Unit 6

Enhancements

Objectives for this Unit

At the end of this unit you will have designed and coded some enhancements to Brickles, with an opportunity to explore extensibility and maintainability of an object-oriented program.

Enhancements

- Consider the following potential enhancements to Increment 2:

1. Add scoring based on time
2. Continue play after the brick pile is exhausted, possibly even having multiple levels that comprise more, smaller bricks and/or a faster-moving puck.
3. Add various kinds of bricks—worth different point values if scoring is in effect, and/or having various characteristics such as hardness, size, delayed crumbling, or rebound properties. (A hard brick, for example, might need to be hit several times before it breaks.)
4. Add moving obstacles.
5. Add stationary pieces that change color or other properties.
6. Add ways to get more pucks—for example, a certain score by a certain time, or clearing a row of bricks on a single puck.
7. Add sticky obstacles that hold a puck until hit again, putting multiple pucks in play.

More Enhancements

8. Support “english” on the puck if the paddle has a certain velocity during a collision.

9. Support paddle movement in two dimensions (up-down, left-right, or rotated).

10. Add support for N-way collisions (N>2).

11. Add a “demo” mode to the game in which the computer controls the paddle.

12. Add support for multiple players that take turns.

13. Change the laws of physics—for example, incorporate gravity into the playing field.

14. Use your imagination!

Exercise

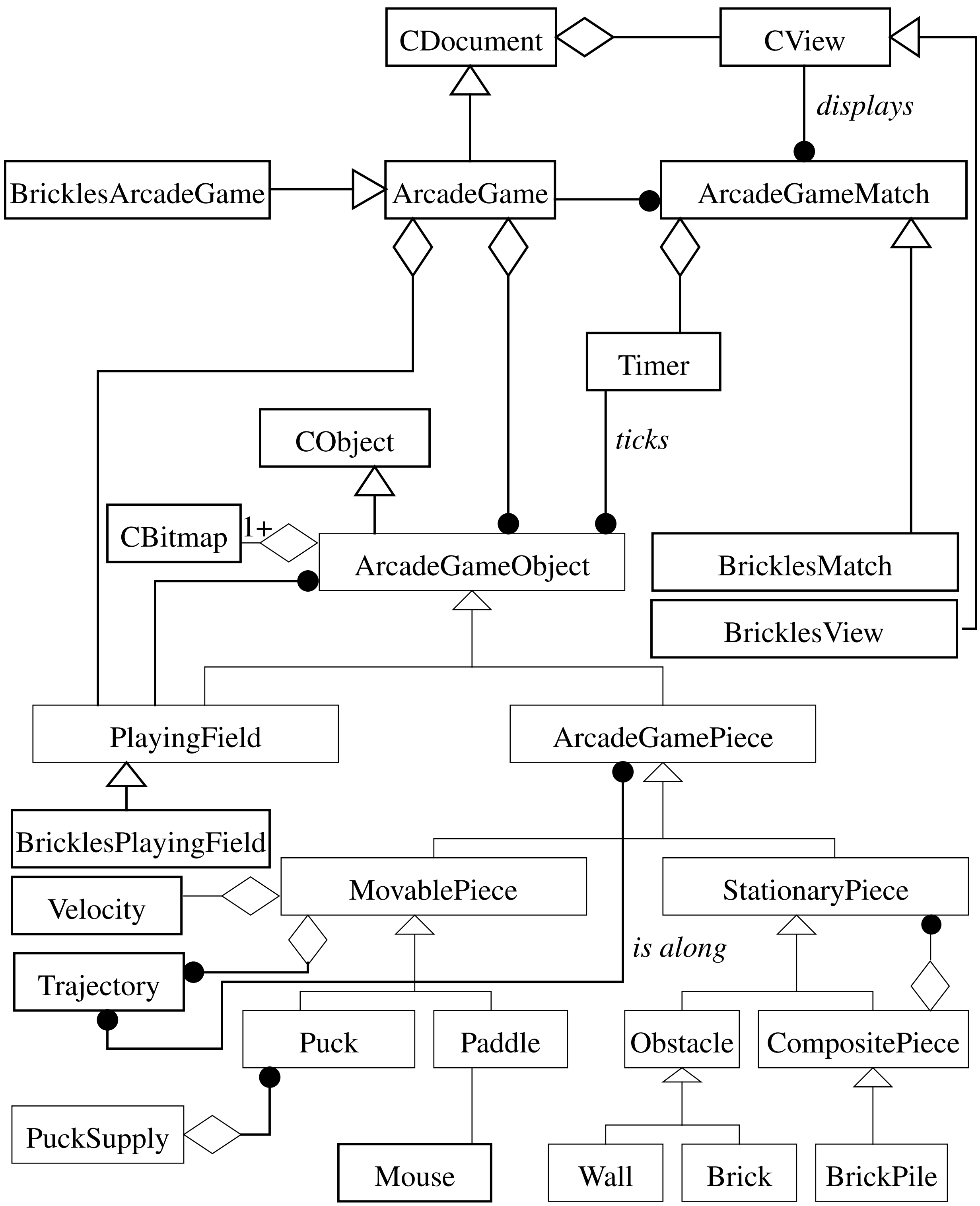
- Select one or more enhancements that you would like to incorporate into your game. Of course, some are easier than others, so set your goals at a level that is reasonable for the time remaining. Try to decide based on what language features each enhancement exercises and what features you would like to investigate further.

