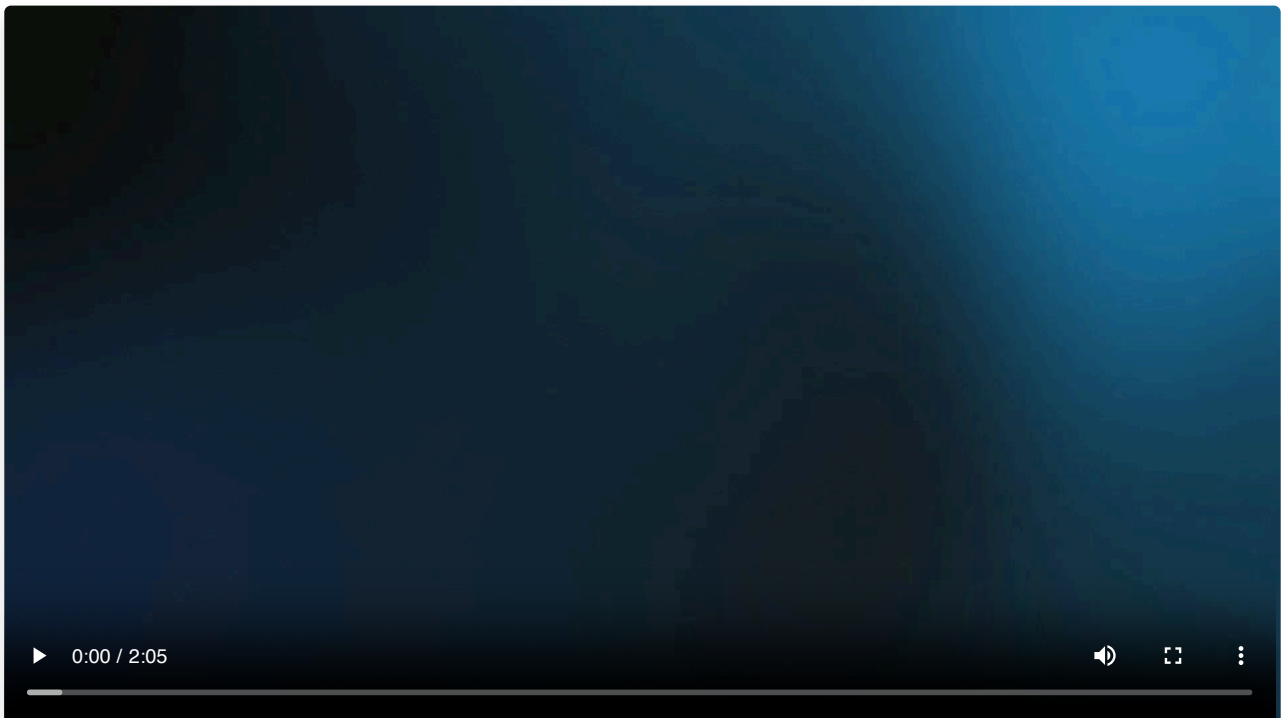


Introduction

Textbook

Python Intro

The Autograder



Foundation

In this unit you will be introduced to Python. **In order for Python to run, you must write your code in a Python file.**

Create a Python File

Go to the file bar at the top of your screen and create a new file. Name it something you can remember. **Make sure the file extension is .py.** This means that it is a Python file and you can run Python code.

What is Python?

[Python](#) is a very popular programming language that is often used for [web development](#). Python works well with JavaScript, another popular programming language.

There are two sides of web development: [front end](#), also known as client side, and [back end](#), also known as server side. Python allows you to start handling the back end of web development.

Other Languages

Here are some other common programming languages.

1. **JavaScript:** Used for front-end web development, enabling interactive and dynamic web pages in

the browser.

2. **HTML and CSS:** HTML structures web content, while CSS styles and layouts it for appearance.
3. **Ruby:** Known for its elegant syntax and used in web development with the Ruby on Rails framework.
4. **PHP:** A back-end language commonly used for dynamic content and integrates with content management systems like WordPress.
5. **Java:** A widely-used back-end language for large-scale, secure, and performant enterprise applications.
6. **C#:** A language for building web applications, games, and enterprise software, often used with the .NET framework.

