

Syntax & Comments Python Turtles

Textbook

Syntax & Comments Python Turtles



Different programming languages have different [syntax](#)—words and symbols that tell the computer certain commands.

Python, in particular, stands out due to its syntax, which deviates from many other languages by resembling the English language. While numerous programming languages terminate commands with semicolons, Python concludes commands with a [line break](#), created by pressing the enter key.

NOTE: Indentation is **very** important for Python syntax.

Comments

Comments in Python are sections of code that do not affect how the code runs. They can be used to put notes in the code or explain what the code is doing. Comments are designated with this symbol: `#`.

```
1 import turtle
2 turtle.getscreen()
3
4 # This is a comment
5 print('Did you see my comment?')
```

```
6  
7 # This is another comment
```

For the above example, the phrase `This is a comment` is a comment but the print statement is not. So in this code the print statement will run normally and the comment will do nothing to affect the program. Here is an example of how to use a comment to prevent code from running:

```
1 import turtle  
2 turtle.getscreen()  
3  
4 # The next line will not run  
5 # print('THIS LINE DOES NOT RUN')  
6  
7 # The next line will run like normal  
8 print('This line is not commented')
```

Documenting Code

Adding comments to your code is really important. Comments help others understand what your code is doing. This is called documenting your code. Since programming involves a lot of collaboration, with many people looking at different code resources for help and ideas, someone might check out your code someday to learn how to do something. So, it's crucial to add comments in key places to explain what your code is doing.

Give Attribution

Comments are also a useful place to give credit where you should. If you use code examples or snippets from someone else, make sure to make a comment that says

```
#code used from _____ with permission.
```

Give credit if you use an image, sprite, or any other element in your code that was taken from someone else. (Note, the Python Library is open source so it does not need to be credited)

Giving attribution is an important part of being a good digital citizen.

COMMENTS IN CODE

Python



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Checkpoint

Syntax & Comments Python Turtles

Practice adding a comment to your code!

1. Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
2. Create a variable and assign it to a string.
3. Create a comment explaining what the variable is.

Requirements:

- Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
- Create a variable.
- Add a Python comment to your code.

Questions (10)

1. What is syntax in programming?

MULTIPLE CHOICE

Choose the correct answer:

- A. The order of the letters, symbols, and words in a programming language.
- B. The color that code shows up in the code editor.
- C. Data about programming languages.
- D. The way code is formatted for readability.

2. What is the purpose of a comment in Python code?

MULTIPLE CHOICE

Choose the correct answer:

- A. To end a command.
- B. To make the code run smoothly.
- C. To prevent code from running.
- D. To explain or provide notes about the code.

MULTIPLE CHOICE

3. Which of the following lines will NOT run in the code below?

```
# The next line will not run print('THIS LINE DOES NOT RUN') print('This line is not commented')
```

Choose the correct answer:

- A. Line 1.
- B. All 3 lines will run.
- C. Lines 2 and 3.
- D. Line 3.
- E. Line 2.

MULTIPLE CHOICE

4. True or False: Indentation is very important in Python

Choose the correct answer:

- A. True
- B. False

MULTIPLE CHOICE

5. How do you create a line break?

Choose the correct answer:

- A. Tab key.
- B. Enter/return key.
- C. Space bar.
- D. Mouse click.

MULTIPLE CHOICE

6. What makes Python syntax different from most other languages?

Choose the correct answer:

- A. It is similar to English syntax.
- B. It uses comments in the program.
- C. It uses semicolons at the end of a thought.
- D. The order of parentheses matters.

7. How do you create a comment in Python?

MULTIPLE CHOICE

Choose the correct answer:

- A. <!-- Here is my comment -->
- B. // Here is my comment
- C. /* Here is my comment */
- D. # Here is my comment

8. Debug (fix) the following code:

DEBUG CODE

Code to Debug:

```
1 ** Here is my comment
```

9. Debug the following code. Assume you were trying to create a comment.

DEBUG CODE

Code to Debug:

```
1 I want this line to be a comment.
```

10. What does "documenting your code" mean?

MULTIPLE CHOICE

Choose the correct answer:

- A. Adding explanations about your code.
- B. Saving your code to a file on your computer.
- C. Keeping a tally of the number of lines of code in your project.
- D. Keeping a list of all the code files in your project.

Challenges (5)

1. Commenting Your Parents

What is something your parent always tells you?

1. Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
2. Create **3 print statements** that each print something different your parent always tells you.
3. Directly below each print statement, create a **comment** explaining why you think they tell you that all the time.

Requirements:

- Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
- 3 print statements about things your parent says.
- 3 comments about why your parent says those things.

