driving cars

Python is Easy and Everywhere

- Python is a general purpose language (can be used for everything)
- Python is used across the board in AI from developing AI models to powering self-driving cars
- Python is super easy to learn due to its proximity with natural language

The Busy Person Guide to Python Basics

Python Things We Will Learn

- **Basic Syntax**: Indentation, variable assignments, printing

Python Things We Will Learn

- **Basic Syntax**: Indentation, variable assignments, printing
- **Common Data Types**: Strings, integers, floats, booleans

Python Things We Will Learn

- **Basic Syntax**: Indentation, variable assignments, printing
- **Common Data Types**: Strings, integers, floats, booleans
- **Control Structures**: `if` statements, loops (`for`, `while`)

Python Things We Will Learn

- **Basic Syntax**: Indentation, variable assignments, printing
- **Common Data Types**: Strings, integers, floats, booleans
- **Control Structures**: `if` statements, loops (`for`, `while`)
- **Useful Libraries**: `os` for file operations, `csv` for handling CSVs, `requests` for making web requests

Python Things We Will Learn

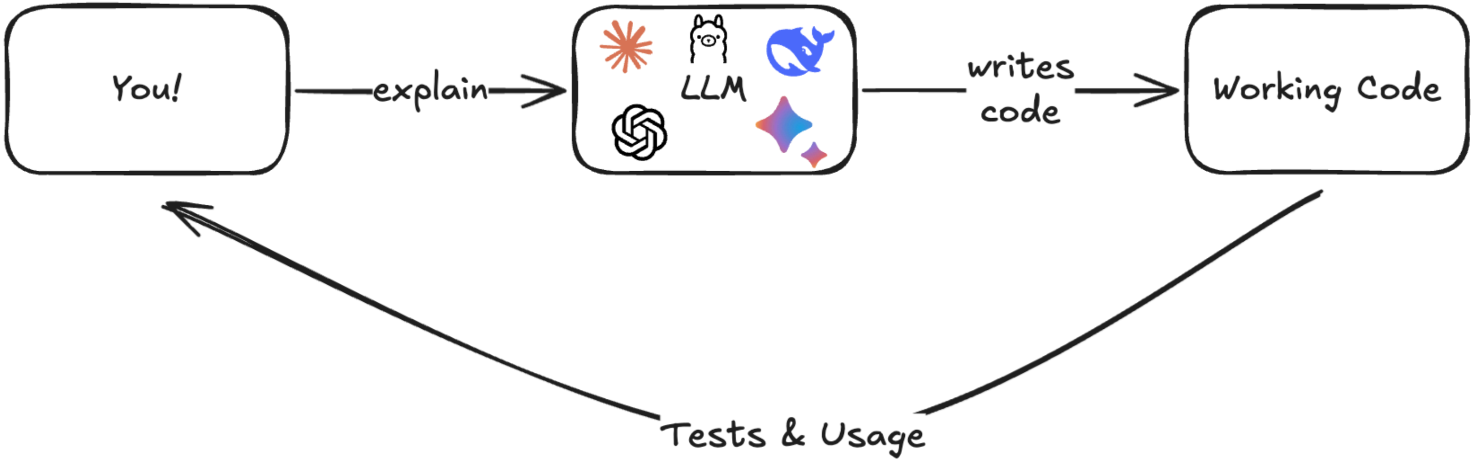
- **Basic Syntax**: Indentation, variable assignments, printing
- **Common Data Types**: Strings, integers, floats, booleans
- **Control Structures**: `if` statements, loops (`for`, `while`)
- **Useful Libraries**: `os` for file operations, `csv` for handling CSVs, `requests` for making web requests
- That is a lot! How can we manage?

