

First Person Shooter Game

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Abstract

3D game development is an exciting activity for many students. But getting a handle on 3D game development for novices may be a daunting task. We take this opportunity to present a quick introduction to 3D game development through a few tutorials. For the next few columns a set of tutorials for a 3D first person shooter game developed by graduate and undergraduate students under the guidance of a faculty member from the University of West Florida will be presented. These tutorials were developed with **3D game Studio** by *Conitec*. To follow along, download the software from www.conitec.com. These tutorials include all elements of game development such as modeling and animation, lighting, collision detection, sound and scripting. Each tutorial will focus on one or more of these aspects. This week we start out with creating a room and adding some objects to the room. The instructions for this are presented below.

1 CREATING PANELS

Step 1: Create an "Intro Screen"

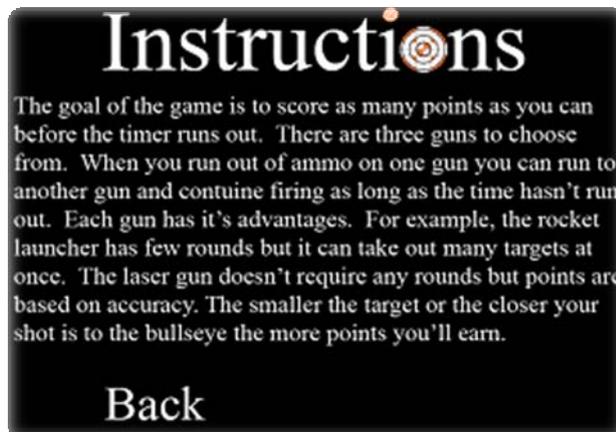
1. Open up a paint program
2. Set the dimensions to 1024x768 pixels
3. Design your intro screen as you feel lead - just remember to add the following:
 - Game's Name
 - Author's Name
 - *Start* Button (we will add a button next to wherever you place it)
 - *Instructions* Button (we will add a button next to wherever you place it)

4. Save as “**introscreen.bmp**” and place it inside the same folder as your c-script file



Step 2: Create an “Instructions” Screen

1. Open up a paint program
2. Set the dimensions to 1024x768 pixels
3. Remember to add the following:
 - *Back* Button (we will add a button next to wherever you place it)
4. Save as “**instructions.bmp**” and place it inside the same folder as your c-script file



Step 3: Create a “Game Over” Screen

1. Open up a paint program
2. Set the dimensions to 1024x768 pixels
3. Remember to add the following:
 - *Quit* Button (we will add a button next to wherever you place it)
 - *Final Score* Button (we will add a final score here later)

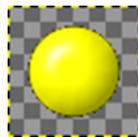
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4. Save as “credits.bmp” and place it inside the same folder as your c-script file



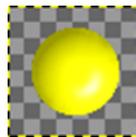
Step 4: Create a Button

We are going to create the illusion of clicking on a button. So create two buttons in this step. The first button will be what the button will look like when we mouse over it. The second button will be what the button will look like when we mouse over it.

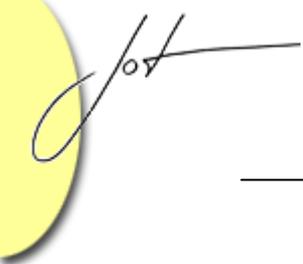
1. Open up a paint program
2. Set the dimensions to 65x65 pixels
3. Design any type of button
4. Save as “**button1.png**” and “**button2.png**,” and place it inside the same folder as your c-script file



while not over
(button1.png)



while over
(button2.png)



