CS 246 W 2014: Final Project

Due: 05:05, Friday, March 28, 2014

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Project Chosen: Quadris

Questions included in project specification:

1. We can ensure that only these blocks will be generated by using a field in the Block class that determines which of these specific 7 blocks the block is. This makes it more difficult to add other types of blocks if desired, but it definitely prevents improper blocks from being added.

2. We can add a timer field. For any instance created, the timer is zero, and it is increased every time. Once a timer reaches 10, the block is destroyed. A boolean field could determine whether this block is destroyed after these turns, or it could even be an integer field so we can modify how long a block takes to disappear. It would be simple to confine them, since the level could have a field that indicates whether we should check for this timers or not.

3. We could use the Factory Method Design Pattern. In essence, our Level class would have fields indicating what probability each block has to appear, and we would refer to this information to generate the appropriate block.

4. We could implement a Command class instead of using hardwired commands in our program. The advantages are that adding more commands is as simple as creating a new instance of the class, and renaming can simply call a public method that changes the string that activates the command. The system would need to keep an array of all valid commands and iterate through it when a command is issued. The disadvantage is that such a system would require more complex coding, since the Command class is likely to requiore access to private fields on other classes.

We decided to divide the labor as follows:

- `Board` class: This class will be mostly written by Emilio. Sina will do the `move` method, though.
- `Block` class: This class will be implemented by Sina.
- `Level` class: This class will be implemented by Sina
- `TrieNode` class: This class will be implemented by Sina based on the Assignemnt 3 implementation
- `test.cc` : This will be a test program for debugging purposes. It will be written jointly by Sina and Emilio
- `Display` class : This class will be written by Sina and Emilio. We may do one of the two implementations each or colaborate.
- `main.cc` : Emilio and Sina will collaborate for this program, which will be the release version.
- `Command` class : If time permits, Emilio and Sina may add this class and modify `main.cc`, allowing for some of the the advanced command features described in the questions above.
- Extra features : These will be added in a time-permitting fashion in collaboration.

We have agreed upon the following timeline:

- By Friday March 28, Sina and Emilio will have completed the following classes: `Board`, `Block`, `Level`, and `TrieNode`. We will also at least begin work on having a functional `test.cc` to confirm that all classes work as intended.
- By Sunday March 30, Sina and Emilio will get together to work on writing the `Display` class, and writing the necessary changes to `test.cc` to turn it into `main.cc`.
- Between March 31 and the due date, extra features such as the advanced commands will be discussed and implemented.