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Controller

Going over Dr. Yang’s Model-Controller-View slideshow I came up with an idea about an implementation of the *Controller* than could be applicable to our project. The function of the controller is, essentially, its namesake. It controls. In the context of our game, the *Controller* is going to control the user input, and, if applicable, the output. The slides suggest there is no direct output in this programming scheme.

So, the controller is, essentially, an intermediary between the actual input and the Model. In the context of our game, the Model would be the classes containing the member functions implementing things like actions, movements, data, and what not.

For example, upon hitting the Up arrow key, the Controller will contain a “Signal Handler” (basically a function) that would call the appropriate member function from the appropriate class at that instant. Similar implementation goes for mouse clicks wherein clicking a button on the game start up screen would call the appropriate function resulting in the desired effects.

I take it that the monsters need not be controlled as they are walking a pre-determined path and do not need the direct control of the user once the game is running.

As discussed in class today, the startup screen is going to contain three buttons: Easy, Medium and Hard. Clicking on either one of them will call the respective member functions. I take it that the levels would differ only through the number of monsters that swarm towards the tower. So, upon clicking the *Easy* button, the corresponding member function would be called that swarms the screen with 3-4 monsters. Consequently, the numbers would be higher for the other levels.

Keyboard implementation:

Depending upon what the group decides what specific keyboard keys we use, we would have member functions devoted to each key stroke. For instance, “d” could be used to deploy towers at specific locations. Now, how exactly the “d” keystroke would cause a tower to appear at a location, pin-pointed previously by a mouse-click? I do not know. This is something the GUI guys would need to help me out with.

Mouse implementation:

This might be a little easier to implement than the keyboard as the internet contains a ton of info about buttons and menu selection. Similar reasoning goes: clicking a button on the screen using a mouse produces the desired effect.

In order to understand the concept of MVC, think of a website- say Amazon.com. What you see on the computer screen is obviously the *View*. The *View* seeks information from or sends information to the *Model*. For instance, clicking “Purchase” or “Add item” (part of the *View*) would be an event that will be handled by the *Controller*. Handling is, essentially, a process wherein an event such as clicking the “Add Item” option results in some change in the *Model*. This change is brought about by the *Controller*. In this case, the controller would just update the Shopping cart method/function/object that belongs to the model. The *Controller* is, in effect, an intermediary, or a medium of information exchange between the *View* (think of it as what the user actually sees on his/her screen) and the *Model* (say, the database).