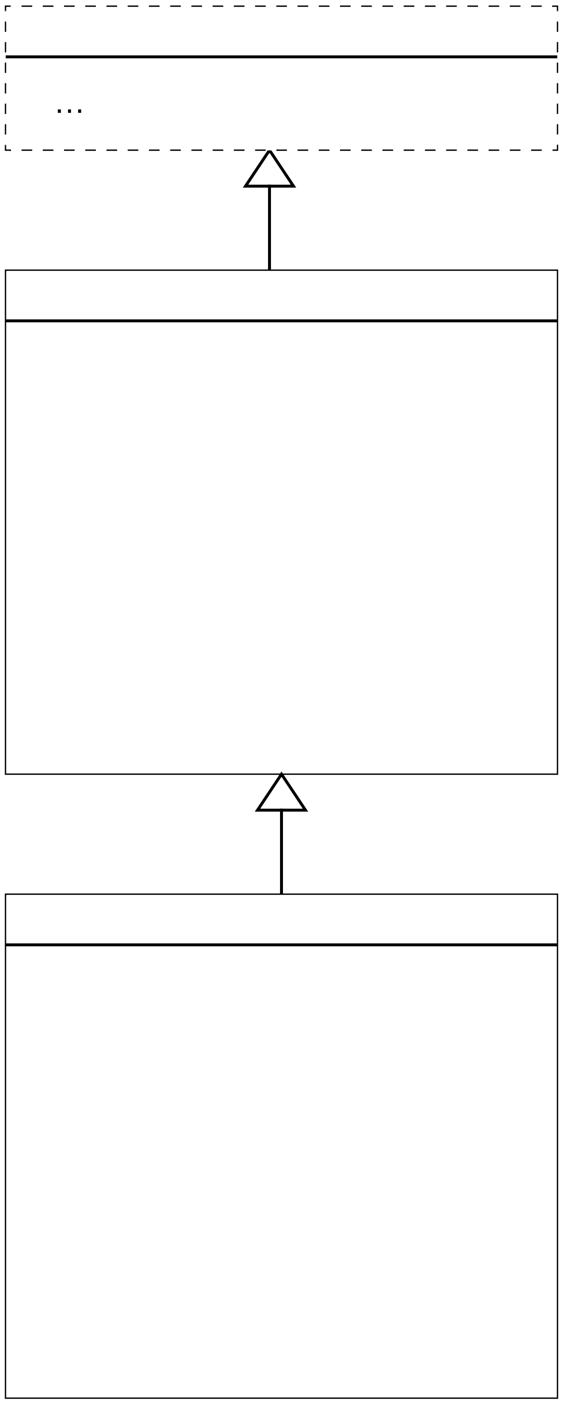
- Use the following pages to sketch out your design and, perhaps, plan for a few iterations to get you to your goal. You might want to back up your work at completion of each iteration so you can "revert back" if necessary.