2. How are you feeling today?

Have you ever thought about how you are feeling today as a sound? For example, today I am feeling like a kazoo because I'm feeling excited. Or maybe you are feeling like a color or a flavor?

1. Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
2. Create a variable named `sound` and assign it to a sound that is how you are feeling today.
3. Create another variable named `color` and another variable named `flavor`.
4. Assign each variable to an example of how you are feeling today.
5. On the line directly above each variable, **write a comment** that explains why you chose what you did.

Requirements:

- Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
- Write 3 different comments.
- Variable named `color`.
- Variable named `sound`.
- Variable named `flavor`.

3. Snow Day!

Have you ever been somewhere that snows a lot? Do you enjoy the snow? What do you like to do on a snowy day? Do you think you would like to go out sledding or stay inside with hot chocolate? What would you do on a free Saturday that snowed 3 feet?

If you've never been somewhere that has snow, what do you imagine you would like to do?

1. Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
2. Write a program that gets three inputs and assigns them to **three variables** - the morning, afternoon, and evening.
3. The user would then **input** what they would choose to do during those times of day.
4. **Print** out each of the chosen activities.
5. At the top of the code, include a **comment** that explains what the program is doing.

Requirements:

- Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
- Create a variable for `morning`.
- Use three `input()` commands to ask what they would do in the morning, afternoon, and evening.
- Assign each input to its correct variable.
- Print each variable in a print statement.
- Include a comment at the top of the code.
- Create a variable for afternoon.
- Create a variable for evening.

4. Your Favorite Movies

In your opinion, which movies are the all time best?

1. Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
2. Create **3 print statements** that say your top 3 favorite movies.
3. Below each print statement, include a **comment** explaining why that movie is your favorite.

Requirements:

- Include the necessary code to start up a Python screen. (Import the library and generate a screen.)
- 3 print statements with your top 3 favorite movies.
- 3 comments explaining why those are your top 3 favorites.

5. Olympic Rings Continued

Let's practice taking a previous project and making it better!

In Python Turtles 1 > Pen Up & Fill Image, there was a challenge to draw the Olympic rings. There were 5 different rings to work with and a LOT of code to manage. Adding comments would help to keep the code organized and easy to read. Try adding comments to the code!

1. Copy the code from the previous challenge and paste it into your code editor.
2. Add at least 5 useful comments to the code.

Here is the code from the previous challenge.

```
import turtle

turtle.getscreen()

turtle.title("Olympic Rings")

turtle.pensize(5)

turtle.pencolor("blue")

turtle.circle(20)

turtle.penup()

turtle.forward(50)

turtle.pendown()

turtle.pencolor("black")

turtle.circle(20)

turtle.penup()

turtle.forward(50)

turtle.pendown()

turtle.pencolor("red")

turtle.circle(20)

turtle.penup()

turtle.backward(100)

turtle.right(90)

turtle.forward(20)

turtle.left(90)

turtle.forward(25)

turtle.pendown()

turtle.pencolor("yellow")

turtle.circle(20)

turtle.penup()

turtle.forward(50)

turtle.pendown()

turtle.pencolor("green")
```



```
turtle.circle(20)
```

Requirements:

- Copy the code from the previous challenge and paste it into your code editor.
- Add at least 5 useful comments to the code.

Answer Keys & Solutions

Checkpoint Solutions

Syntax & Comments Python Turtles

```
1 import turtle
2 turtle.getscreen()
3
4 color = "purple"
5 #This is the code for a purple turtle!
```

Questions

1. What is syntax in programming?

MULTIPLE CHOICE

Correct Answer:

- A. The order of the letters, symbols, and words in a programming language. ✓ Correct
- B. The color that code shows up in the code editor. ✗ Incorrect
- C. Data about programming languages. ✗ Incorrect
- D. The way code is formatted for readability. ✗ Incorrect

Explanation:

Syntax refers to the characters used in the code.

2. What is the purpose of a comment in Python code?

MULTIPLE CHOICE

Correct Answer:

- A. To end a command. ✗ Incorrect
- B. To make the code run smoothly. ✗ Incorrect
- C. To prevent code from running. ✗ Incorrect
- D. To explain or provide notes about the code. ✓ Correct

Explanation:

Comments explain what the code is doing

3. Which of the following lines will NOT run in the code below?

MULTIPLE CHOICE

Correct Answer:

- A. Line 1. ✓ Correct
- B. All 3 lines will run. ✗ Incorrect
- C. Lines 2 and 3. ✗ Incorrect
- D. Line 3. ✗ Incorrect
- E. Line 2. ✗ Incorrect

Explanation:

The # hashtag symbol creates a comment.