Step 5: Create a Score Panel

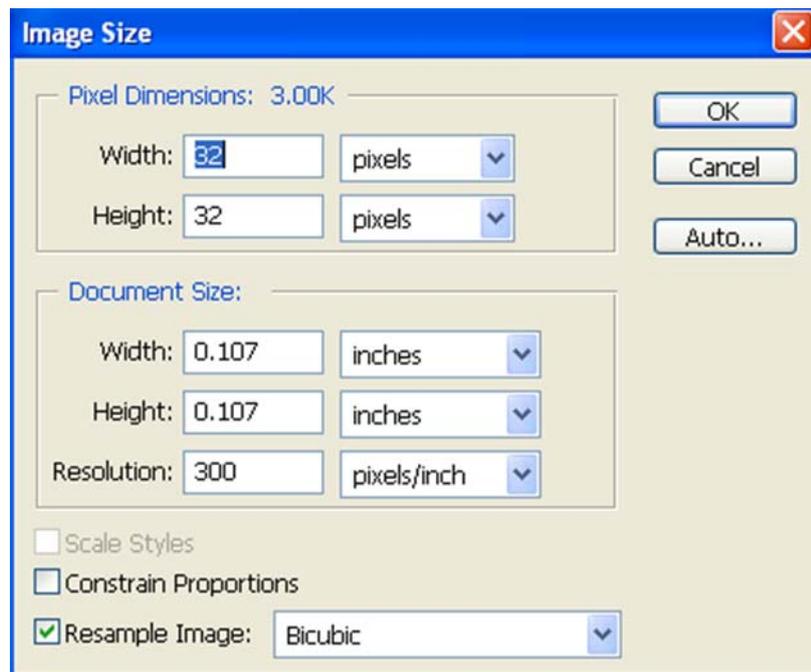
1. Open up a paint program
2. Set the dimensions to a size that fits your scorePanel
3. Remember to add the following:
 - *Score*
 - *Bullets*
 - *Time*
4. Save as **“scorePanel.bmp”** and place it inside the same folder as your c-script file



2 PERSONALIZING A MOUSE CURSOR

Only Step: Create Your Cursor

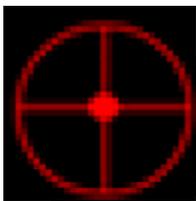
1. Open up a paint program
2. Set your image size to 32x32 pixels



3. Draw an image
- Anything you paint black will be made transparent

Save your picture as mouse.pcx ***Note: Don't use Microsoft Paint to make a .pcx file**

