Literary Worlds Javascript Client

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Background

- ► Literary Worlds is an multiuser text based game used for English education at WMU.
- These games are known as MOOs (Multiuser Object Oriented), or MUDs (Multi User Domains)
- Most of these games provide a telnet interface for playing,
 Literary Worlds uses enCore with MOOTcan, a Java applet.
- ► The aim of this project is to provide a drop-in replacement user interface in Javascript.

Introduction

- LambdaMOO is distributed as a source tarball, deploying it on a new sever entails compiling it, and running it using the enCore database.
- enCore is an graphical interface and MUD database package that works with a LambdaMOO server to provide a browser based text client as well as a graphical, mouse driven interface.
- The Java applet is the text interface, it makes a telnet to LambdaMOO, as though the user were using a command line telnet client.

enCore Xpress interface



Fall
Apart</i>, [SL] to Shakespeare Learning Library, [1984]
(Thoughtcrime)] to

(Inoughteriae); to <i⇒1984(√1>, [PP] to Pied Piper Courtyard Entrance, [BW] to <i⇒Native Son</i>
- Bioger's World. [HW] to Midsummer Madness. [TOS] to Taming of the

Shrew,
[DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Imnutable Hill,
[ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit

|IILY| to <1>An Island Like You</1>, [F451] to <1>Fahrenheit 451</1>, [GM] to "Glass Menagerie" The Wingfield Apartment, [ASP] to Middangeard

Anglo-Saxon
Mead-Hall, [AIA] to Angels in America, [WIG] to Wild Irish Girl,
[GG] to
<i>The Great Gatsbv</i>, [SB] to Shelter Bay, [CD] to Charles

London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTE] to <i>Lord of the Flies</i>, [#62] to General Prologue·-Tabard Inn Cheapside, [#62] to <i>Months of the Flies</i>, [#62] to Moll's World, [#62] to Moll's World, [#62] to

MESSAGE OF THE DAY: Lord, what fools these mortals be!

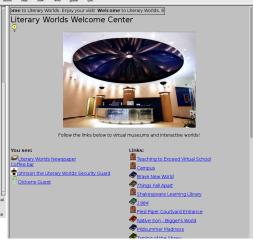
La Mancha

#\$#mcp version: 2.1 to: 2.1 Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest! Name Connected Idle time Location

Dickens Guest (#169) 29 seconds O seconds Literary Worlds Melcose Center DrHsughey (#713) an hour an hour Dr. Haughey's Gffice Wesheaghey (#5526) a day a day Mrs. Haughey's

Total: 3 persons, 1 of whom has been active recently.

say	⊙n
	6
	Ce



Client-Server Design

- ▶ It is not possible to initiate a raw TCP connection in clientside Javascript, unlike Java applets.
- Therefore, we need an intermediary server to connect over TCP, as well as to the browser client, and send data back and forth between the two.
- This server must also support multiple concurrent users and handle asynchronous tasks and events.

Client-Server Diagram

Client Technology

- Socket.io
 - Allows realtime communication between a server program and browser clients.
- Backbone
 - Backbone is a templating library for Javascript web applications
- Bootstrap
 - Bootstrap is a frontend layout toolkit
- Coffeescript
 - Coffeescript is a simple language that translates to Javascript

Server Technology

► Node.js

- ▶ Node.js is a server side runtime that uses the asynchronous features of Javascript to build web application servers. It provides a rich set of networking libraries, and uses the Google Chrome Javascript engine, V8.
- ▶ It is the first class citizen for socket.io, so it was natural to choose it for the server.

Express

Express is a web app framework for Node.js

Stories

- ► Text Mode
 - Text
- ► Graphical Mode
 - ► Serving enCore GUI

Continuous Integration

Purpose

- Continuous integration aims to merge code from a developer's working copy many times a day into a shared mainline.
- ▶ Before any code is merged a, build server runs unit tests on the code, and if passed will be merged into the mainline.f
- ► This helps to improve the quality of the software and reduce the time to deliver it.
- The end goal of this process is to be able to automatically build and deploy the software whenever all of the tests are passing
- Tools

Jenkins

- Pros:
 - Widely used and documented
 - open sourced
 - Wide range of support for different systems
 - Can be extended with plugins
 - Github integration
- ► Cons:
 - Manual setup required
 - Have to get a server to run Jenkins

Unit Testing

- Framework
- Matching Tools

Security

- Telnet is plain text TCP, so it is inherently insecure to eavesdropping.
- ▶ In the future, the telnet server can be protected from external network using containerization such as docker
- ► This way only the Node.js server can connect via telnet, and user data can be protected with SSL in transport.