Interpreted Language vs Compiled Languages

Let's explore these two types of languages for a moment

In a [compiled language](#), the computer understands the exact code. Examples of compiled languages: C, C++, Rust, Go

In an [interpreted language](#), the code needs to be translated into something the computer can understand. Interpreted languages need to be translated. Examples of interpreted languages: Python, JavaScript, Ruby

For example—let's say you were trying to make curry, but the recipe was in Thai and looked like this: สูตรแกงที่ฉันชอบที่สุดในโลก. You would need to translate the recipe before you could use it, just like interpreted coding languages.

Upper Level vs Lower Level Languages

HTML, CSS, JavaScript, and Python are all considered [upper level languages](#). [Lower level languages](#) work closer with binary values and are harder for the programmer to read. Upper level languages use abstraction to represent binary exchanges with words or symbols that are easier to read.

Examples of lower level languages include **C and C++**. These languages make up most of Microsoft software.

What is back-end and front-end development?

Front-end development refers to the design and layout of webpages. Back-end development refers to helping websites function by connecting them to where they need to go.

You can think of it like a house. Front end is like the decorations of the house: the pictures on the wall, the paint, what you see, what makes it look pretty, and what you directly interact with. Back end is the structure of the house, what's behind the walls that makes it stand, where the electricity runs, and what makes the house actually function.

So front-end is how websites look, and back-end is how websites work.

Why Python?

Python stands out among other programming languages because of its simple [syntax](#). Syntax is the punctuation and style of a language. Python is nice because it's very similar to the English language. It also works very well on different platforms (Mac, Windows, Linux and more).

Print

To [print](#) things in python you need to use the key word `print()` followed by opening and closing parentheses. Computers have a kind of notebook where they write down things that are happening. This notebook is called a [console](#). When we print things in Python, that's telling the computer to write down information in the console.

The word print must be in all lower case letters. Whatever is typed inside these parentheses show on the screen. You will also need to put quotations around the words you wish to print in many cases. We'll talk more about the quotation marks in upcoming lessons.

```
1 print("Hello World")
```

Try it!

INTRODUCTION TO PYTHON

Python



Skill
Struck TM

▶ 0:00 / 1:02



Checkpoint

Introduction

Write your code in the box in the center of the screen and your printed answers will be shown in the box on the right side of the screen.

Write code that will print `Hello World`

Requirements:

- Write code that will print `Hello World`

Questions (10)

1. Edit the text box below to debug (fix) the code:

DEBUG CODE

Code to Debug:

```
1 print(Welcome to my program!)
```

2. What kind of file extension must be on your file for Python code to run?

MULTIPLE CHOICE

Choose the correct answer:

- A. .html
- B. .css
- C. .js
- D. .py

3. Is Python generally used on the back-end or front-end of web development?

MULTIPLE CHOICE

Choose the correct answer:

- A. Back-end
- B. Front-end

4. Why does Python stand out from other programming languages?

MULTIPLE CHOICE

Choose the correct answer:

- A. Simple syntax
- B. Attention to detail
- C. Python doesn't require correct punctuation
- D. Python doesn't require capitalization

5. Which end of web development is how websites work?

MULTIPLE CHOICE

Choose the correct answer:

- A. Front-end
- B. Back-end

6. Which end of web development is how websites look?

MULTIPLE CHOICE

Choose the correct answer:

- A. Front-end
- B. Back-end

7. Edit the text box below to debug (fix) the code:

DEBUG CODE

Code to Debug:

```
1 print = ("I am learning to code!")
```

8. Edit the text box below to debug (fix) the code:

DEBUG CODE

Code to Debug:

```
1 print "Good morning"
```

9. What will the following code print out?

MULTIPLE CHOICE

```
print("Good Afternoon")
```

Choose the correct answer:

- A. print("Good Afternoon")
- B. "Good Afternoon"
- C. good afternoon
- D. Good Afternoon

10. What is the "notebook" called where Python writes things down?

MULTIPLE CHOICE

Choose the correct answer:

- A. console
- B. notes
- C. pages
- D. notebook

Challenges (5)

1. First Message

Write a print statement that prints the phrase `I love to code!`

Requirements:

- Print statement
- `I love to code!` is printed out. Don't forget the exclamation point.

2. Favorite Colors

Write **three** print statements that print out your top three favorite colors.

Requirements:

- Use 3 print statements with correct formatting

3. What's your order?

What is your favorite restaurant food order?

Create **three** print statements that have your favorite food, side, and drink.

