

**Carleton University - Department of Systems and Computer Engineering**  
**SYSC-2004 - Object-Oriented Software Development - Winter 2013**

**Assignment 4**

In this assignment we will go through further clean-up of our design and we will finish up the snake game.

**Part 1: Some clean-up**

We notice that classes SpaceInvaderGame and SnakeGame are very similar: their play() method basically repeatedly gets the user input, resolves the new state of the environment (respectively Space and Desert) and determines the end game. We can therefore collapse both classes into a single Game class that can work for both games (as well as new similar games we may want to create, since there is no coupling between Game and any particular subclass of Environment anymore!), provided we make some changes to the Environment, Space and Desert classes. We provide you with the source code of the Game class, your job is to make the changes to the other classes to make everything work as before!

**Part 2: Finishing the Snake Game**

To finish the snake game, you'll have to add the body of the snake. Each time the snake head eats a mouse, a new body segment (represented by an "o") is added to the snake, making it longer. Each snake body segment follows the segment in front of it. The game is lost when the head of the snake runs into a body segment.

	. . . . .		. . . m .		. . . m .
snake about	. o o . .	after	. o o . .	after	. o o . .
to eat a mouse	. v o . .	eating	. o o . .	moving	. o o . .
	. m o . .	(snake is	. v o . .	left	. o > . .
	. . o o .	longer)	. . o o .	(game over!)	. . o . .

**Deliverables**

From within BlueJ, create a JAR file containing your code. When the "Create Jar File" dialog is displayed, make sure you select class Game as the main class and that the "Include Source" and "Include BlueJ Project" checkboxes are both checked!

Submit the resulting Jar file on WebCT.

Due: Wednesday March 27st 2013 at 7pm.