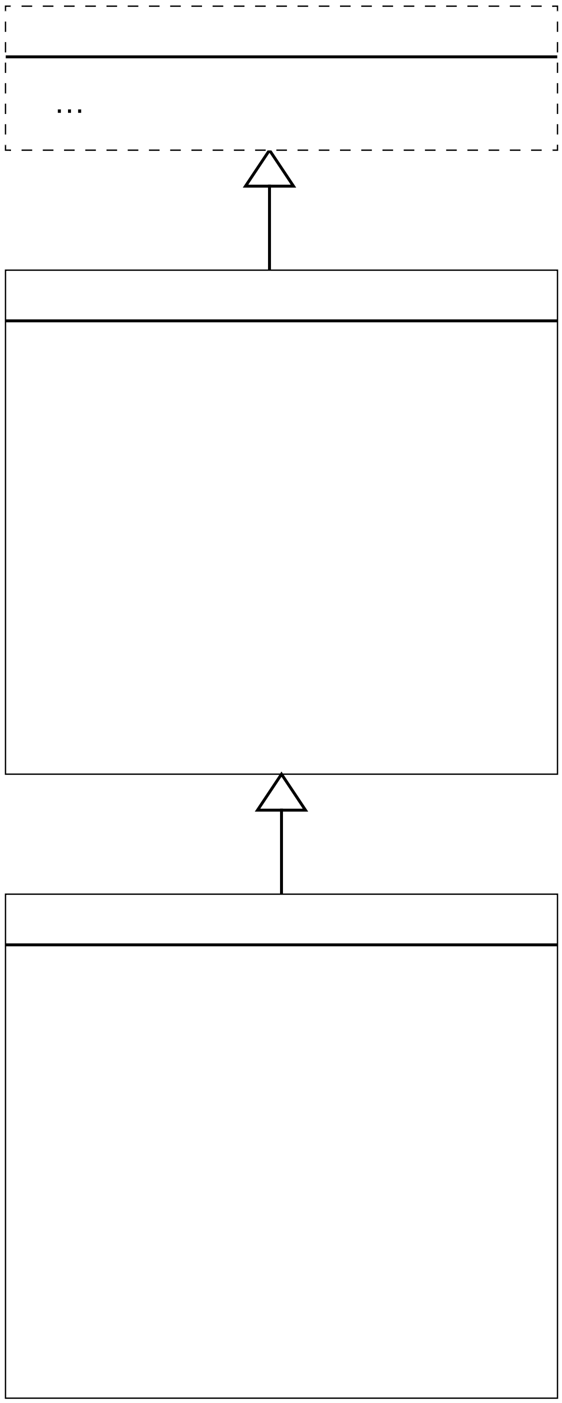
- As you work, record questions and insights that you have to share with the class toward the end of this exercise.

