

Homework #3 Introduction to Computing

Due: Sept. 24 (Friday at 11:59 PM)

You are to write a menu-driven Math Tutor program for small children. Your program's interaction should look something like: (Student input shown in **bold**.)

```

Math Tutor Menu

1. First Grade
2. Second Grade
3. Third Grade

Enter your grade (1-3): 3<Enter>

Problem:  395
         + 137
         ----
Answer:   422<Enter>

Sorry, your answer is incorrect.  The correct answer is 532.

```

Your program should randomly select the difficulty of the the problem according to the following table.

Grade Level	Range of the Numbers
First Grade	0 to 9
Second Grade	10 to 99
Third Grade	100 to 999

Additional things that your program should do:

- name your program mathTutor.py,
- alignment the numbers to be added,
- check for a valid menu selection. Anything other than '1', '2', or '3' should print an appropriate error message and ask the user to retry.

Extra credit features: (You don't need to do both to get partial extra credit)

- Randomly pick the arithmetic operation based on the grade level. First grade should only be addition. Second grade can be addition or subtraction, but if subtraction is to be performed the "upper" number should be larger than the "lower" number. Third grade should allow addition, subtraction, and multiplication. Third grade subtraction should also use numbers such that the "upper" number is larger than the "lower" number.
- Ask the user if they would like to try another problem, keep track of the number of correct and incorrect answer, and print a summary when they are done.

Save your program in a file called mathTutor.py

Follow the program format and structure described in section 2.6.4 of the text, and be sure to use good style:

- meaningful variable names with good style (i.e., useCamelCase)
- docstring comment at the start of the program
- use constants where appropriate with good style (ALL_CAPS_AND_UNDERSCORES).

Submit your homework electronically at http://www.cs.uni.edu/~schafer/submit/which_course.cgi

The steps for the homework submission system are:

1. Write, debug, and test your program. Save it in a file called mathTutor.py.
2. Log on to the submission system at: http://www.cs.uni.edu/~schafer/submit/which_course.cgi
(It is very likely that you will get some security certificate warnings when trying to use this. You may add an exception and accept the existing security certificate.) Use the same AD-ITS User name and password you use to log on the lab computers.
3. Select the course and section number of "810:051, Intro to Computer, Fienup". Click the "Continue".
4. Select the homework that you wish to submit: "HW 3: Math Tutor". Click the "Continue" button.
5. Specify how many extra files you want to submit. Just leave it at 0. Click the "Continue" button.
6. Upload your program by Browsing and selecting your mathTutor.py file. Click the "Continue" button.
7. The next page reports on the status of the upload(s). You can always continue to upload a better version of the program until the deadline. The newer file will replace an older file of the same name.