Python Things We Will Learn

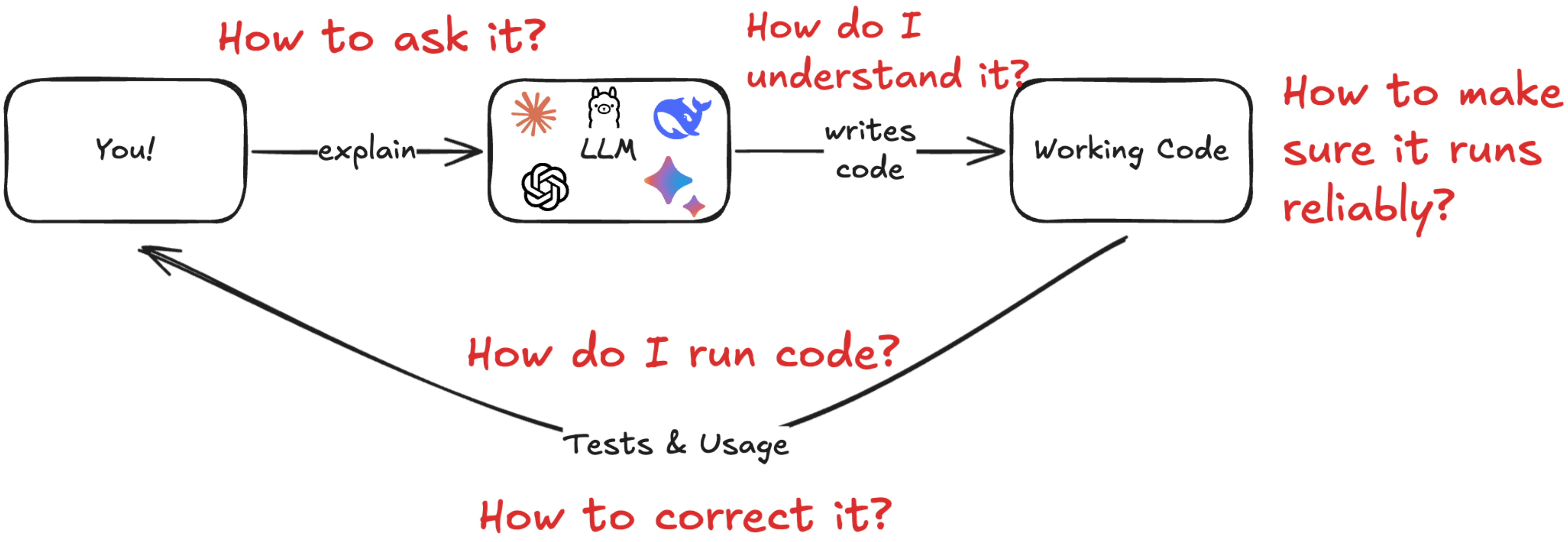
- **Basic Syntax**: Indentation, variable assignments, printing
- **Common Data Types**: Strings, integers, floats, booleans
- **Control Structures**: `if` statements, loops (`for`, `while`)
- **Useful Libraries**: `os` for file operations, `csv` for handling CSVs, `requests` for making web requests
- That is a lot! How can we manage?
- Use AI conversationally! Asking questions and clarifying what you don't know!

The "Just Ask AI" Naive Approach

The "Just Ask AI" Naive Approach



The "Just Ask AI" Naive Approach



Demo - Setting Up Your Environment

(Installing Python, uv, Editor, Jupyter Notebook, AI chatbot)

Data Types, Operations, Variables

- Writing code is about writing text that changes or manipulates data in some way

Data Types, Operations, Variables

- Writing code is about writing text that changes or manipulates data in some way

- For that we need? ..... (drumbroll) 🥁

- **Data!** Specifically a way to describe it, reference it, talk about it etc...

Data Types, Operations, Variables

- Writing code is about writing text that changes or manipulates data in some way
- For that we need? ….. (drumbroll) 🥁
- **Data!** Specifically a way to describe it, reference it, talk about it etc…
- In Python data can be of different **types** (like numbers, text, image etc…)

Data Types, Operations, Variables

- Writing code is about writing text that changes or manipulates data in some way

- For that we need? ….. (drumbroll) 🥁

- **Data!** Specifically a way to describe it, reference it, talk about it etc…
- In Python data can be of different **types** (like numbers, text, image etc…)
- The things we can do to it are called **operations** (like 5+5)

Data Types, Operations, Variables

- Writing code is about writing text that changes or manipulates data in some way
- For that we need? ….. (drumbroll) 🥁
- **Data!** Specifically a way to describe it, reference it, talk about it etc…
- In Python data can be of different **types** (like numbers, text, image etc…)
- The things we can do to it are called **operations** (like 5+5)
- To organize things, we use **variables** to define what each thing is