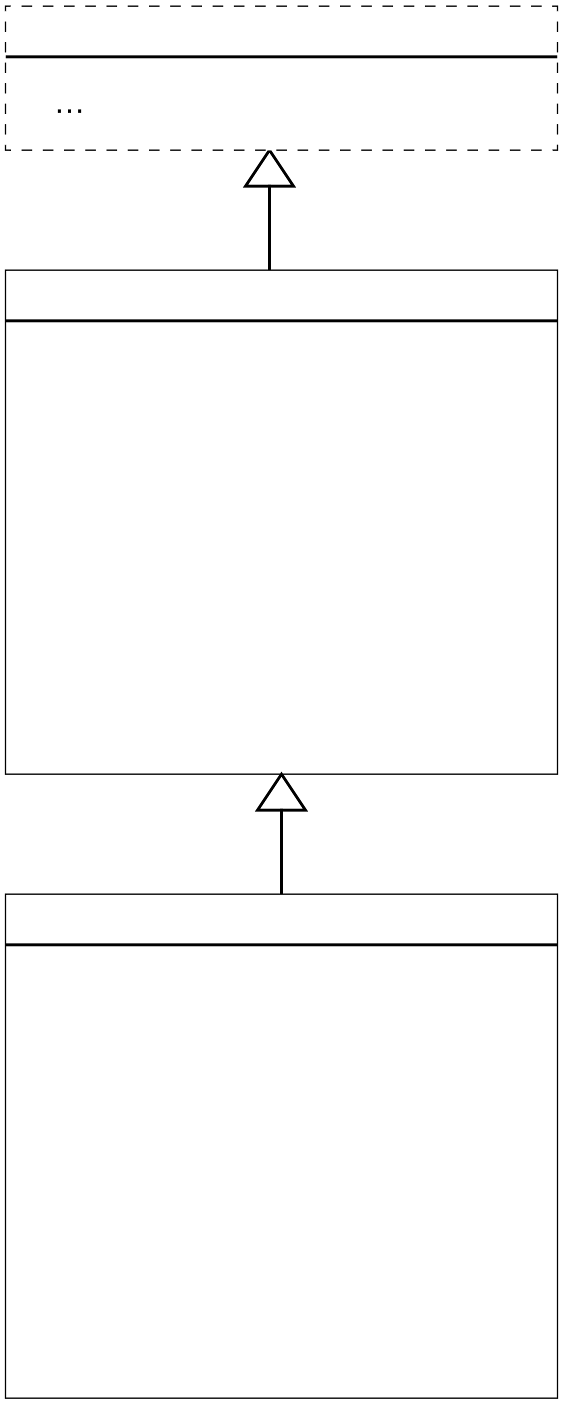
Questions and Insights

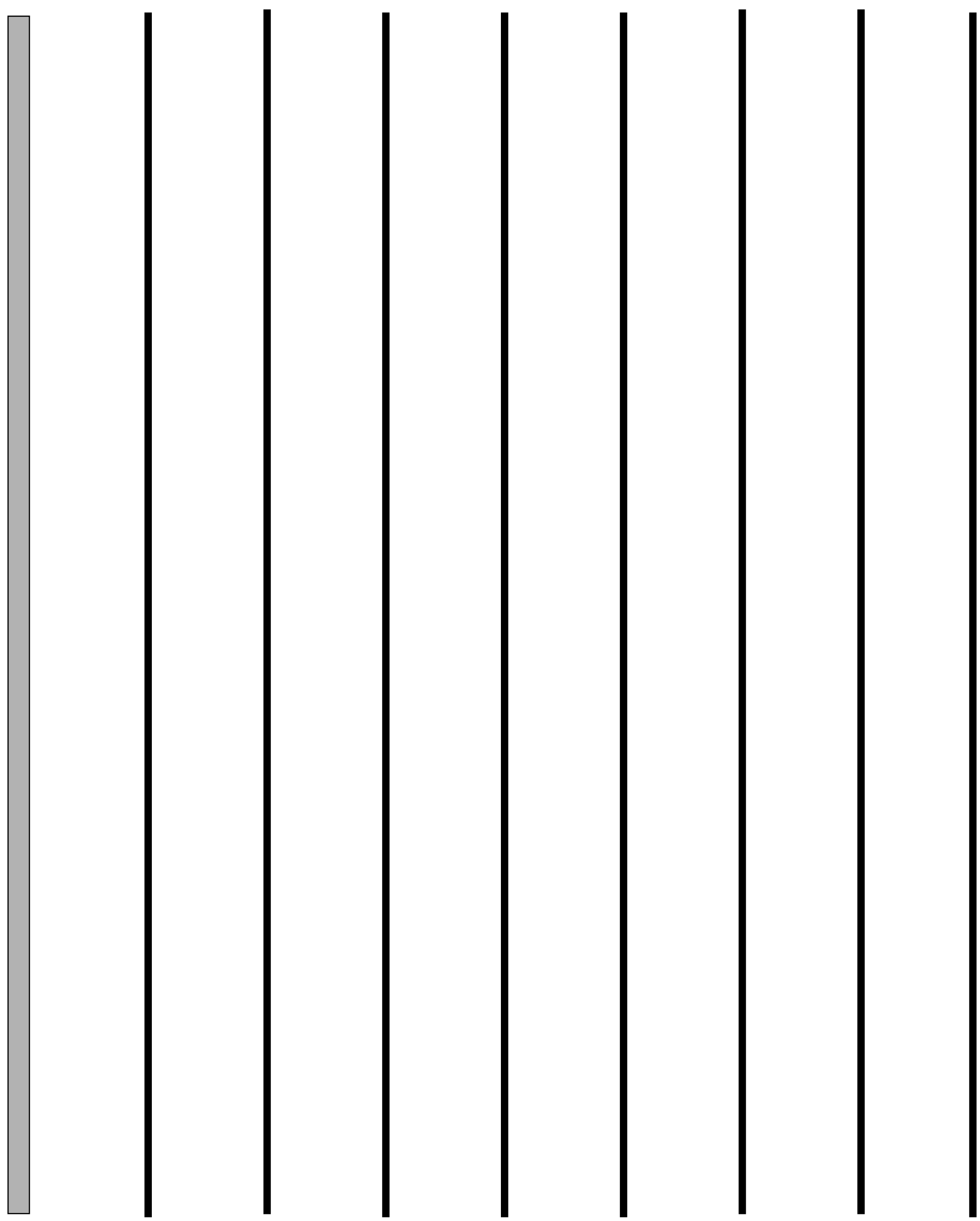
Existing Object Model











Summary

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