“Saviour”
a virtual team collaboration platform

BY
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Nilgün Dağ
Outline

- Introduction
  - Project Definition
  - Simulation Scenario
- Project Features
- Technical Features
- Development Status
- Conclusion
Project Definition

Simulation Scenario

to develop a virtual team collaboration platform with following properties:

- 3D computer graphics,
- online,
- audio communication,
- first person viewing.
Introduction

- **Project Definition**
- **Simulation Scenario**

A simulation based on evacuation after a disaster. 3 units assigned to take control of disaster area.
Introduction

Search & Rescue

Firefighter  Medical
Features

- Educating
- Realistic
- Enhanced Scenario
- Interactive & Dynamic Environment
- Easy-to-Use
Features

- Educating
  - not a game; a simulation
- Realistic
  - evaluate ability & civil defense knowledge
- Enhanced Scenario
  - increase situational awareness
- Interactive & Dynamic Environment
- Easy-to-Use
Features

- Educating
- Realistic
- Enhanced Scenario
- Interactive & Dynamic Environment
- Easy-to-Use

- provide valid civil defense rules
- simulate real disaster situations
- give the illusion of real world
- emphasize the criticalness of the situation
Features

- Educating
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Features

- Educating
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- provide dynamic responses according to trainee’s actions
- give active feedback to user according to performance
- every trainee is responsible to each other
# Features

- Educating
- Realistic
- Enhanced Scenario
- Interactive & Dynamic Environment
- Easy-to-Use

- simple & clear user interface
- provide signposts & hints to trainee
Technical Features

• Multithreaded Architecture
  ○ Audio Thread
  ○ Graphics Thread
  ○ Network Thread
  ○ Input Thread
  ○ Game Thread

• Design Patterns Used
Technical Features

- Graphics System
- Audio System
- Network System
- Component System
<table>
<thead>
<tr>
<th>Technical Features</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Graphics System</td>
<td>- Low polygon models used</td>
</tr>
<tr>
<td>Audio System</td>
<td>- Each area rendered on its own</td>
</tr>
<tr>
<td>Network System</td>
<td>- Loading/Unloading of models</td>
</tr>
<tr>
<td>Component System</td>
<td>- Fast and effective rendering</td>
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</tbody>
</table>
Technical Features

- Graphics System
- Audio System
- Network System
- Component System

- Record the trainee’s sound & send to other players
- Play sound files at specific events
- 3D Stereo Sound
Technical Features

- Graphics System
- Audio System
- Network System
- Component System

- Each client gets only relevant data
- Maintain synchronization
- Prevent loss of data
Technical Features

- Graphics System
- Audio System
- Network System
- Component System - Effective code development
  - Object generation from XML files
Design Patterns

- Factory Method
- Singleton
- Façade
- State
- Observer
- Strategy
- Command
- Template
Development Process

- **Tools, resources**
  - **OGRE**: Graphics Library
  - **RakNet**: Network Library
  - **OpenAL**: Audio Library
  - **OIS**: Input Library
  - **CEGUI**: User Interface Library
  - **Ticpp**: XML Parser Library
  - **Boost**: C++ Utility Library
  - **3ds Max**: Modeling Tool
  - **Visual Studio**: Developing IDE

- **Where are we?**

- **What is next?**
Development Process

- **Tools, resources**
- **Where are we?**
- **What is next?**

- Source Code Development
- Resource Production
- Deployment and Testing
Development Process

- Tools, resources
- Where are we?
- What is next?

- Source Code Development
  - Audio System: 60%
  - Config System: 100%
  - Graphics System: 100%
  - Gui System: 80%
  - Input System: 95%
  - Game System: 85%
  - Network System: 90%
  - Object System: 90%
Development Process

- Tools, resources
- Where are we?
- What is next?

- Resource Production
  - 3D Objects Modeling: 75%
  - Animation: 40%
  - Sound Effects: 40%
Development Process

- Tools, resources
- Where are we?
- What is next?

Deployment and Testing
- Documentation: 30%
- Testing: 25%
Development Process

- Tools, resources
- Where are we?
- What is next?
  - Modeling of 3rd Area
  - Testing
  - Documentation
Ending

- Video Demonstration
- Contact Info
- Questions
Ending

- Video Demonstration
- Contact Info
- Questions

- Website: http://senior.ceng.metu.edu.tr/2008/spongesoft/
- e-mail: spongesoft@googlegroups.com
Ending

- Video Demonstration
- Contact Info
- Questions
Thank you!

“GOTTA SAVE ‘EM ALL!”