Data Types, Operations, Variables - Example

- Here is a piece of code that defines a variable of some type and performs a simple operation on the data stored in the variable

```
# This is data of type string!
name = "Lucas"

# This is data of type integer!
actual_age = 33

# This is data of type integer!
mental_age = 12

# our operation
average_age_between_actual_and_mental = (actual_age + mental_age) / 2

# special function that displays what goes inside of it
print(average_age_between_actual_and_mental)

# this would be a float!
# Output: 22.5
```

Data Types; Operations; Variables - Demo

Data Types, Operations, Variables

- **Core Data Types**:

Data Types, Operations, Variables

- **Core Data Types**:
    - **int**: whole nubmers like 1, 2, 3 …

Data Types, Operations, Variables

- **Core Data Types**:
  - **int**: whole nubmers like 1, 2, 3 …
  - **float**: decimal numbers like 1.1, 1.0, etc…

Data Types, Operations, Variables

- **Core Data Types**:
    - **int**: whole nubmers like 1, 2, 3 …
    - **float**: decimal numbers like 1.1, 1.0, etc…
    - **string**: text like `'Hello'`

Data Types, Operations, Variables

- **Core Data Types**:
  - **int**: whole nubmers like 1, 2, 3 …
  - **float**: decimal numbers like 1.1, 1.0, etc…
  - **string**: text like `'Hello'`
  - **bool**: logical booleans like True or False

Data Types, Operations, Variables

- **Core Data Types**:
  - **int**: whole nubmers like 1, 2, 3 …
  - **float**: decimal numbers like 1.1, 1.0, etc…
  - **string**: text like `'Hello'`
  - **bool**: logical booleans like True or False
- **Operations**:

Data Types, Operations, Variables

- **Core Data Types**:
    - **int**: whole nubmers like 1, 2, 3 …
    - **float**: decimal numbers like 1.1, 1.0, etc…
    - **string**: text like `'Hello'`
    - **bool**: logical booleans like True or False
- **Operations**:
    - **Arithmetic** (+,-,,/,*,//,%)

Data Types, Operations, Variables

- **Core Data Types**:
  - **int**: whole nubmers like 1, 2, 3 …
  - **float**: decimal numbers like 1.1, 1.0, etc…
  - **string**: text like `'Hello'`
  - **bool**: logical booleans like True or False
- **Operations**:
  - **Arithmetic** (+,-,,/,*,//,%)
  - **String concatenation** (`'Lucas' + ' is' + ' wonderful' = 'Lucas is wonderful'`)

Data Types, Operations, Variables

- **Core Data Types**:
  - **int**: whole nubmers like 1, 2, 3 …
  - **float**: decimal numbers like 1.1, 1.0, etc…
  - **string**: text like `'Hello'`
  - **bool**: logical booleans like True or False
- **Operations**:
  - **Arithmetic** (+,-,,/, *,//,%)
  - **String concatenation** (`'Lucas' + ' is' + ' wonderful' = 'Lucas is wonderful'`)
  - **Logical operations** (`and`, `or`, `not`)

Data Types, Operations, Variables

- **Core Data Types**:
    - **int**: whole nubmers like 1, 2, 3 …
    - **float**: decimal numbers like 1.1, 1.0, etc…
    - **string**: text like `'Hello'`
    - **bool**: logical booleans like True or False
- **Operations**:
    - **Arithmetic** (+,-,,/,*,//,%)
    - **String concatenation** (`'Lucas' + ' is' + ' wonderful' = 'Lucas is wonderful'`)
    - **Logical operations** (`and`, `or`, `not`)
    - **Comparison operations** (>, <, >=, <=, ==, `!=`)

- **Variables**: Storing data for reuse, assigning and reassigning values:

  ```
  a = 10
  b = 20
  print(a + b)
  # Output: 30
  ```

Demo: Functions, Lists & Loops

Functions

Functions

- Functions are a way to group code that performs a specific task

Functions

- Functions are a way to group code that performs a specific task
- Functions can take parameters and return values

Functions

- Functions are a way to group code that performs a specific task
- Functions can take parameters and return values
- For example, a function that calculates the total cost of an item including tax

Functions

- Functions are a way to group code that performs a specific task
- Functions can take parameters and return values
- For example, a function that calculates the total cost of an item including tax
- We could do this by simply writing a script:

Functions

- Functions are a way to group code that performs a specific task
- Functions can take parameters and return values
- For example, a function that calculates the total cost of an item including tax
- We could do this by simply writing a script:

```
# Arithmetic operation: multiplication of parameters
tax = price * tax_rate
# Arithmetic operation: addition of variables
total = price + tax
```

- But what if I want to re-use this code for different prices and tax rates?

