

What students need to know for...
AP Computer Science Principles

This is a MANDATORY assignment that will be GRADED. It is due the first day of the course and will count as homework.

Welcome to AP Computer Science Principles! In this course we focus on computational thinking and how we can study and analyze data to draw conclusions from trends. You will be encouraged to be creative and explore how computer software and technology can be used to solve problems.

Please complete this packet over the summer. The work in this packet is an introduction to Python, which is the programming language for AP CSP. You will turn your assignments to Google classroom on the first day of class. You do not need to download anything to do these assignments, but you do need a computer. You should allow yourself 2 - 5 hours to complete the assignments.

If you have any questions or if you do not have a computer to complete the assignments, please email your teachers - ewu@cpsd.us or eatwood@cpsd.us. We look forward to seeing you next year!

How to capture screenshots in Windows:

[Link to instructions](#)

[Link to different set of instructions \(with video\)](#)

How to capture screenshots in Mac OS X:

[Link to instructions](#)

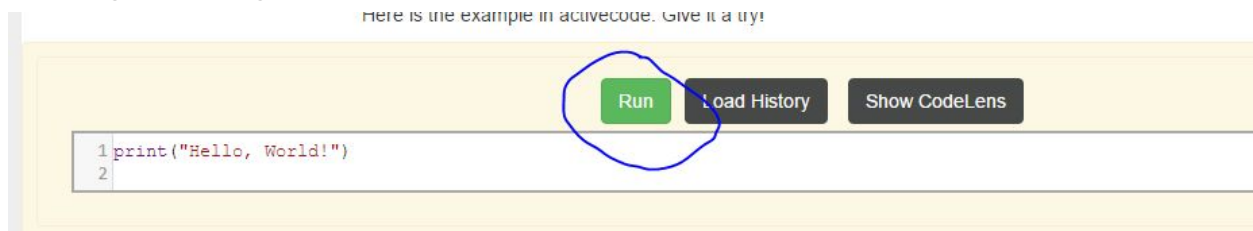
[Link to different set of instructions](#)

HW 1, Printing

Read this page:

<http://interactivepython.org/runestone/static/thinkcspy/GeneralIntro/ATypicalFirstProgram.html>

This book is “How to think like a Computer Scientist”, which is a classic book in the field of Python learning. The e-book version is interactive. By clicking on the green “Run”



you can run an actual Python shell in the browser.

1. In the “Run” window, create a (very short) program that prints out anything (other than “Hello World”)
2. Answer questions `intro-12-1` correctly.
3. Screenshot proof that these are done.

HW 2, Types

Read this page:

<http://interactivepython.org/runestone/static/thinkcspy/SimplePythonData/ValuesandDataTypes.html>

1. In any of the “Run” windows, create a (very short) program that prints out the following:

```
<class 'str'>  
<class 'int'>  
<class 'float'>  
5  
6.9  
AP CSP is the best  
<your name here>
```

2. Answer questions `data-2-1` and `data-2-2` correctly.

3. Screenshot proof that these are done.

HW 3, Expressions

Read this page:

<http://interactivepython.org/runestone/static/thinkcspy/SimplePythonData/StatementsandExpressions.html>

<http://interactivepython.org/runestone/static/thinkcspy/SimplePythonData/OperatorsandOperands.html>

And do the “Run” exercises to be sure you understand the text.

1. In any of the “Run” windows, create a (very short) program that calculates the value of 100 Centigrade in Farenheit. Hint, the formula is $9/5 * C + 32 = F$. (plug in the value of 100C into the formula and print out the value)
2. In any of the “Run” windows, create a (very short) program that calculates the value of 65 miles/hour in km/h. Hint, the formula is $miles/h * (1/0.6213) = km/h$. This is a conversion you care about if you drive to Canada.
3. In any of the “Run” windows, create a (very short) program that prints your name.
4. Answer questions `data-7-1`, `data-7-2`, and `data-7-3` correctly.
5. Screenshot proof that these are done.

HW 4, Variables and inputs

Read this page:

<http://interactivepython.org/runestone/static/thinkcspy/SimplePythonData/Variables.html>

<http://interactivepython.org/runestone/static/thinkcspy/SimplePythonData/Input.html>

And do the “Run” exercises to be sure you understand the text.

1. In any of the “Run” windows, create a (very short) program that does the following:

Create three variables and assign them values. ONE of these variables should have your name as the value.

Print out the values of these variables

Change the values of one of these variables

Print out the values of these variables (again)

2. In any of the “Run” windows, create a (very short) program that does the following:

Asks user for favorite movie, and prints it out.

3. Answer questions `data-4-1` and `data-8-1` correctly.

4. Screenshot proof that these are done.

HW 5, Casting/type conversions

Read this page:

<http://interactivepython.org/runestone/static/thinkcspy/SimplePythonData/TypeConversionFunctions.html>

1. Do the “Run” exercises to be sure you understand the text.
2. Answer question `data-3-1` correctly.
3. Screenshot proof that these are done.