

CS101: HW 1

Due: October 3, 2018

Submission Instructions: Type your answers to the following questions in a .doc or .txt file and submit on Canvas. You will also need to submit your code **in a separate file**.

Logistics Questions

1. What is the honor code policy? What forms of help are allowable on the homeworks, and what must you cite? Can you ever copy work from another source?
2. When (date and time) is the midterm? When (date and time) is the final? Also include a statement that you can attend both exams (or email Shreya for alternate accommodations).
3. Are you enrolled in this course for the correct number of units (undergraduate students should be enrolled for 5 units)?

Software Exercises

Complete the code exercises at <http://web.stanford.edu/class/cs101/code-1-exercises.html> and submit them on Canvas **as a separate file**. You should collect all your code by clicking the “retrieve code” button at the bottom of the page, then copying and pasting the code into a new document.

4. What is the output of the following code?

```
print("hello", 4);  
print("\\");  
print("print(1, 2, 3)");
```

Be sure to include line breaks when appropriate.

5. Describe two ways you can quit a program.
6. How does an operating system make your computer more secure? Describe two other roles of an operating system.
7. Find some software that is open source that we did not discuss in class. How has that software had an impact? For example: Java was open-sourced by Oracle, and now it's one of the most popular programming languages. Firefox is an open-sourced web browser that eventually led to the creation of Google Chrome.

8. List one programming language that is an interpreted language and another that is a compiled language that we didn't discuss in class. What is the difference between interpreted and compiled languages?
9. Describe two reasons for open-sourcing code and two reasons for only releasing the .app/.exe files. Describe a product you might open-source and one you might not.
10. Why would a company like Google contribute to open source code (that is not their own, such as Linux)?

Hardware Exercises

11. Open Task Manager or Activity Monitor and take a screenshot of the program. Which program is using the most memory? What kind of memory is being measured (hard drive or RAM)? Which is using the most CPU? Name a program listed that you weren't expecting.
12. Describe three resources shared between programs or applications, managed by the operating system. How is each one managed?
13. Would you prefer flash storage or disk storage in a new computer? Give at least two specific reasons to support your choice.
14. Given your understanding of Moore's Law, why does an iPhone today cost more than it did upon its release?
15. Describe how CPU, RAM, and hard drive storage were used as you completed this homework assignment. Which other layer(s) of abstraction did you directly interact with?
16. What inputs for A and B make the output of the following circuit true, or 1? What inputs make it false?

