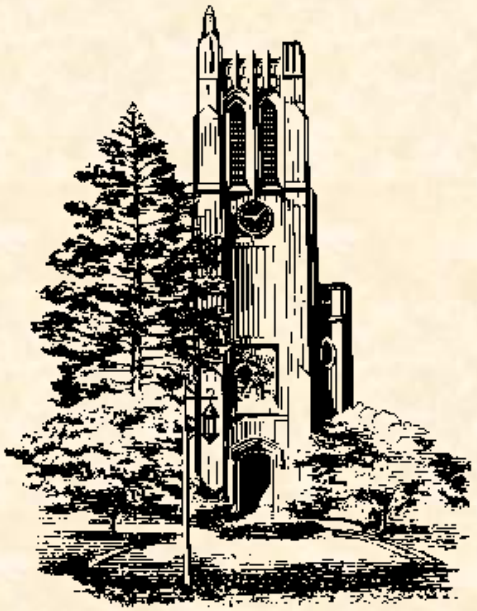
MICHIGAN STATE UNIVERSITY

Project Plan
XML Texture Composition



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CSE 498, Collaborative Design

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Project Overview

- OSG Plug-in
- XML Texture Composition capability
- Add an inset to the terrain at the current resolution set inside of a specified bounding box (run-time)
- Tested in multiple environments

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Functional Specifications

- XML defined Texture Composition
  - Manage multiple textures using XML to label priority, inclusiveness, exclusiveness, geographic location(s), shaders, etc.
  - Use composition to apply multiple textures to geographical locations specified by XML.
  - This feature assumes that all textures will be loaded as SVT image formats.
- Add Inset to Terrain at Runtime
  - Ability to dynamically load and insert an image at a specified location at the current resolution.
  - This feature will depend on the capabilities of the XML Texture Composition feature.
  - All texture images loaded with this feature will not be assuming an SVT image format.

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Design Specifications

- XML Files: priority, shader code, source of texture, location of placement
- OSG Menu
  - Feature 1: Menu option to load XML file
  - Feature 2: Menu option opens dialog box prompting user to input location to place the image and the source of the image.