Functions

- Here is what it would look like if we define a function to do this:

```python
def calculate_total(price, tax_rate):
    tax = price * tax_rate
    total = price + tax
    return total
```

Functions

- Here is what it would look like if we define a function to do this:

```python
def calculate_total(price, tax_rate):
    tax = price * tax_rate
    total = price + tax
    return total
```

- Now we can re-use the function for different prices and tax rates:

```python
shirt_price = 10
shirt_tax_rate = 0.05
pants_price = 20
pants_tax_rate = 0.1

print(calculate_total(shirt_price, shirt_tax_rate))
# Output: 10.5
print(calculate_total(pants_price, pants_tax_rate))
# Output: 22.0
```

Functions

- **Why Functions?**: Reuse code and break tasks into smaller chunks

Functions

- **Why Functions?**: Reuse code and break tasks into smaller chunks
- **Defining a Function**: `def function_name(parameters):`

Functions

- **Why Functions?**: Reuse code and break tasks into smaller chunks
- **Defining a Function**: `def function_name(parameters):`
- **Return Values**: Make your functions flexible and reusable

Functions

- **Why Functions?**: Reuse code and break tasks into smaller chunks
- **Defining a Function**: `def function_name(parameters):`
- **Return Values**: Make your functions flexible and reusable
- **Best Practices**: Keep them short, descriptive, and single-purpose

Lists & Loops

- **Lists**: Python’s go-to data structure for ordered collections

Lists & Loops

- **Lists**: Python’s go-to data structure for ordered collections

```
# Define a list of tasks
tasks = ["Buy groceries", "Finish project", "Call the bank"]
```

- **Access Elements**: Indexing and slicing

Lists & Loops

- **Lists**: Python’s go-to data structure for ordered collections

```python
# Define a list of tasks
tasks = ["Buy groceries", "Finish project", "Call the bank"]
```

- **Access Elements**: Indexing and slicing

```python
print(tasks[0])
# Output: Buy groceries

print(tasks[1])
# Output: Finish project
```

Lists & Loops

- **Lists**: Python’s go-to data structure for ordered collections

```
# Define a list of tasks
tasks = ["Buy groceries", "Finish project", "Call the bank"]
```

- **Access Elements**: Indexing and slicing

```
print(tasks[0])
# Output: Buy groceries

print(tasks[1])
# Output: Finish project
```

- **Slice**: Get a range of elements

Lists & Loops

- **Lists**: Python’s go-to data structure for ordered collections

```
# Define a list of tasks
tasks = ["Buy groceries", "Finish project", "Call the bank"]
```

- **Access Elements**: Indexing and slicing

```
print(tasks[0])
# Output: Buy groceries

print(tasks[1])
# Output: Finish project
```

- **Slice**: Get a range of elements

```
print(tasks[0:2])
# Output: ['Buy groceries', 'Finish project']
```

Lists & Loops

- **Loops**: `for` loops to iterate over items

Lists & Loops

- **Loops**: `for` loops to iterate over items

```python
tasks = ["Buy groceries", "Finish project", "Call the bank"]

for task in tasks:
    print(task)
```

Lists & Loops

- **Loops**: `for` loops to iterate over items

```
tasks = ["Buy groceries", "Finish project", "Call the bank"]

for task in tasks:
    print(task)
```

- **Processing List Elements**: With `for` loops we can perform the same operation on each element of the list

Lists & Loops

- **Loops**: `for` loops to iterate over items

```python
tasks = ["Buy groceries", "Finish project", "Call the bank"]

for task in tasks:
    print(task)
```

- **Processing List Elements**: With `for` loops we can perform the same operation on each element of the list

```python
# Below we use an imaginary function that asks a robot to do a task
for task in tasks:
    ask_robot_to_do(task)
```

Lists & Loops

- **Loops**: `for` loops to iterate over items

```
tasks = ["Buy groceries", "Finish project", "Call the bank"]

for task in tasks:
    print(task)
```

- **Processing List Elements**: With `for` loops we can perform the same operation on each element of the list

```
# Below we use an imaginary function that asks a robot to do a task
for task in tasks:
    ask_robot_to_do(task)
```

Common Uses: Batch renaming files in a directory, processing data from tables, etc…

