

# AI Python for Beginners

## Module 3: Working with Your Own Data and Documents in Python



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# AI Python for Beginners

## Lesson 1: Using Files in Python



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# Loading .txt files and reading their contents

Opens the .txt file in reading mode ("r") and assigns it to the variable `f`

```
f = open("email.txt", "r")
```

Reads the all of the text inside the file in `f` and stores it in a string variable `email`

```
email = f.read()
```

Closes the file stored in `f`

```
f.close()
```

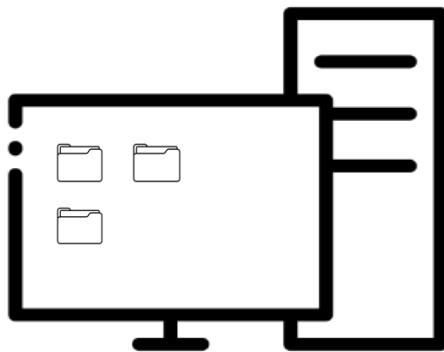
# AI Python for Beginners

## Lesson 2: Loading and Using your Own Data



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# Your data



Documents



To do lists



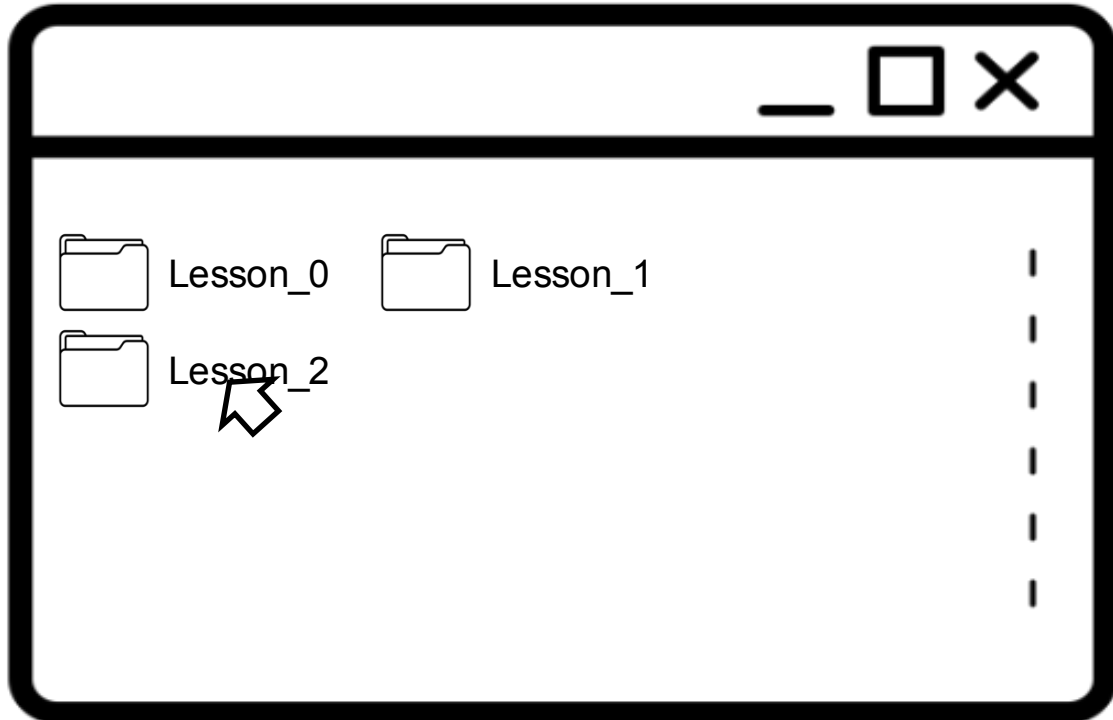
Emails



Spreadsheets



# Folder structure

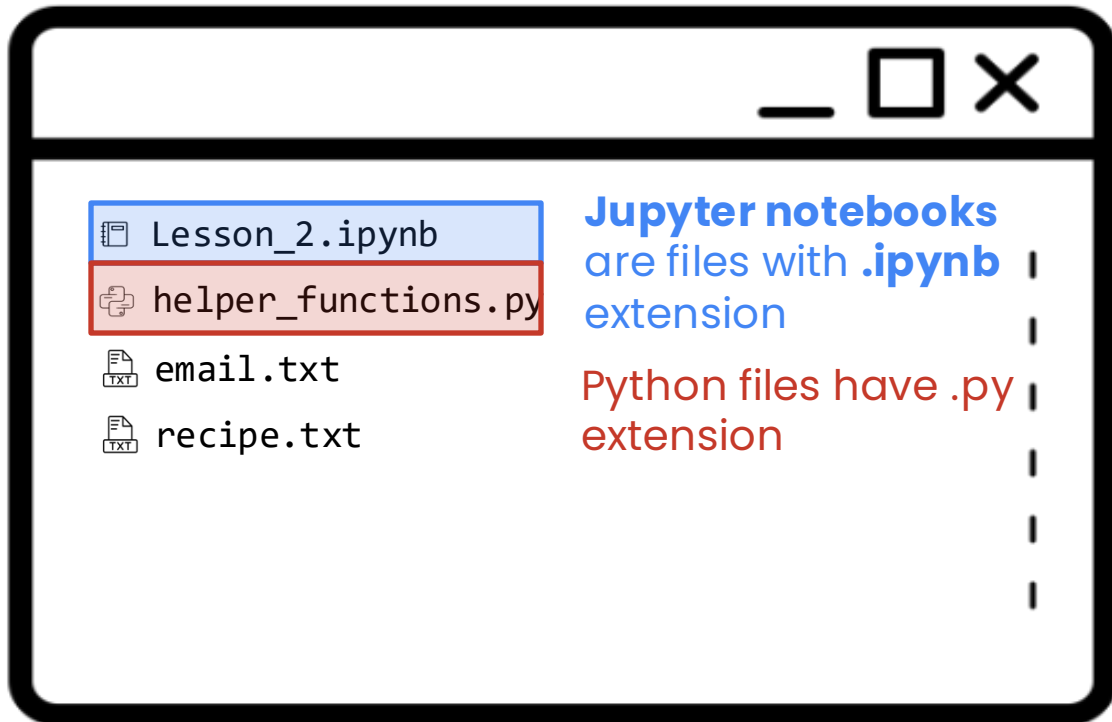


Developers tend to use the word **directory** rather than **folder**

# Folder structure



# Folder structure



The folder in which Python looks for files is called the **current working directory**



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## Lesson 3: Reading Journals from Food Critics



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# Text data

**Emails, journal entries, social media posts,** and other **text** can vary significantly in style and formatting.

## Food critic journal entry

My first destination was  
The Test Kitchen, a restaurant that has  
earned its place among the world's  
best. Situated in the trendy Woodstock  
area, this dining spot is celebrated for  
its innovative dishes. I was particularly  
taken by their signature dish, the  
"Pickled Fish Tacos."

Useful information  
within the text:

- Restaurant name