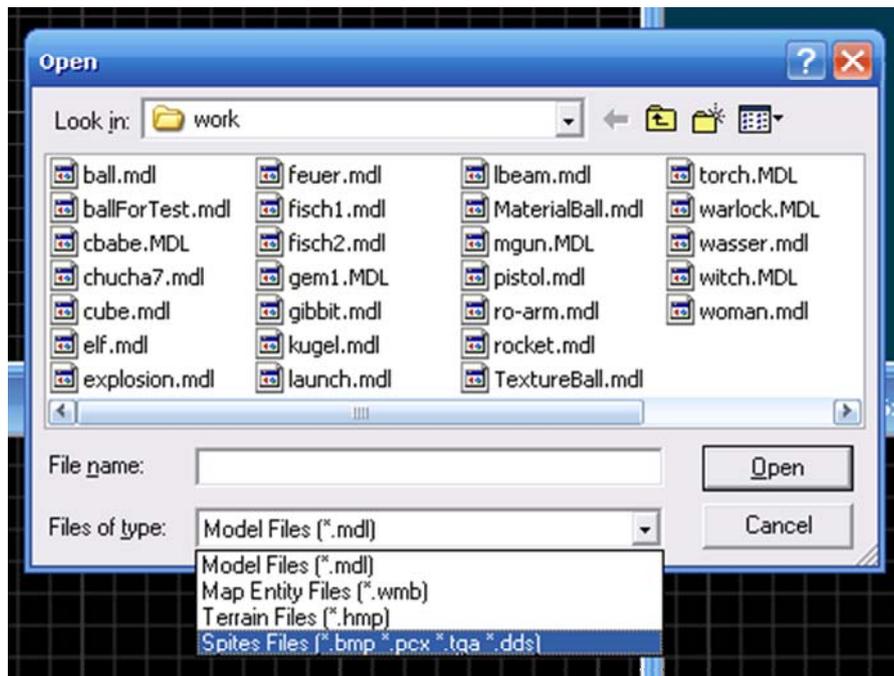
- Here's an example



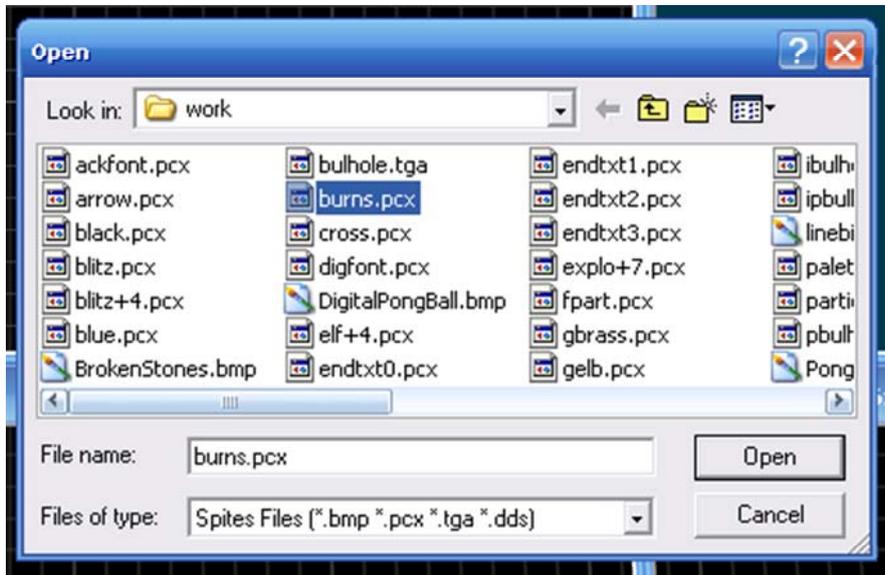
3 IMPORTING SPRITES

Sprites are useful for adding detail without taking up too much rendering time. To add a sprite is very similar to adding an entity but instead of selecting an MDL, select a picture

1. Select **Object -> Load Entity**
2. Change the "Files of type:" combo box to "Sprite Files (*.bmp *.pcx *.tga *.dds)"

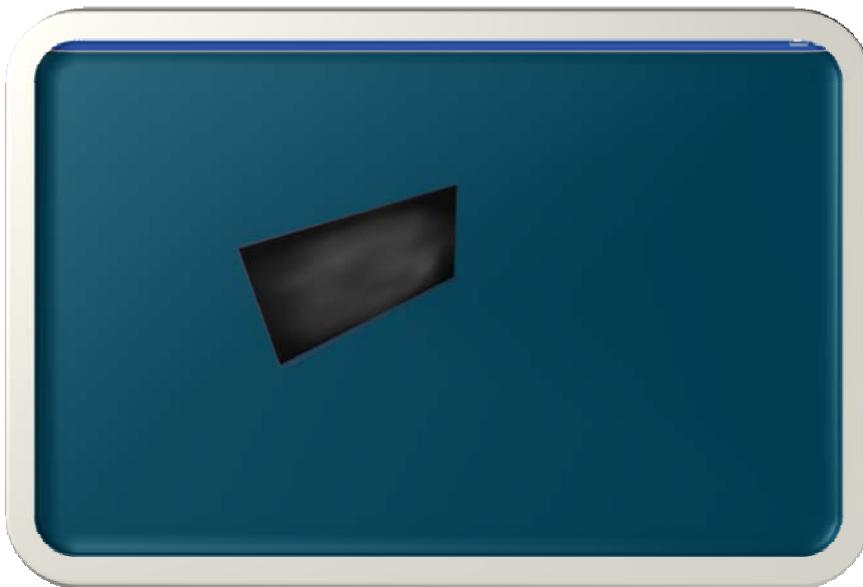


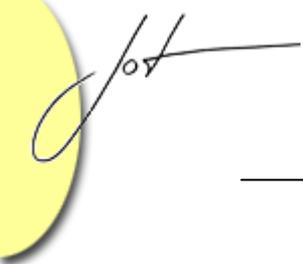
3. Select picture!



A few helpful tips...

