

## Fall 2020 COP 2930 Midterm Exam Part A

**Date: 10/8/2020**  
**Time Given: 10:30 am**  
**Time Due: 11:00 am**  
**Late Due Time: 11:10 am**

**Directions:** Please use your course notes and a calculator as aids for this exam. Do NOT attempt to look up information online and do NOT run things in IDLE. Please type your answers directly in the provided .docx file, or type your answers in your own text file or .docx file. The accepted file types for submission will be .doc, .docx, .txt and .pdf.

**It's recommended that you stop working at the due time and start uploading at that time. Anything turned in before the late due time will be accepted for full credit. Anything that doesn't make it in by the late due time will earn a 0.** A 10 minute buffer is provided after both due times. Please don't take advantage of these buffers as it's an unnecessary risk.

- 1) (12 pts) Please provide 3 **different** ways to produce the following output:

hello  
bye

Each method should have one or two print commands. (Hint: make use of end, sep and escape sequences.)

- 2) (12 pts) The value added tax in France is 20%. This means when you buy an item for which the tax applies, an extra 20% is added to the purchase price. Write a program that reads in the cost of an item (before tax) in Euro as a floating point number and then prints out the total cost with the value added tax added. For example, if the user enters 5.20, your program should print out 6.24, since 1.04 is 20% of 5.20.

- 3) (10 pts) The earth has a circumference of 25,000 miles, roughly. Imagine superman flying X miles, following the path of the equator, starting at Quito, Ecuador, flying east (towards Africa from South America). What do the expressions **x//25000** and **x%25000**, represent, respectively, in terms of Superman's whole flight?

- 4) (15 pts) For essential items such as bread and cheese, France does not charge a value added tax. Write a new program that asks the user to enter the original price of an item, AND enter if the item is essential or not. If the user answers "yes", then no value added tax (20%) is added to the final cost. If the user answers anything but "yes", the value added tax should be applied. In both cases, print out the final cost of the item.

- 5) (1 pt) What fruit flavor is added to the cereal, Apple Jacks?