Requirements:

- Use 3 print statements with correct formatting

4. Happiest Moment

Write a paragraph about the happiest moment of your life. Remember, a paragraph is **at least 5 sentences**.

What was it like? Why was it so awesome? Who else was there? Describe how it felt. Create a long print statement.

Make sure the print statement contains at **least 5 sentences**.

Requirements:

- A print statement with at least 5 sentences.

5. Your Favorite Things to Do

Create **5 print statements**.

Inside each print statement, write something you like to do.

Rank them in order from your number one favorite thing to your fifth favorite thing.

Requirements:

- Include 5 print statements
- Format the print statements correctly.

Answer Keys & Solutions

Checkpoint Solutions

Introduction

```
1 print("Hello World")
```

Questions

1. Edit the text box below to debug (fix) the code:

DEBUG CODE

Incorrect Code:

```
1 print>Welcome to my program!)
```

Correct Solution:

```
1 print("Welcome to my program!")
```

Explanation:

Don't forget quotation marks around the words in the parentheses!

2. What kind of file extension must be on your file for Python code to run?

MULTIPLE CHOICE

Correct Answer:

A. .html

✗ Incorrect

B. .css

✗ Incorrect

C. .js

✗ Incorrect

D. .py

✓ Correct

Explanation:

Python code needs to be in a python file with a .py extension.

3. Is Python generally used on the back-end or front-end of web development?

MULTIPLE CHOICE

Correct Answer:

A. Back-end

✓ Correct

B. Front-end

✗ Incorrect

Explanation:

Front end is how a website looks. Back end is how a website functions.

4. Why does Python stand out from other programming languages?

MULTIPLE CHOICE

Correct Answer:

A. Simple syntax

✓ Correct

B. Attention to detail

✗ Incorrect

C. Python doesn't require correct punctuation

✗ Incorrect

D. Python doesn't require capitalization

✗ Incorrect

Explanation:

Python syntax feels a lot like spoken syntax.

5. Which end of web development is how websites work?

MULTIPLE CHOICE

Correct Answer:

A. Front-end

✗ Incorrect

B. Back-end

✓ Correct

Explanation:

Front end is how a website looks. Back end is how a website functions.

MULTIPLE CHOICE

6. Which end of web development is how websites look?

Correct Answer:

A. Front-end

✓ Correct

B. Back-end

✗ Incorrect

Explanation:

Front end is how a website looks. Back end is how a website functions.

7. Edit the text box below to debug (fix) the code:

DEBUG CODE

Incorrect Code:

```
1 print = ("I am learning to code!")
```

Correct Solution:

```
1 print("I am learning to code!")
```

Explanation:

Print statements don't need an equals sign =

8. Edit the text box below to debug (fix) the code:

DEBUG CODE

Incorrect Code:

```
1 print "Good morning"
```

Correct Solution:

```
1 print("Good Morning")
```

Explanation:

Print statements go inside parentheses.

9. What will the following code print out?

MULTIPLE CHOICE

Correct Answer:

A. print("Good Afternoon")

✗ Incorrect

B. "Good Afternoon"

✗ Incorrect

C. good afternoon

✗ Incorrect

D. Good Afternoon

✓ Correct

Explanation:

The parentheses and quotes are not included.

10. What is the "notebook" called where Python writes things down?

MULTIPLE CHOICE

Correct Answer:

A. console

✓ Correct

B. notes

✗ Incorrect

C. pages

✗ Incorrect

D. notebook

✗ Incorrect

Explanation:

The word seems a bit out of place.

Challenges

1. First Message

Solution:

```
1 print("I love to code!")
```

2. Favorite Colors

Solution:

```
1 print("Red")
2 print("Orange")
3 print("Yellow")
```

3. What's your order?

Solution:

```
1 print("Steak")
2 print("Salad")
3 print("Lemonade")
```

4. Happiest Moment

Solution:

```
1 print("The happiest moment of my life was my 10th birthday party. All of my friends
   came! We had cake and ice cream. I got loads of presents and we had my favorite
   dinner! After eating, we went laser tagging and had a blast! I'll always remember
   that day.")
```

5. Your Favorite Things to Do

Solution:

```
1 print("My first favorite thing to do is to go running")
2
3 print("My second favorite thing to do is to eat mexican food")
4
5 print("My third favorite thing to do is to travel")
6
7 print("My fourth favorite thing to do is to craft")
8
9 print("My fifth favorite thing to do is to hang out with my friends.")
```