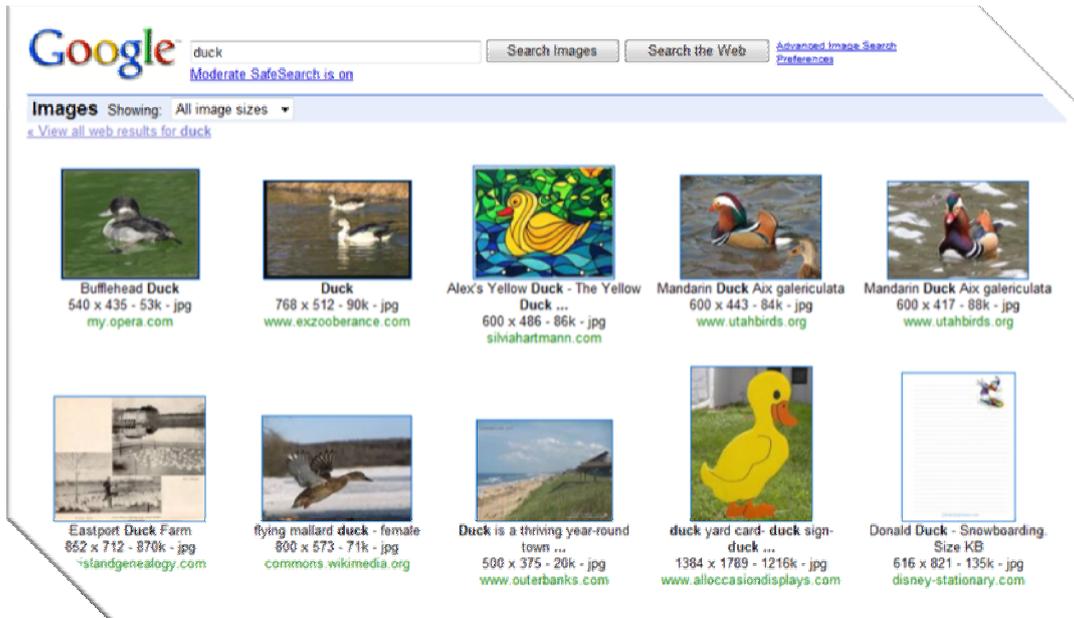
A sprite will always face the camera so you will only have to make sure it is in the correct place when imported. The drawback is that shadows are not rendered. Sprites are good for making smoke, clouds, leaves and other particles. You can move, scale and do other visual manipulations just like other entities





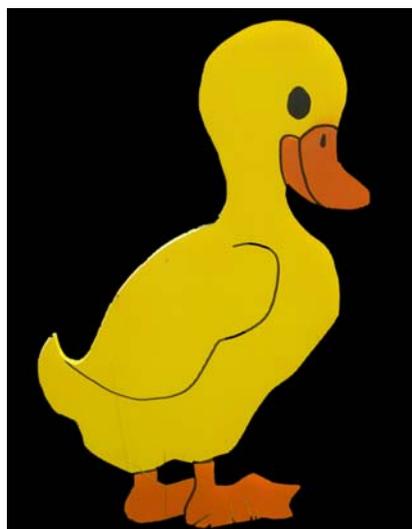
4 CREATING YOUR OWN SPRITES & TARGETS

There are many ways you can personalize your game. One of the easiest is to create your own sprites!

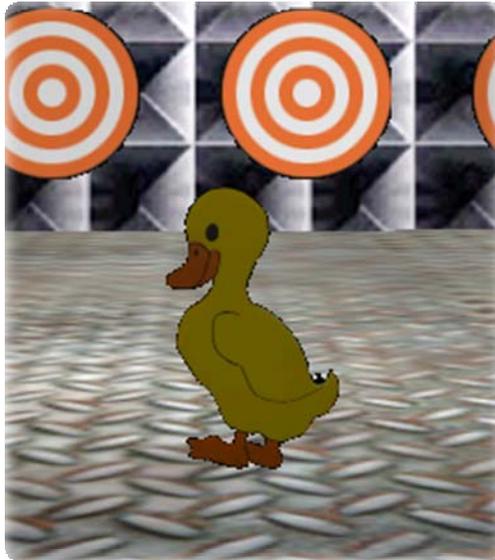


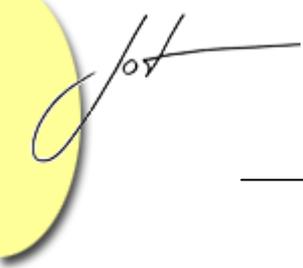
1. Search online for an image you want to make into a target
2. Save your image and open it up into a paint program
3. Be sure to color the entire background black

This is because GameStudio recognizes black as the generic "Transparency Color"



