

Course 12-746
Python Prototyping for Infrastructure Systems

Fall 2016

Assignment 4 (Total: 8 points)

Due: Tuesday, Oct. 4th, by Blackboard by end of the day. For each day the assignment is late, a penalty of 10% of your total grade will be deducted.

Task 1 (4 point) *GUI design*

Here is a set of records about books for Java programming.

1001,A cup of Java,Kumar,44.14,31
1002,Java for dummies,Tan Ah Teck,34.12,10
1003,Java tutorial,Pine Liu,129.31,100

Follow the example code in the Drawing Management System that we discussed on Tuesday, 09/27, store each line of record as a string into a list of strings **books**.

- a. Write the Python code to create a class for storing the information about books and save this class in a module file called *BookClass.py*. Then write codes in another module file, *BookApp.py*, to create instance of the book class to store the above information. Finally, write code to print all records in the file to the console using this format: (1 point)

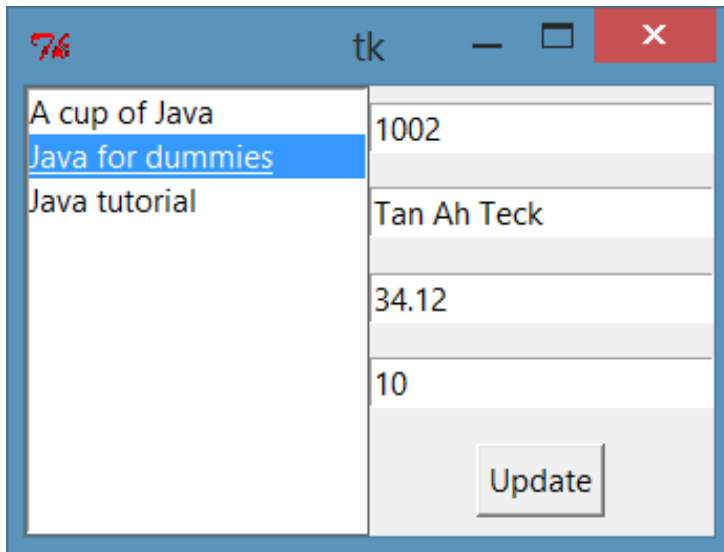
The book with title %A cup of Java% is written by %Kumar%

The book with title %Java for dummies% is written by %Tan Ah Teck%

... ..

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- b. Using the tkinter library to design a GUI as follow in a class called **BookGUI**, which is stored in a module file **BookGUI.py**: There is a listbox on the left, four entry box and one button on the right. Write code in both *BookGUI.py* and *BookApp.py* to add the *title* of each book into the list box. Then implement the event in *BookGUI.py* when user clicks on a record in the list, the detailed information (*number*, *author*, *price* and *pages*) will be shown in the four entry box. (1.5 point for implementing the GUI, 1.5 point for implementing the event to show detailed information)



c. ***(Bonus question – optional but highly recommended)***

Continue adding codes to the answers in Task 1.b, implement the callback for the button to accomplish the update function - when user changes any information in the entry box and then clicks the Update button, the software will save the new information in the memory so that the next time user clicks on this record, the new information will be displayed. If user changes any information for one record, say “Java for dummies”, and then clicks on another record without clicks the Update button, the changes for “Java for dummies” will be discarded. (2 points)

Task 2 (4 point) Calculator

Design a calculator program using Python with Tkinter.

Here is an example of a simple calculator from

<http://codegalaxy.blogspot.com/2011/07/creating-gui-of-simple-calculator.html>



You don't need to create the GUI and calculator in the exact same way as shown in this figure, which is a GUI designed using Java. I just give you a sense of the GUI. The program should also include codes that enable the calculation.

- Create all the GUI components: (1 pt)
- Create events for each number button and show in the textbox: (1 pt)
- Create events for each operator button and conduct the calculation. (2 pts)