Demo - Dictionaries, Tabular Data, Conditionals

Dictionaries & Tabular Data

- **Dictionaries**: Key-value pairs for storing related data

Dictionaries & Tabular Data

- **Dictionaries**: Key-value pairs for storing related data

```
# Dictionary of product prices
prices = {
    "apple": 0.50,
    "banana": 0.75,
    "orange": 0.60
}
```

Dictionaries & Tabular Data

- **Dictionaries**: Key-value pairs for storing related data

```
# Dictionary of product prices
prices = {
    "apple": 0.50,
    "banana": 0.75,
    "orange": 0.60
}
```

- **Accessing Values**: Use keys to lookup values quickly

Dictionaries & Tabular Data

- **Dictionaries**: Key-value pairs for storing related data

```
# Dictionary of product prices
prices = {
    "apple": 0.50,
    "banana": 0.75,
    "orange": 0.60
}
```

- **Accessing Values**: Use keys to lookup values quickly

```
print(prices["apple"])
# Output: 0.50

print(prices["banana"])
# Output: 0.75
```

Dictionaries & Tabular Data

- **Dictionaries**: Key-value pairs for storing related data

```
# Dictionary of product prices
prices = {
    "apple": 0.50,
    "banana": 0.75,
    "orange": 0.60
}
```

- **Accessing Values**: Use keys to lookup values quickly

```
print(prices["apple"])
# Output: 0.50

print(prices["banana"])
# Output: 0.75
```

- **Common Uses**: Storing configurations, mapping relationships, caching data

Comparators & Conditionals

- **Boolean Comparisons**: `==`, `!=`, `>`, `<`, `>=`, `<=`

Comparators & Conditionals

- **Boolean Comparisons**: ==, !=, >, <, >=, <=

```
# Example of a boolean comparison
a = 10
b = 20
print(a == b)  # Output: False
print(a != b)  # Output: True
print(a > b)   # Output: False
print(a < b)   # Output: True
print(a >= b) # Output: False
print(a <= b) # Output: True
```

Comparators & Conditionals

- **Boolean Comparisons**: ==, !=, >, <, >=, <=

```
# Example of a boolean comparison
a = 10
b = 20
print(a == b)  # Output: False
print(a != b)  # Output: True
print(a > b)   # Output: False
print(a < b)   # Output: True
print(a >= b) # Output: False
print(a <= b) # Output: True
```

- **Logical Operators**: `and`, `or`, `not`

Comparators & Conditionals

- **Boolean Comparisons**: ==, !=, >, <, >=, <=

```
# Example of a boolean comparison
a = 10
b = 20
print(a == b)  # Output: False
print(a != b)  # Output: True
print(a > b)   # Output: False
print(a < b)   # Output: True
print(a >= b) # Output: False
print(a <= b) # Output: True
```

- **Logical Operators**: `and`, `or`, `not`

```
# Example of a logical operator
print(True and False)  # Output: False
print(True or False)   # Output: True
print(not True)         # Output: False
```

Comparators & Conditionals

- **Conditionals**: Using conditionals `if/elif/else` to perform different actions based on data

Comparators & Conditionals

- **Conditionals**: Using conditionals `if/elif/else` to perform different actions based on data

```python
# Example of an if statement
if a > b:
    print("a is greater than b")
```

Comparators & Conditionals

- **Conditionals**: Using conditionals `if/elif/else` to perform different actions based on data

```python
# Example of an if statement
if a > b:
    print("a is greater than b")
```

```python
# Example of an if/else statement
if a > b:
    print("a is greater than b")
else:
    print("a is less than or equal to b")
```

Comparators & Conditionals

- **Conditionals**: Using conditionals `if/elif/else` to perform different actions based on data

```
# Example of an if statement
if a > b:
    print("a is greater than b")
```

```
# Example of an if/else statement
if a > b:
    print("a is greater than b")
else:
    print("a is less than or equal to b")
```

```
# Example of an if/elif/else statement
if a > b:
    print("a is greater than b")
elif a == b:
    print("a is equal to b")
else:
    print("a is less than b")
```

Demo - Working with Data, APIs & Packages

Reading/Writing

- **Tabular Data**: Data that is organized in a table format

Reading/Writing

- **Tabular Data**: Data that is organized in a table format
- **Common Formats**: `.csv`, `.json`, `.xlsx`, `.xls`