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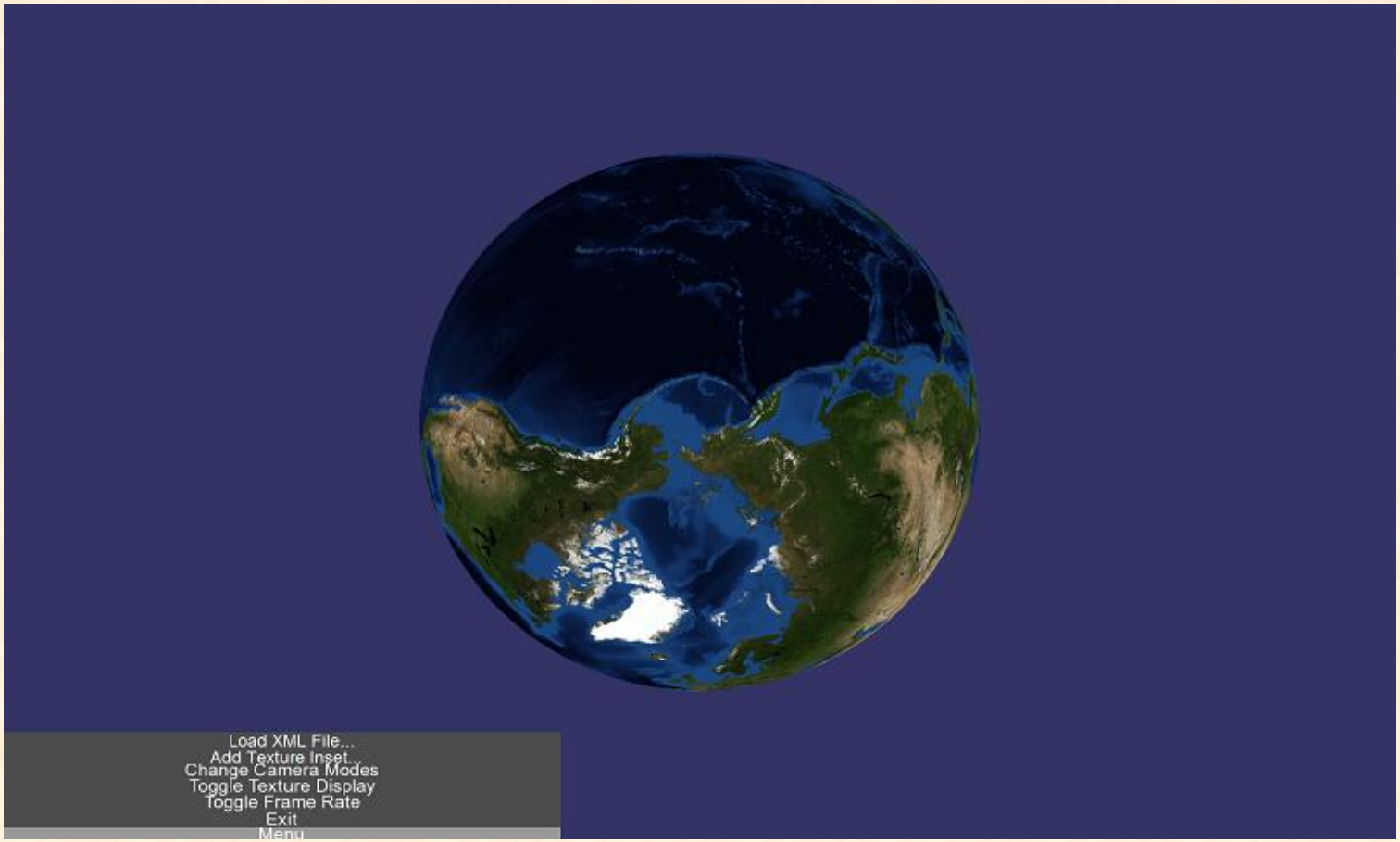
Screen Mockups



