My MQP Interests

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Virtutopia: MMO Framework

- What is it?
  - A scalable framework for multiplayer games and virtual reality
  - Ver. 1: MQP with 5 CS majors

- Current features
  - Client/Server & Peer-to-peer hybrid architecture
  - Game-engine agnostic (uses C4 right now)
  - lua scripting
  - Simple behaviors/physics (done in lua)
  - AI engine (being done as an ISP now)

- Tech-heavy MQP
Virtutopia (cont.)

- Benefits of working on this project:
  - Gain DEEEEEEEEP understanding of
    - Sockets, Threads, Shared Memory, C/C++

- Possible topics
  - Mobile clients
  - Anti-cheating through region management
  - Model/terrain importers
  - Make me an offer!

- Multiple Teams Possible
- Terms: A-C/B-D (flexible)
- Team size: 2-3 Tech
- Here are some videos...
Hooping: 3-D Multiplayer, Space Racing Game

- Players maneuver ships through a series of check-point hoops
- Maneuvering in three dimensions
  - Think of 3-D Pod Racing!
- Various obstacles/threats between hoops
  - Mechanical or biological (animals)
- Damage changes ship characteristics
- Terms: A-C/B-D
- Team size: 4-5 (2 Tech, 2 Art, 1 ??)
Natick Soldier Systems Center

☐ Sponsored project

☐ Natick designs and tests most parachute systems for the US military (and Nasa too!)

☐ Mostly cargo chutes, but others as well

☐ Need a tool for visualizing parachute opening
  ■ Various cargo loads/shapes
  ■ Various environmental conditions
  ■ Data collected from simulations & actual drops

☐ Terms: A-C/B-D (flexible)

☐ Team size: 2 Tech (+1 Art)
Civil-War Sub: Alligator Attacks!

- Sponsored project
- Navy & Marine Living History Association
- Continuation of MQP from Fall 2007
  - Very successful!
- Great, hands-on sponsor
- Terms: A-C/B-D (flexible)
- Team size: 4 (2 Tech, 2 Art)
Alligator Attacks! (cont.)

This MQP continues and expands on the work of a previous project to bring to life the story of the Navy's first submarine, Alligator. Unknown only four years ago, today Alligator is the focus of a major research project by the National Oceanic & Atmospheric Administration (NOAA).

The game "Alligator Attacks!" will allow students to command this surprisingly complex Civil War submarine. The prototype of the game was created in the fall of 2007 at WPI, and now we're looking for a team to add special effects, heighten historical accuracy, and deliver a polished, high-level--and fun--game. "Alligator Attacks!" will be played from CD and online, and will be part of NOAA's "Gator-in-a-Box" educational kit for middle schools.
Air Guitar Twiddler

- Like Guitar Hero, but with a different controller
  - More-complex fretting (www.handykey.com)
  - "Air Pick" technology

- Term(s): Flexible
- Team size: 4 (2 Tech [1 w/hardware], 1-2 Art)
Other MQP Ideas

- Anything having to do with input and/or output devices to VR and games
- User studies
Idea Summary

- Virtutopia
- Space Hooping
- Parachute Simulation
- Civil-War Sub
- Air Guitar Twiddler
- You name it!

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