4. True or False: Indentation is very important in Python

MULTIPLE CHOICE

Correct Answer:

- A. True ✓ Correct
- B. False ✗ Incorrect

Explanation:

Indentation affects how Python code runs.

5. How do you create a line break?

MULTIPLE CHOICE

Correct Answer:

- A. Tab key. ✗ Incorrect
- B. Enter/return key. ✓ Correct
- C. Space bar. ✗ Incorrect
- D. Mouse click. ✗ Incorrect

Explanation:

A line break is just manually going to a new line.

6. What makes Python syntax different from most other languages?

MULTIPLE CHOICE

Correct Answer:

- A. It is similar to English syntax. ✓ Correct
- B. It uses comments in the program. ✗ Incorrect
- C. It uses semicolons at the end of a thought. ✗ Incorrect
- D. The order of parentheses matters. ✗ Incorrect

Explanation:

Python feels similar to spoken languages.

7. How do you create a comment in Python?

MULTIPLE CHOICE

Correct Answer:

- A. <!-- Here is my comment --> ✗ Incorrect
- B. // Here is my comment ✗ Incorrect
- C. /* Here is my comment */ ✗ Incorrect
- D. # Here is my comment ✓ Correct

Explanation:

/* is used for CSS. <!-- is used for HTML. // is used for JavaScript

8. Debug (fix) the following code:

DEBUG CODE

Incorrect Code:

```
1 ** Here is my comment
```

Correct Solution:

```
1 # Here is my comment
```

Explanation:

Did you use this symbol? #

9. Debug the following code. Assume you were trying to create a comment.

DEBUG CODE

Incorrect Code:

```
1 I want this line to be a comment.
```

Correct Solution:

```
1 #I want this line to be a comment.
```

Explanation:

Did you use this symbol? #

10. What does "documenting your code" mean?

MULTIPLE CHOICE

Correct Answer:

- A. Adding explanations about your code. ✓ Correct
- B. Saving your code to a file on your computer. ✗ Incorrect
- C. Keeping a tally of the number of lines of code in your project. ✗ Incorrect
- D. Keeping a list of all the code files in your project. ✗ Incorrect

Explanation:

Documenting code is adding comments that describe what your code is doing.

Challenges

1. Commenting Your Parents

Solution:

```
1 import turtle
2 turtle.getscreen()
3
4 print("Clean your room!")
```

```
5 # My room is dirty all the time
6
7 print("Don't talk to strangers.")
8 # It's probably a good idea
9
10 print("I love you!")
11 # She really cares about me.
```

2. How are you feeling today?

Solution:

```
1 import turtle
2 turtle.getscreen()
3
4 #I chose eagle call because I feel like I'm flying with this code
5 sound = "eagle call"
6 #I chose green because I'm still learning
7 color = "green"
8 #I chose grape because it sounds almost like "great"
9 flavor = "grape"
```

3. Snow Day!

Solution:

```
1 import turtle
2 turtle.getscreen()
3
4 #Here is what I like to do!
5 morning = input("What do you like to do in the morning?")
6
7 afternoon = input("What do you like to do in the afternoon?")
8
9 evening = input("What do you like to do in the evening?")
10
11
12 print(morning)
13 print(afternoon)
14 print(evening)
```

4. Your Favorite Movies

Solution:

```
1 import turtle
2 turtle.getscreen()
```

```
3
4 print("The best movie is End Game")
5 #It wraps up the Marvel universe super well!
6
7 print("The second best movie is Into the Spiderverse")
8 #I love the animation!
9
10 print("The third best movie is Star Wars")
11 #Star Wars reminds me of my childhood!
```

5. Olympic Rings Continued

Solution:

```
1 import turtle
2 turtle.getscreen()
3
4 turtle.title("Olympic Rings")
5 turtle.pensize(5)
6
7 #blue circle
8 turtle.pencolor("blue")
9 turtle.circle(20)
10 turtle.penup()
11
12 #black circle
13 turtle.forward(50)
14 turtle.pendown()
15 turtle.pencolor("black")
16 turtle.circle(20)
17 turtle.penup()
18
19 #red circle
20 turtle.forward(50)
21 turtle.pendown()
22 turtle.pencolor("red")
23 turtle.circle(20)
24 turtle.penup()
25
26 #repositioning
27 turtle.backward(100)
28 turtle.right(90)
29 turtle.forward(20)
30 turtle.left(90)
31 turtle.forward(25)
32
33 #yellow circle
34 turtle.pendown()
35 turtle.pencolor("yellow")
36 turtle.circle(20)
37 turtle.penup()
38
39 #green circle
40 turtle.forward(50)
41 turtle.pendown()
42 turtle.pencolor("green")
43 turtle.circle(20)
```