Reading/Writing

- **Tabular Data**: Data that is organized in a table format
- **Common Formats**: `.csv`, `.json`, `.xlsx`, `.xls`
- CSV Files store data in rows and columns via comma-separated values:

```
Name,Age,City
John Smith,32,New York
Jane Doe,28,San Francisco
```

Name	Age	City
John Smith	32	New York
Jane Doe	28	San Francisco

APIs, Packages, and AI as an API

- **APIs 101**: Application Programming Interface—send a request, get a response

APIs, Packages, and AI as an API

- **APIs 101**: Application Programming Interface—send a request, get a response
- **Python Packages**: Example: `requests` library to make HTTP calls

APIs, Packages, and AI as an API

- **APIs 101**: Application Programming Interface—send a request, get a response
- **Python Packages**: Example: `requests` library to make HTTP calls
- **AI as an API**: Connect to services like OpenAI or Claude for text generation, content analysis, and more

Demo - Vibe Scripting with UV + AI

How to Use AI to Learn/Use Python

A quick detour to set up an AI toolkit to speed up our Automation skills

A.R.U.F.S Framework

A.R.U.F.S Framework

Ask,**R**un,**U**nderstand,**F**ix,Be **S**afe

A.R.U.F.S Framework

Ask,**R**un,**U**nderstand,**F**ix,Be **S**afe

- **A**sk → how to ask effectively, give the right context

A.R.U.F.S Framework

Ask,**R**un,**U**nderstand,**F**ix,Be **S**afe

- **A**sk → how to ask effectively, give the right context
- **R**un → how to run the code AI gives you

A.R.U.F.S Framework

Ask,**R**un,**U**nderstand,**F**ix,Be **S**afe

- **A**sk → how to ask effectively, give the right context
- **R**un → how to run the code AI gives you
- **U**nderstand → how to understand it/learn from it

A.R.U.F.S Framework

Ask,**R**un,**U**nderstand,**F**ix,Be **S**afe

- **A**sk → how to ask effectively, give the right context
- **R**un → how to run the code AI gives you
- **U**nderstand → how to understand it/learn from it
- **F**ix → how to fix it

A.R.U.F.S Framework

Ask,**R**un,**U**nderstand,**F**ix,Be **S**afe

- **A**sk → how to ask effectively, give the right context
- **R**un → how to run the code AI gives you
- **U**nderstand → how to understand it/learn from it
- **F**ix → how to fix it
- Be **S**afe → pittfalls & security risks

Ask

- Be **detailed**

Ask

- Be **detailed**
- Use **context** (docs, articles, pdfs, …)

Ask

- Be **detailed**
- Use **context** (docs, articles, pdfs, …)
- **Tools** to help with feeding data/repo into LLMs
    - https://github.com/yamadashy/repomix
    - gitingest
    - r.jina.ai
    - arxiv-txt.org
    - llms-txt
    - files-to-prompt
- Use **meta-prompts**:

```
I have this problem:
{describe the problem}
Help me write a good prompt that encapsulates this into a single Python script.
```

Ask

- For tough problems use **reasoning models**
    - Claude + Extended Thinking
    - O-series models from OpenAI
    - Gemini 2.5 Pro
    - DeepSeek R1

Run/Understand/Fix

- The pattern is:

Run/Understand/Fix

- The pattern is:
  - LLM generates the script
  - You run the script
  - You inspect the output
  - You ask the LLM to fix the script (if needed)

Run/Understand/Fix

- The pattern is:
  - LLM generates the script
  - You run the script
  - You inspect the output
  - You ask the LLM to fix the script (if needed)
- Ask for **comments on the code**

Run/Understand/Fix

- The pattern is:
  - LLM generates the script
  - You run the script
  - You inspect the output
  - You ask the LLM to fix the script (if needed)
- Ask for **comments on the code**
- **Feed the output of the terminal** to the AI and ask to fix it

Be Safe

- **Never hardcode credentials** - use environment variables or config files

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does
- **Test in isolated environments** first (separate folders, test data)

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does
- **Test in isolated environments** first (separate folders, test data)
- **Don't share sensitive data** with AI models (personal info, API keys, proprietary data)

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does
- **Test in isolated environments** first (separate folders, test data)
- **Don't share sensitive data** with AI models (personal info, API keys, proprietary data)
- **Backup important files** before running automation scripts

