

## VSFX 375 – OpenGL Intro – Tank Game – Exercise 4

**DATE DUE: see class notes**

Hand in through the Dropbox as per the submission guidelines.

Using OpenGL, create a simple tank game (2D really). You may use the template provided in the dropbox or create it in your own style, but you must use OOP.

### Goals:

This assignment will focus on the student being introduced to OpenGL and gaining some familiarity with the general aspects of OpenGL as covered in class.

### Requirements:

Minimum requirements:

- Use C++ OOP
- Modify the tank game template to include graphics output using OpenGL

Suggestions for the steps involved in creating a simple tank game from the template given are listed in the comment section at the top of the file.

1. First achieve movement for the tank using key sequence controls, for example you could have Tank1 driven by asdf keys and Tank2 with the number pad keys.
2. Have the tanks stop when they hit the barriers.
3. Have them shoot (hitting spacebar or a particular numeric key).
4. Any extensions you might want to add (ie. more functionality such as tank dying after being hit once or a number of times (perhaps turning black), other hazards, and so on.
5. Have at least two tanks.

### Grading Guidelines:

You will be graded on how well your game works, how well it is designed and how clearly the code is written.

Be creative, have fun.

Specifically:

/30 Movement of tank with key sequence controls  
30 if moves properly, using two tanks  
20 if moves up and down, forward and back  
10 if moves forward and back (given forward already)  
0 if only moves forward (that was given)

/30 Tanks stop when they hit barriers  
30 if they stop on barriers  
20 if they stop on some barriers  
10 if they react in some way to barriers  
0 if they do not react at all

/20 Shoot  
20 if they shoot in the right direction and bounce  
10 if they shoot, but not in the right direction

0 if they do not shoot at all

/20 Any extensions such as dying tanks, exploding tanks, life points, tanks don't go thru each other etc.

**Considerations:** You are provided with a template to handle the initial setup. We will be going over in class all the details to complete this assignment. In addition to the template, there is also a Space Invaders example in the dropbox to help with the shooting tank aspect.

If for some reason you miss one of the OpenGL lectures please come see me to catch up on information. This should be a fun assignment but you might be a little rusty on velocity vectors. There is also help on the class website under the sunflower.