- Name of dish

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## Lesson 4: Extracting Restaurant Information from Journal Entries



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# Extracting information from text

Food critic journal entry

My first destination was **The Test Kitchen**, a restaurant that has earned its place among the world's best. Situated in the trendy Woodstock area, this dining spot is celebrated for its innovative dishes. I was particularly taken by their signature dish, the **"Pickled Fish Tacos."**

Useful information within the text:

- Restaurant name
- Name of dish

Get the important information

Restaurant	Dish
The Test Kitchen	Pickled Fish Tacos

# Saving files

Opens the file in writing mode ("w") and assigns it to the variable `f`

```
f = open("highlighted_text.html", "w")
```

Stores the value of the variable `html_response` in the file

```
f.write(html_response)
```

Closes the file stored in `f`

```
f.close()
```

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## Lesson 5: Vacation Planning Using CSV Files



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# CSV files

Used to store data that looks like tables

Arrival	Departure	City	Country
July-01	July-08	New York	USA
July-09	July-16	Rio de Janeiro	Brazil
July-17	July-24	Cape Town	South Africa
July-25	August-01	Istanbul	Turkey
August-02	August-09	Paris	France
August-10	August-17	Tokyo	Japan
August-18	August-25	Sydney	Australia

Rows are different lines, and **columns are separated by commas**

```
Arrival,Departure,City,Country
July-01,July-08,New York,USA
July-09,July-16,Rio de Janeiro,Brazil
July-17,July-24,Cape Town,South Africa
July-25,August-01,Istanbul,Turkey
August-02,August-09,Paris,France
August-10,August-17,Tokyo,Japan
August-18,August-25,Sydney,Australia
```

