Computer Programming Using Kivy 1.9.0 - **IGUI 8** - Model-View-Controller

GOAL: **Create a complete shopping cart simulator using the MVC way of programming.**



To make this program operate like a real shopping cart, there are some things missing: Prices, Subtotal, Tax, and Total. Think about how to solve this problem: to store a total and add to it later, you cannot store it in a Label, because you cannot do math on a label very well (since it is stored as text so it may contain characters other than numbers); You’ll need to make an object for each item using an item class, so that the price can be saved along with the name of the item. The same is true for all of the other data, such as lines in the shopping cart. You need to create variables or objects to store all of the data separately from the GUI. This is why the most effective way that has been used to program is called *Model-View-Controller* (MVC).

MVC is: a way of programming where the *model* (objects and variables), *view* (GUI or other output), and *controller* (gui or other input) are separate:

Normally in MVC we would create:

Model: item class, inventory class (list of all items), shopping cart class (actually this is the checkout system)

View: the GUI (Form, ListBoxes, Buttons, & other widgets)

Controller: addItem, removeItem, initialization, and additional methods for checkout; separate from GUI events

Since this program is only a simulator, we can it simpler by separating MVC only where most important:

Model: inventory *list*, cart *list*, and item class

View: the GUI (a kivy form)

Controller: using only a *form Load* method and the *button event* (although this is not technically MVC since the button event use the GUI framework, kivy, which cannot be separated from the view).

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Computer Programming Using Kivy 1.9.0 - **IGUI 8** - Model-View-Controller (continued)

For our simplified Model-View-Controller experiment, you can start with a pre-made program which has the model. You’ll just need to program the controller, which in this case means modifying the addClick event for adding items:

* Open Geany
* File, Open, Computer, Resources, Classes, Computer Programming, Examples, **igui8cartmvc-needs-lookup.py**
* File, Save As, Computer, your home drive (such as H: or T:\*username*), name it **igui8cartmvc.py**
* **Make changes to the Add button’s event handler so that it looks up price by item number and changes totals:**

