CS 1: Introduction To Computer Programming, Fall 2013

Midterm exam: cover sheet

Due: *Thursday, November 14, 18:00:00*

This is the CS 1 midterm exam cover sheet. You should read this cover sheet in its entirety **before** you begin the exam.

Preliminaries

- This exam is due on **Thursday, November 14, 18:00:00**. Please submit your text answers electronically through http://csman.cs.caltech.edu, just like you do with your assignments.
- There is **no time limit** on this exam. Yes, you read that right. No time limit. Take as long as you like, except that you *must* hand the exam in on time or else face significant late penalties (3.0 marks/day). You can work in non-consecutive sessions if you like. You can use the Python interpreter (see below), take your time debugging, etc. We estimate that this exam should not take longer than six hours if you have kept up with the material and understand it.
- This exam covers all the material up to lecture 13 and assignment 4, except that it will not cover graphics (`Tkinter`).
- This is an **open-book** and **open reference** exam, with some restrictions. You may not consult the work of any other student in CS 1 (*e.g.* a copy of their assignments), or printed notes written up by other students in the course or even not in the course. You are allowed to consult any notes you yourself have prepared, or any notes prepared by a CS 1 TA or the instructor. You're also allowed to consult your own assignments, including any comments on them submitted by your grader. Also, you may consult the online Python documentation for Python 2.7.5 located here (and also linked from the CS 1 home page under "Course software"). Make sure that you are consulting the documentation for the correct version of Python! The most recent Python documentation refers to a version of Python which is not the version we are using in this course, and this could cause a lot of

confusion.

- You may **not** ask questions about the exam problems on internet forums. Also, in the (unlikely) event that you find some code online which happens to solve one of the exam problems, you may not read it, consult it or use it in any way.

- You may consult the PDF (electronic) versions of the CS 1 lectures. However, we recommend that you not print out paper copies of the CS 1 lectures in the interests of saving trees. We also **strongly** recommend that you use the "Course syllabus" web page on the course website to help you find the lecture(s) covering particular topics.

- This is an **open interpreter** exam, with the exception of section 1, which must be done without typing the code into a Python interpreter. For the other sections, you may use WingIDE or a Python interpreter to test your code. However, we recommend that you don't spend large amounts of time debugging your code. We're more interested in seeing that you know what you're doing than that every single detail is perfect (this is in sharp contrast to the assignments!).

- There is **no collaboration** on this exam. Show us what *you* know. Do not discuss the exam with anyone (in or outside of Caltech) before the final due date under *any* circumstances, even if you have both turned in your answers already. You also can't discuss the exam with a TA or the course instructor, except to ask for clarifications of questions or simple very specific Python questions (for instance, asking "In Python, how can I concatenate all strings in a list of strings?" is an acceptable question to ask a TA, but "How can I solve problem 4?" is not). If you attend a lab section before the due date, do not discuss the exam with the TA. Do not not look at anyone else's code, and do not let anyone else see your code.

- Be aware that violating the reference or collaboration policies is a violation of the Honor Code, and will be dealt with accordingly.

- Here is how your exam should be formatted. Note that **we will deduct a significant proportion of your midterm grade (up to 1/4 of the total grade) if you break any of these rules.** If you have any questions about these rules, contact us before starting the exam and we'll clarify them.

    1. Type up your exam in any **plain text** editor of your choice, including WingIDE. A plain text editor is one which saves text in an unformatted state; therefore, you may not use word processors like Microsoft Word unless you know how to make it save files as plain text (and you *will* lose marks if you do this wrong!). We recommend you use WingIDE

since you are already familiar with it, and since it definitely saves text as unformatted plain text.

2. Your midterm exam should all be in a **single plain text file** called "`midterm.py`" (that **exact** name; not "`cs1midterm`", "`midterm`", "`mymidterm`", "`Midterm.py`" or anything else). **You should write your full name and your CMS cluster login name in comments on the first two lines of the file, like this:**

   ```
   # Name: Joe Blow
   # CMS cluster login name: jblow
   ```

   (Naturally, you'll substitute your own names for the names given above.)

3. Your midterm exam should be executable Python code. This means that all non-code answers to questions should be written as Python comments, for instance:

   ```
   # Problem 2.1
   # The mistake in this Python code is ...
   ```

   However, Python code you write should not be commented-out, except that normal Python comments in your code are OK. In addition, all Python functions you write should have docstrings. For instance:

   ```
   # Problem 4.3
   def howdy(s):
       '''Print a cool greeting.'''
       print "Howdy, %s" % s
   ```

4. **Do not** submit code in non-plaintext form; Microsoft Word documents, Rich Text documents, and PDFs are examples of non-plaintext formats. Again, **Microsoft Word documents, Rich Text documents and PDFs are not acceptable submission formats!** If you do not know what format your editor saves its files in, you should ask someone more knowledgeable (like your TA) to help you.

5. **Make sure** that all of the lines in your midterm file have **no more than 80 characters in a line**. Most text editors (including WingIDE) will show you what column you're on as you're editing, so this will help you keep the line lengths to a maximum of 80 characters. WingIDE also has a helpful red line at the 80-column mark, so if your lines go over this, they're too long.

6. Here is a tip which will make it much easier to tell if your exam is formatted correctly. First, copy the `midterm.py` file containing your

midterm answers to your CMS cluster account. Then type this at the terminal prompt:

```
% more midterm.py
```

(where the `%` is the terminal prompt; yours may be different). If the file is displayed as you expect it to look on the terminal, then there is probably no problem. If it doesn't display at all or looks like random garbage, then the file is almost certainly in the wrong format and you'll have to ask a TA for help. If there is a warning about the file being a binary file, it is definitely in the wrong format. Note that changing the file extension (*e.g.* from `.pdf` to `.txt`) does *not* change the file format, so don't do that. Alternatively, you may find that the file is readable but the indentation is messed up, or there may be some very long lines. This probably indicates that it is a valid text file, but that you have a problem with your text editor (for instance, you may be using tabs instead of spaces or you could be letting lines wrap instead of hitting the return key to begin a new line). You should fix this unless you want to lose marks.

7. At this point, you've seen examples of good and bad style and you should have at least skimmed the Python Style Guide posted on the CS 1 Moodle page. Therefore, if your code exhibits very bad style you will lose marks for it. We will mainly be concerned with aspects of style that have been covered in the assignments.

- **If you did not read the preceding formatting rules, go back and read them now.** Remember: you **will** lose a lot of marks for not following the rules!

- In addition, we will take marks off if your code is extremely convoluted and/or hard to understand, even if it's technically correct. Good commenting can improve matters, but try to find simple solutions to problems where possible!

- The exam will receive a floating-point score between `0.0` and `6.0`, based on your performance across all of the problems. Each section is worth an equal amount (1.5 out of 6.0). The exam is thus worth 6.0 marks out of a maximum of 45.0 marks for the entire course, or about 10% of your final grade. There is no minimum grading on the midterm exam, and the point value of each problem is indicated next to the problem. There is also **no rework** on the midterm — it's an exam, after all, not an assignment.

- If you need a clarification of anything on the exam after you've started writing it, you may send email to your TA or to the instructor (Mike) at

mvanier@cs.caltech.edu. You can pause your exam while you wait for the answer.

Go here to take the midterm.