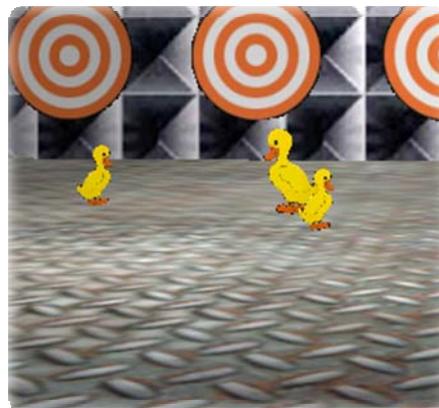
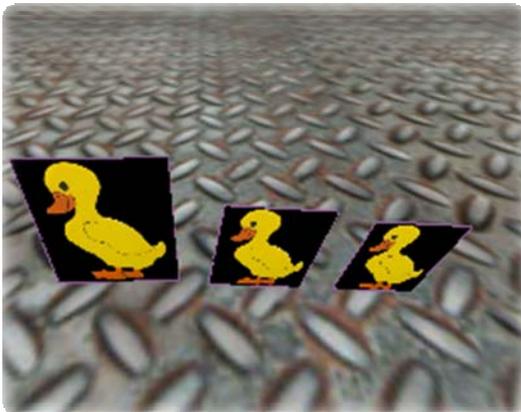
-
4. Save your image as a “.bmp” or “.pcx” ***Note: don't use Microsoft Paint to make a .pcx**
 5. Place your image inside your Work Directory
 6. Open your game in the level editor and import the new target into your game
You may need to resize your target or move it to a new location
 7. Add a target function to your new target and you're all set - shoot away!





Moving Target Function

1. Import the model or sprite into your game
2. Assign your target the **“MovingTarget”** action
3. Personalize your moving target under properties
 - a. Skill 1 = number of points target is worth (Default: 10 points)
 - b. Skill 2 = range target will move left and right (Default: 100 pixels)
 - c. Skill 3 = speed of target (Default: 1 pixel/ sec)
 - d. Skill 4 = number of seconds target is down after hit (Default: 5 sec)
 - e. Skill 5 = axis target will move on (Default: y-axis)
 - i. 0 = y-axis
 - ii. 1 = x-axis
 - iii. 2 = z-axis
 - f. Skill 6 = rotates the sprite 180 degrees after reaching the end of Skill 2's move range (Default: No)
 - i. 0 = No
 - ii. 1 = Yes



Spinning Target Function

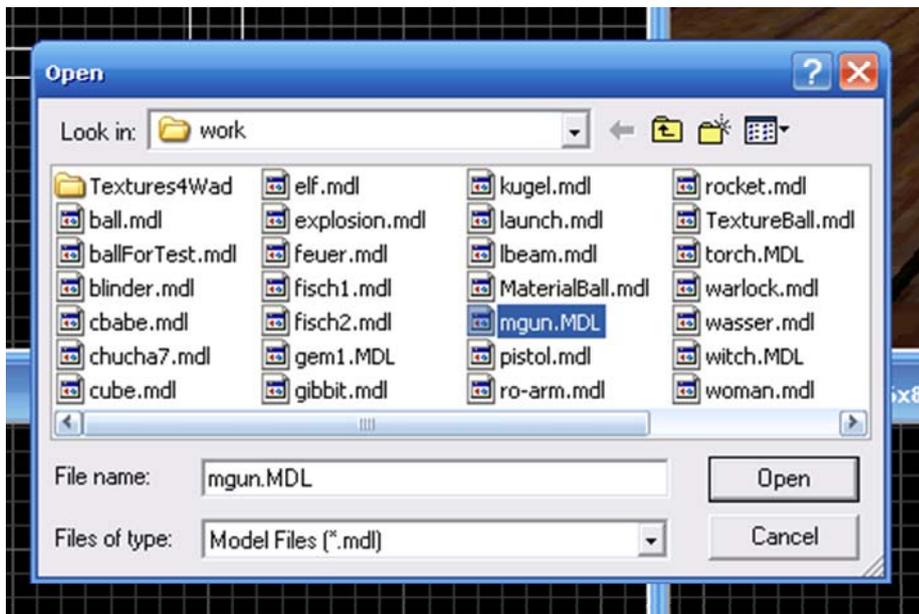
1. Import the model or sprite into your game
2. Assign your target the **“SpinningTarget”** action
3. Personalize your spinning target

Skill 1 = number of points target is worth (Default: 2)

