ICS 140 Computational Thinking with Programming

Class Exercise 1

Lecture

1. What category of hardware do the keyboard, mouse and camera belong to?

They belong to the input category.

2. List 3 examples of output devices:

Monitor, Speakers, computer lights.

3. What type of memory is used to store a program while running?

The RAM, or main memory, is used to store running programs.

4. What type of memory is used for long term storage?

Hard drives, or secondary memory, are used to store long-term memory.

5. How many bits are in a byte?

There are 8 bits in a byte.

6. What are the only possible values that can be stored in a bit?

0 and 1

7. What is ASCII?

List of general 128 characters converted to a numerical value.

8. What type of encoding system supports additional characters to support more languages?

Unicode

9. What type of memory does the CPU read instructions from?

CPU reads instructions from RAM, or main memory.

10. What programming language uses an assembler to convert mnemonics to machine code?

An assembly language or Low- level language.

11. What are three examples of high-level programming languages?

Java, C, python

12. What is the difference between a compiled and interpreted programming language?

Compiler language translates the entire source code prior to running and in a single run which takes less time than an interpreter.

The interpreter requires the interpreter software downloaded and will tax the machine more because of the line-by-line translation to machine code.

13. What is the command used to run python in interactive mode?

You type “python” into a shell, for example into Command prompt on windows.

Computer Setup

For the following exercises we need to install python and an IDE. We will go through this process in class. Visual Studio Code will be used for all coding examples so I recommend it for the students as well. You can download Visual Studio Code here: https://code.visualstudio.com/Download

You can download Python here: https://www.python.org/downloads/

In visual Studio Code click the extensions icon, select the python extension and install it.

To test out the installation, create a file called helloworld.py and enter the following line:

print(“hello world!”)

Save the file and run it. It should print out: hello world!

Paste a screenshot of your code running below and then save this file as a PDF and upload it to D2L.

Paste screenshot of hello world program here.