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does
- **Test in isolated environments** first (separate folders, test data)
- **Don't share sensitive data** with AI models (personal info, API keys, proprietary data)
- **Backup important files** before running automation scripts
- **Check file paths** - ensure scripts won't delete important files

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does
- **Test in isolated environments** first (separate folders, test data)
- **Don't share sensitive data** with AI models (personal info, API keys, proprietary data)
- **Backup important files** before running automation scripts
- **Check file paths** - ensure scripts won't delete important files
- **Add safeguards** for loops (break conditions, iteration limits)

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does
- **Test in isolated environments** first (separate folders, test data)
- **Don't share sensitive data** with AI models (personal info, API keys, proprietary data)
- **Backup important files** before running automation scripts
- **Check file paths** - ensure scripts won't delete important files
- **Add safeguards** for loops (break conditions, iteration limits)
- **Respect rate limits** and website terms of service when scraping

Be Safe

- **Never hardcode credentials** - use environment variables or config files
- **Review AI-generated code** before running - understand what each line does
- **Test in isolated environments** first (separate folders, test data)
- **Don't share sensitive data** with AI models (personal info, API keys, proprietary data)
- **Backup important files** before running automation scripts
- **Check file paths** - ensure scripts won't delete important files
- **Add safeguards** for loops (break conditions, iteration limits)
- **Respect rate limits** and website terms of service when scraping
- **Quick Safety Checklist**: Read code → Test with dummy data → Have backups → Use version control

Demo - Implementing the A.R.U.F.S Framework

Demo - Automating Data Extraction

Automating Data Extraction

- **Target Websites or Documents**: Identify patterns or structures (tables, IDs, HTML tags)

Automating Data Extraction

- **Target Websites or Documents**: Identify patterns or structures (tables, IDs, HTML tags)
- **Techniques**: Using Beautiful Soup, Pandas, or request-response cycles

Automating Data Extraction

- **Target Websites or Documents**: Identify patterns or structures (tables, IDs, HTML tags)
- **Techniques**: Using Beautiful Soup, Pandas, or request-response cycles
- **Practical Examples**: Extracting data from a CSV, scraping a simple webpage for product listings

Automating Basic Data Analysis

- **Data Loading**: Reading CSV files, Excel sheets, or database tables with Pandas

Automating Basic Data Analysis

- **Data Loading**: Reading CSV files, Excel sheets, or database tables with Pandas
- **Basic Analysis**: Calculating averages, sums, or finding patterns in data

Automating Basic Data Analysis

- **Data Loading**: Reading CSV files, Excel sheets, or database tables with Pandas
- **Basic Analysis**: Calculating averages, sums, or finding patterns in data
- **Visualization**: Creating simple charts or graphs to represent findings

Automating Slides

- Effective data wrangling for high quality slides

Automating Slides

- Effective data wrangling for high quality slides
- A Hybrid Approach: AI + Python Scripts

Automating Slides

- Effective data wrangling for high quality slides
- A Hybrid Approach: AI + Python Scripts
- Bulk Processing to save time

Automating the Browser

- **Tools**: `selenium`, `playwright`

Automating the Browser

- **Tools**: `selenium`, `playwright`
- **Common Tasks**: Logging in to websites, navigating pages, clicking buttons, scraping dynamic elements

Automating the Browser

- **Tools**: `selenium`, `playwright`
- **Common Tasks**: Logging in to websites, navigating pages, clicking buttons, scraping dynamic elements
- **Why Automate Browser Tasks?**: Speed up online research, data entry, or repetitive website interactions

Automating Filling Out Forms

- **Form Fields**: Identifying input boxes, radio buttons, checkboxes in HTML

Automating Filling Out Forms

- **Form Fields**: Identifying input boxes, radio buttons, checkboxes in HTML
- **Scripts**: Using `selenium` to locate elements by ID/class/xpath and input data