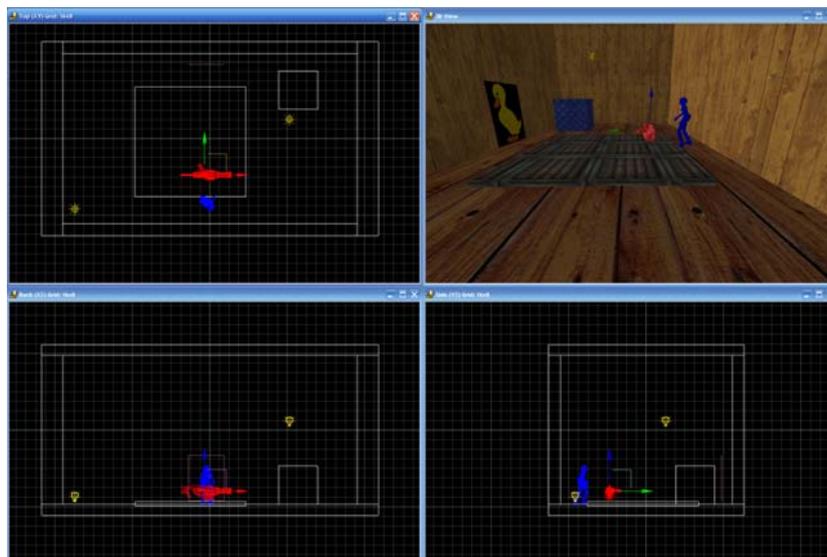
5 IMPORTING A GUN

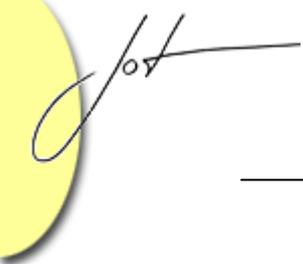
Now we need something to shoot the targets with!

1. Select **Object -> Load Entity**
2. Open **mgun.mdl**, **pistol.mdl**, or **launch.mdl**



3. Reposition the gun where you want it





4. Right-Click the gun and select **Behavior** and select a “weap_...” action that matches how you want your gun to react



5. **Build** and **Run** your game! When you spot your gun in the game, pick it up and Left-Click to shoot. Notice that when you fire at the target, you acquire points!





About the authors

Rex Cason II has been working with Dr. Prayaga in the UWF Game Department for the past few semesters. He currently possesses a Bachelor's degree in Computer Science and is working towards a Master's degree in Software Engineering at the University of West Florida. Rex is also an active member in the Association of Information Technology Professionals (AITP). In addition to his studies, Rex works part time at the Institute for Human and Machine Cognition (IHMC), where he is currently working on developing software to coordinate the actions of semi-autonomous robotic vehicles.

Erik Larson has been working with computers since he had purchased a cheap 386 IBM Compatible in 1995. In 1999, he entered the United States Marine Corps and pursued a specialization in computers. Today he is working towards a Master's degree in Software Engineering with the University of West Florida. He currently possesses Bachelor's degrees in Information Technology and Computer Information Systems with minors in Computer Science, Internet Technologies and e-Business also from the University of West Florida. He is a member of the Phi Kappa Phi, Gamma Beta Phi, and Upsilon Pi Epsilon Honors Societies.

Jonathan Robertson currently works at the Game Design Department in the University of West Florida. He hopes to one day have a career designing entertainment software with an emphasis on the quality and involvement of the story being told through the game.

Jonathan Frisch is working for a degree in Digital Media and studying animation/modeling itself and in games and movies. He hopes to get into the animation/modeling field of game development or movie production. His ultimate future goal is to be an independent film writer/director.

George Trice III is an Honors student double-majoring in Interdisciplinary Information Technology: Digital Media and Art with a Digital Specialization. His minor is in Communication Arts. He's been a gamer since age 5. Favorite game of all time: Super Mario World

Dr. Lakshmi Prayaga has recently completed her ED.d program from the University of West Florida. She has been actively working on the influence of games in education. In partnership with Escambia County in Florida, she was awarded a \$1.5 million grant from the Florida department of education to develop serious games for 7th and 8th graders for mathematics and its relation to real life careers. These games will be implemented during this fall (2007). She is starting a gaming curriculum at the University of West Florida, and some of her students are working on the tutorials for a first person shooter game that will appear in the next few columns.