

Chapman University
CPSC 340 - Spring 2011

Class #6
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Summary

- Quaternions and Gimbol Lock (2-4)
- Shortest path in tile based games (distance)
- Billboards(3-1)

Quaternions

- Sounds complicated, but really very simple.
- There is a Quaternion class in XNA
- It is simply a vector with a rotation.
- You can multiply them together to add rotations together.
- If you tried to make a space ship camera with just angles things would stop working quickly.
- It's call gimbol lock. Read about it in the book in section 2-3 and 2-4.

Shortest path calculations

- What is the best way to calculate shortest path in a tile based game?
- Create a 'visited' boolean for each tile. Set them all to false.
- Start at the current location and search all neighbors recursively.
- Continue until you reach the destination or the cost is $>$ the shortest cost calculated so far.
- Recursion is your friend in calculating shortest path.

Billboards

- In my game Space Protector I have asteroids coming at the earth and have to fend them off.
- I could create models of all the asteroids, but there is a better way.
- Billboards – 2D tiled images that always face the camera. Very inexpensive in CPU terms (2 polys)
- The book outlines this in 3-1.
- I didn't type in the code, I knew it was already written in PGE and re-purposed the code.

Assignment #8

- Team work #1
- Each member of your team says what they are going to complete in the coming week and gets me to approve their work list. Do the work and next week you show me your progress and I give you 100 points for completing what you said you would complete.

Open Time

- Feel free to ask hard questions
- Feel free to work on your home work and ask questions while I'm still here
- Feel free to use this time for your own benefit