Automating Filling Out Forms

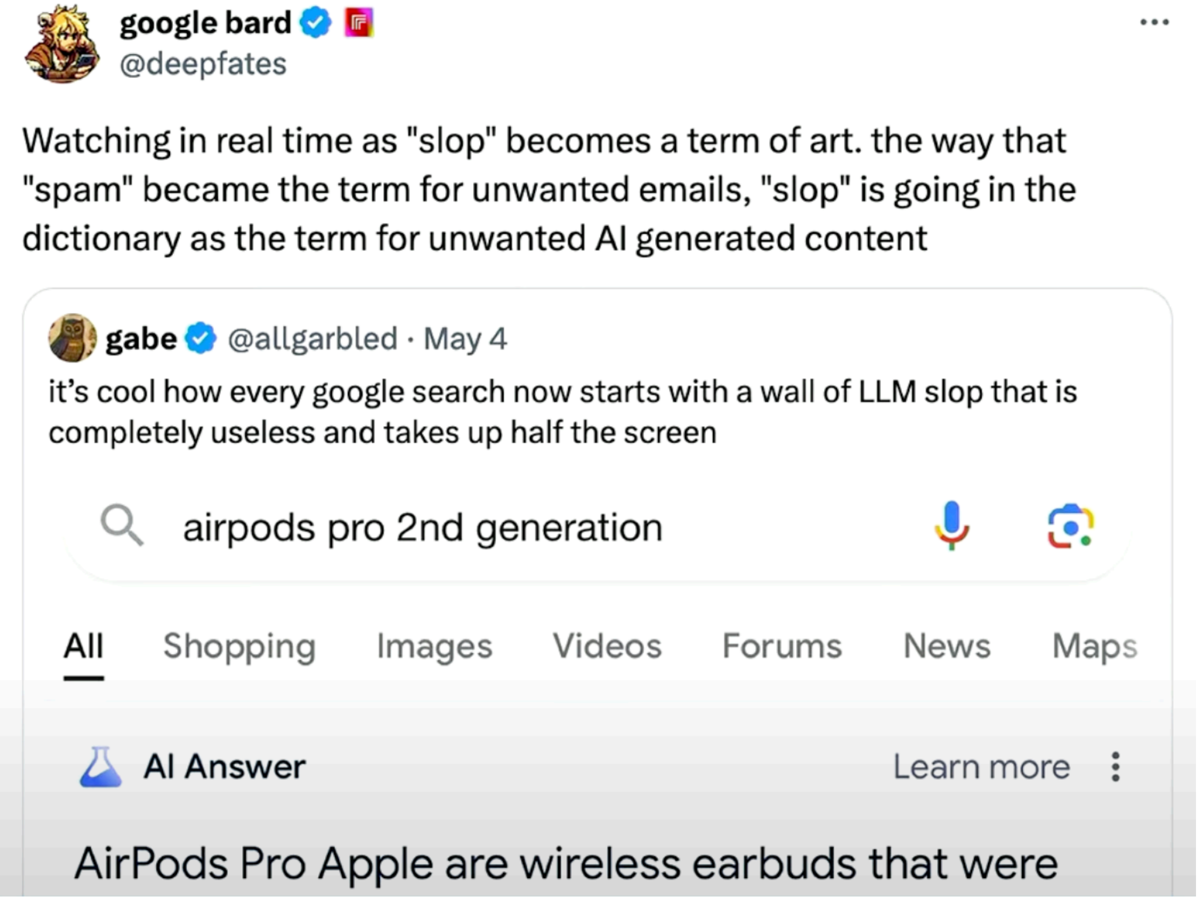
- **Form Fields**: Identifying input boxes, radio buttons, checkboxes in HTML
- **Scripts**: Using `selenium` to locate elements by ID/class/xpath and input data
- **Real-World Use**: Automating repetitive website sign-up processes, survey completion, or internal data-entry forms

Demo - Prompts, Tips & Tricks

Using AI != Slop

Using AI != Slop

Slop is using unreviewed output (like code) from AI models



google bard @deepfates

Watching in real time as "slop" becomes a term of art. the way that "spam" became the term for unwanted emails, "slop" is going in the dictionary as the term for unwanted AI generated content

gabe @allgarbled · May 4

it's cool how every google search now starts with a wall of LLM slop that is completely useless and takes up half the screen

AirPods Pro Apple are wireless earbuds that were

Using AI != Slop

1. Working with AI involves having a system for effectively reviewing high quality outputs

Using AI != Slop

1. Working with AI involves having a system for effectively reviewing high quality outputs

2. Means having good systems for generating good outputs on the first place

Using AI != Slop

1. Working with AI involves having a system for effectively reviewing high quality outputs
2. Means having good systems for generating good outputs on the first place
3. Then learning to put in place a procedure for effective review and feedback on top of the outputs you get