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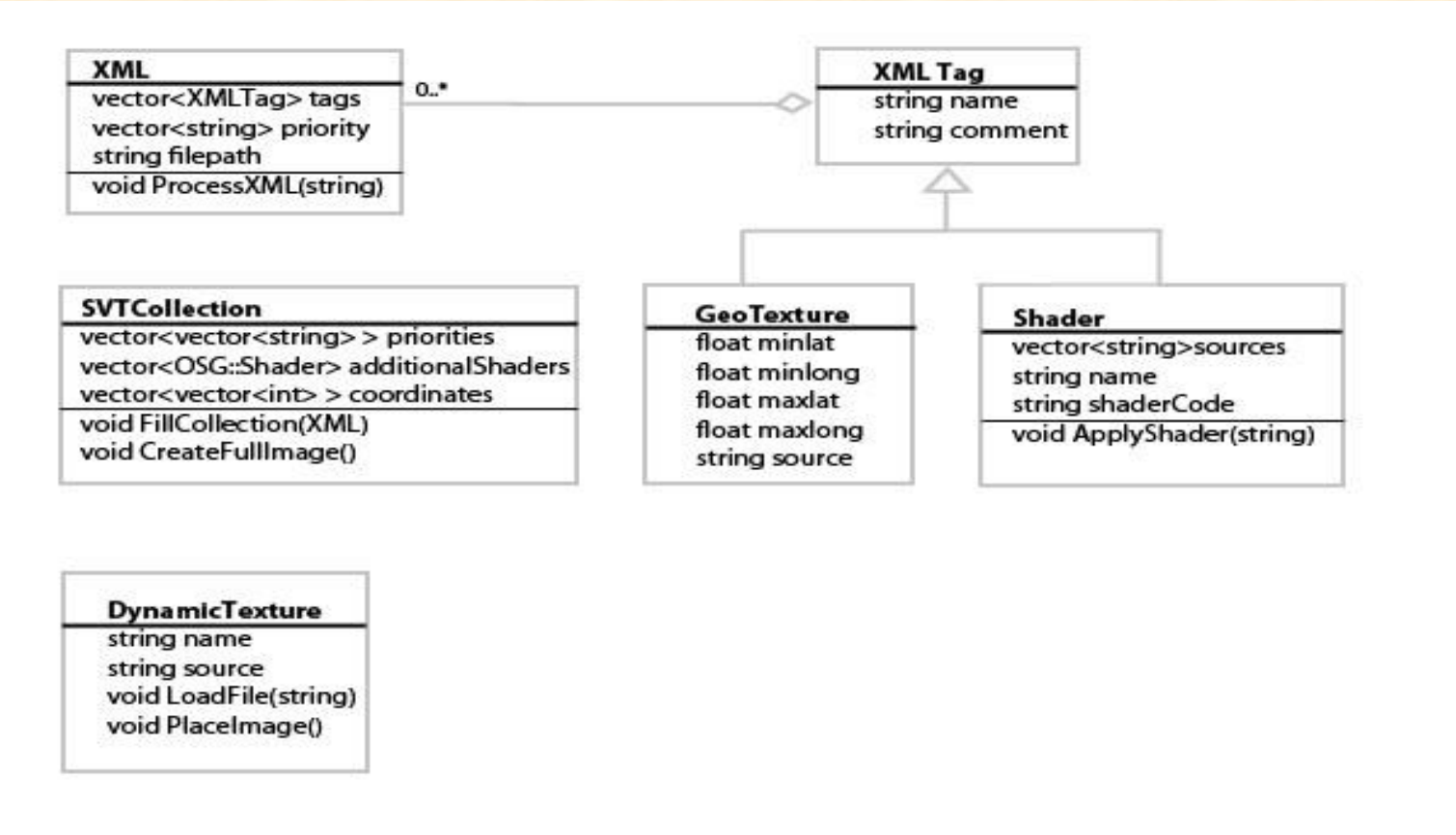
Technical Specifications

- The SVTCollection class will hold information about multiple SVT textures and allow them to be built and loaded when needed.
- The XML class will load an XML file and separate the file into each separate tag. The XML Tag class will act as a base class for all XML tags.
- The BSVT Manager class in the current BSVT Application will also be modified to fit the new design.

Schedule

Architecture Illustrated



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System Components

- Hardware Platforms
  - As many different environments as possible
- Software Platforms / Technologies
  - OSG 2.8.1
  - Visual Studio 2005
  - BSVT 2009 Application
  - OpenGL / GLSL

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Testing

Processor	Graphics Card	Miscellaneous
Quad Core Intel Core i7 920	NVIDIA GeForce 9500 GT Integrated	1 TB hard drive 6GB RAM
Intel core i7 920 quad-core @ 3.8 GHz	Radeon HD 4870 Core: 500 Mhz Memory: 900 MHz 1 GB GDDR5	6 GB RAM 1.8 TB hard drive
AMD Turion 64 X2 dual-core @ 2 GHz	Radeon X1270 Integrated 192 MB of memory	4 GB RAM 200 GB HD space
Intel Core (TM)2 Dual-core @ 2.26GHz	NVIDIA GeForce 9400M Integrated	4 GB RAM
Pentium 4 (Intel) @ 3.2 GHz	Radeon 9800XT 256 MB	2.75 GB RAM
Core 2 Duo (Intel) @ 1.8 GHz	Intel GMA X3100 Integrated	2.00 GB RAM

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Risks

Embedded XML Shaders

- Parsing GLSL code/SVT processing
- Priority-based Texture layering

Menu options for features in OSG and SVT

- How will the menu item be put into the application
- Research last semester's menu items

Caching images from hard disk

- Time wasted saving textures to disk for multiple textures
- Research caching with OSG and SVT

System Requirements/Performance

- Performance rate/hardware restrictions