Introduction to Python Computer Programming

North Star High School

Unit 1

The Way of the Program

# Reading Material

The text for this unit is Think Python chapter 1 (pages 1 through 8).

Do not worry about the material regarding installing python (section 1.2), the systems in the computer lab have been preconfigured with Python.

It is encouraged to work on your reading with the Python interpreter open on your computer, so that you can type in the examples and experiment as you read.

# Guided Reading

Please complete the following questions using the assigned reading above.

1. The single most important skill for a computer scientist is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (problem solving)
2. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a sequence of instructions that specifies how to perform a computation. (program)
3. Getting data from the keyboard, a file, the network, or some other device is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (input)
4. Checking for certain conditions and running the appropriate code is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (conditional execution)
5. Performing some action repeatedly, usually with some variation, is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (repetition)
6. Special symbols that represent computations like addition and multiplication are known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (operators)
7. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is one of the basic things a program works with, like a letter or a number. (value)
8. Values belong to different types, for example 9 is of type \_\_(integer)\_\_\_\_\_\_ , 6.8 is of type \_(floating-point number) \_\_ , and ‘North Star’ is of type \_\_\_\_(string)\_\_\_\_\_.
9. Unlike English, a programming language is an example of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ language designed to express computation. (formal)
10. The process of tracking down errors in programs is known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. (debugging)

**­­­­­Be sure that you are familiar with all of the definitions in the glossary (section 1.8)!**

Assignment

1. Exercise 1.1 in the textbook:

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| **Exercise 1.1.** *It is a good idea to read this book in front of a computer so you can try out the examples as you go.*  *Whenever you are experimenting with a new feature, you should try to make mistakes. For example, in the “Hello, world!” program, what happens if you leave out one of the quotation marks? What if you leave out both? What if you spell* print *wrong?*  *This kind of experiment helps you remember what you read; it also helps when you are programming, because you get to know what the error messages mean. It is better to make mistakes now and on purpose than later and accidentally.*   1. *In a print statement, what happens if you leave out one of the parentheses, or both?*   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(SyntaxError)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. *If you are trying to print a string, what happens if you leave out one of the quotation marks,or both?*   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(SyntaxError)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. *You can use a minus sign to make a negative number like* -2*. What happens if you put a plus sign before a number? What about* 2++2*?*   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(4)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   1. *In math notation, leading zeros are ok, as in* 02*. What happens if you try this in Python?*   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(SyntaxError)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  *What happens if you have two values with no operator between them?*  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

1. Write your own “Hello World” program. See section 1.3 for details of the syntax of the print function in Python. Feel free to experiment and make your program as interesting as possible! (hello\_world.py)

If time allows, please complete exercise 1.2 in the textbook. (ex\_1.2.py)