# Using CSV files in Python

Opens the file in reading mode

```
f = open("itinerary.csv", "r")
```

```
csv_reader = csv.DictReader(f)
itinerary = []
for row in csv_reader:
    itinerary.append(row)
```

Reads the file contents and assigns them to a variable

```
f.close()
```

Closes the file



# Using CSV files in Python

```
csv_reader = csv.DictReader(f)
itinerary = []
for row in csv_reader:
    itinerary.append(row)
```

# Using CSV files in Python

Tells Python the file is a csv so  
that it reads it using dictionaries  
for each row

```
csv_reader = csv.DictReader(f)
```

```
itinerary = []
```

 Creates an empty list to store the data

```
for row in csv_reader:  
    itinerary.append(row)
```

Iterates over each row in the csv file and  
appends its contents to the empty list

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## Lesson 6: Turning Code Blocks into Reusable Functions

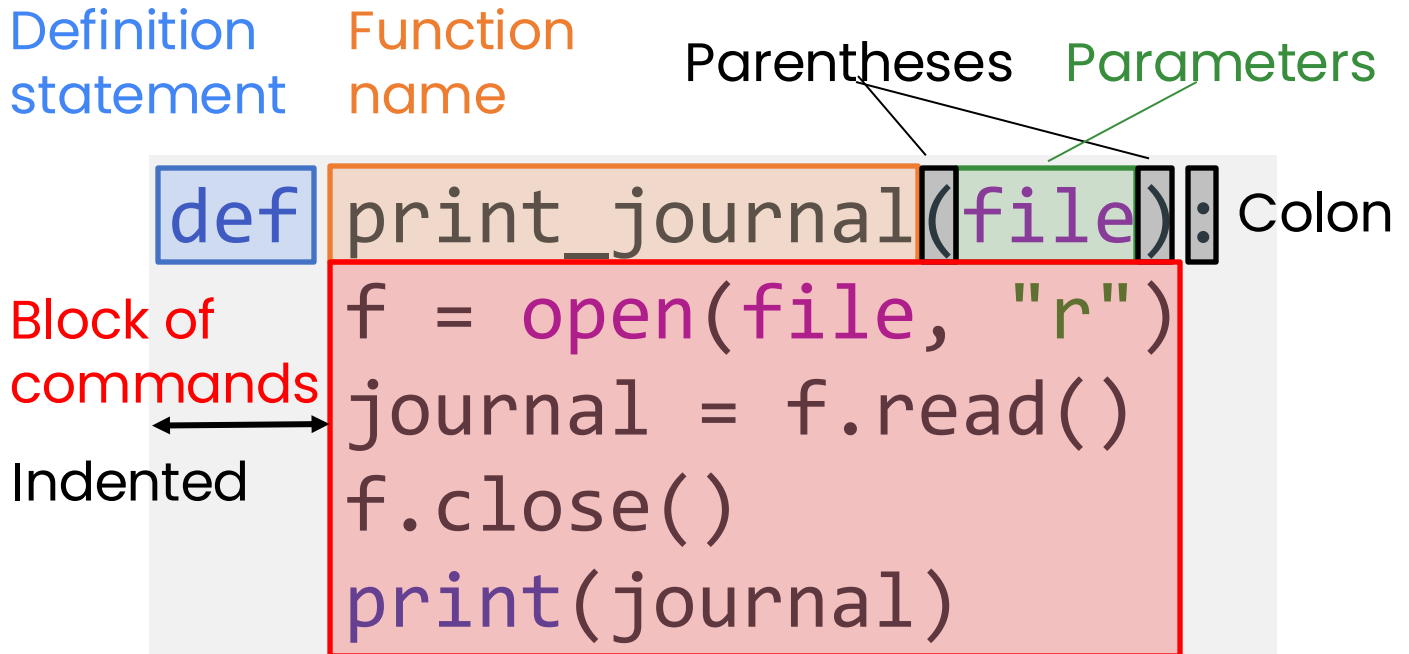


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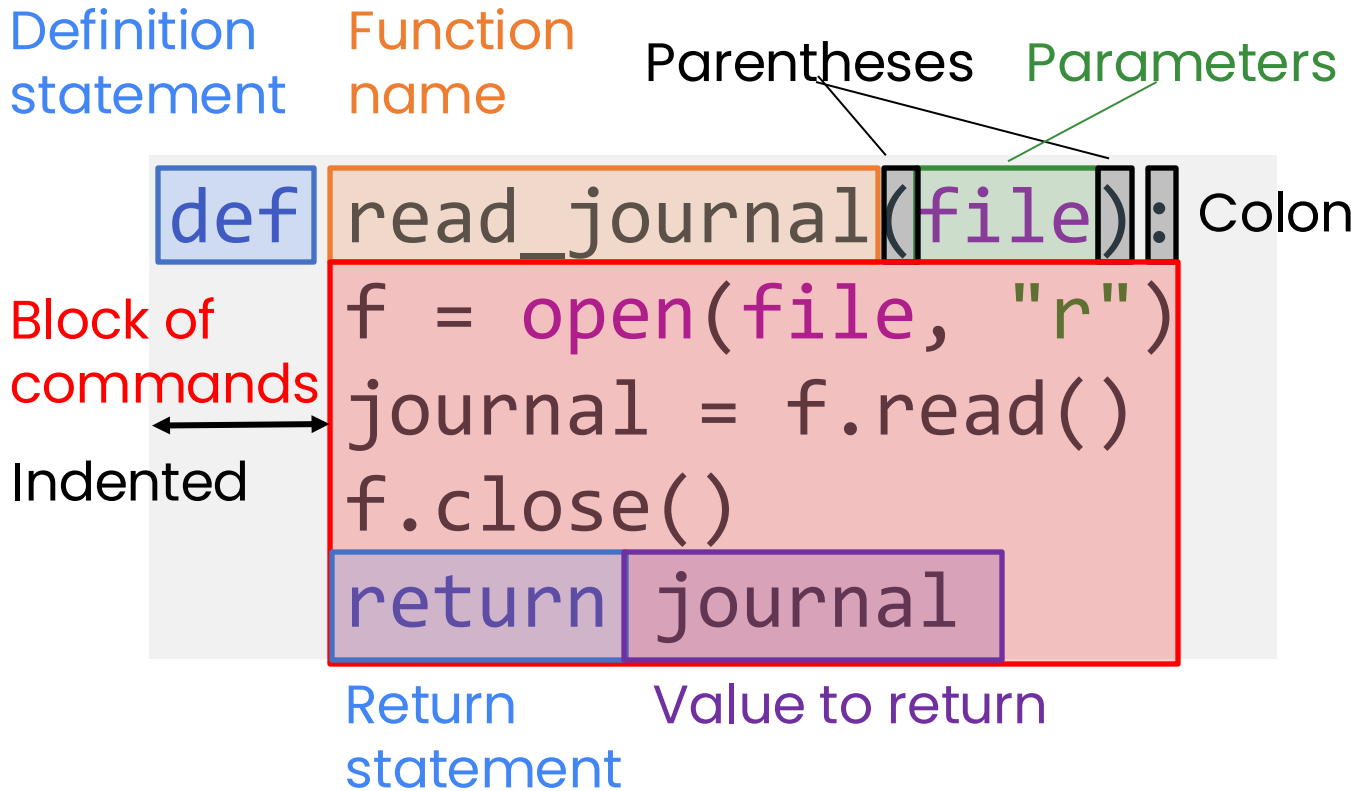
# What is a function?

A reusable set of commands to perform a specific task

# Parts of a function



# Returning



# Without functions vs with function

```
fahrenheit = 72
celsius = (fahrenheit - 32) * 5 / 9
print(f"Equivalent to {celsius}°C")

fahrenheit = 68
celsius = (fahrenheit - 32) * 5 / 9
print(f"Equivalent to {celsius}°C")

fahrenheit = 76
celsius = (fahrenheit - 32) * 5 / 9
print(f"Equivalent to {celsius}°C")

fahrenheit = 71
celsius = (fahrenheit - 32) * 5 / 9
print(f"Equivalent to {celsius}°C")
```

```
def fahrenheit_to_celsius(fahrenheit):
    celsius = (fahrenheit - 32) * 5 / 9
    print(f"Equivalent to {celsius}°C")

fahrenheit_to_celsius(72)
fahrenheit_to_celsius(68)
fahrenheit_to_celsius(76)
fahrenheit_to_celsius(71)
```

Functions let you **avoid writing blocks of commands repeatedly**. It also makes your programs **easier to read and understand**.

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## Lesson 7: Detailed Itineraries for Multiple Cities



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