

Literary Worlds Javascript Client

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December 1, 2014

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Terms and Definitions

- ▶ MUD - A generic term for a networked, shared virtual environment
- ▶ Server - The MUD "world". A network service which implements the MUD's shared space
- ▶ Client - A program used to connect to a MUD server.
- ▶ Java applet - A small application which is written in Java and can be executed in a web browser
- ▶ Telnet - A network protocol used on the Internet or local area networks to provide an interactive text-oriented communication

Background

- ▶ Literary Worlds is an MUD used for English education at grade schools
- ▶ These games are known as MOOs (Multiuser Object Oriented), or MUDs (Multi User Domains)
- ▶ Many comparable MUDs are text only, and users connect using a telnet client
- ▶ Literary Worlds uses enCore Xpress which allows the user to browse by clicking links, or by text.
- ▶ The aim of this project is to provide a drop-in replacement user interface in Javascript

Client

- ▶ Client: Allen Webb
- ▶ Professor of Comparative Literature and Postcolonial Studies at Western Michigan University's Department of English
- ▶ In 2003, Robert Rozema, a PhD student under Allen Webb created the prototype Literary World
- ▶ The Literary Worlds project was one of seven projects to receive funding from the Western Michigan University President's Innovation Fund

Literary Worlds

What is a literary world?

- ▶ A computer based simulated environment interpreting a literary source text

enCoreXpress/4.0 (Literary Worlds) - Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress...Client/vertical_layout

about help look who guide quit

<thoughts>#267_10
<i>1984</i>, [PP] to Pied Piper Courtyard Entrance, [BW] to
<i>Native Son</i>
- Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the
Shrew,
[DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The
Immutable Hill,
[L] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit
451</i>, [IGM] to
"Glass Menagerie" The Wingfield Apartment, [ASP] to Middangeard
Anglo-Saxon
Head-Hall, [ATA] to Angels in America, [WIG] to Wild Irish Girl,
[OG] to
<i>The Great Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles
Dickens -
London Bridge, [TI] to Virtual Tempest, [MM] to <i>Of Mice and
Men</i>, [LOTF]
to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn
Cheapside,
[#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to
La Mancha

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

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

Dickens_Guest (#169) a minute 0 seconds Literary Worlds
Welcome Center

Total: 1 person, who has been active recently.
You move to <i>The Great Gatsby</i>. You view <i>The Great Gatsby</i>...
Obvious exits: [To_Gatsby_s_American_Dream] to Gatsby's American Dream
[To_Kite_s_Place] to <i>Number the Stars</i>, [#4196] to Literary Worlds
Welcome Center

normal
say
emote

The Great Gatsby

Welcome to the staging center for the virtual world based on F. Scott Fitzgerald's "The Great Gatsby".

To explore this world, click on the links below. To learn more about this world, visit <http://www.literaryworlds.wmich.edu/gatsby/index.htm> or email the creator at dykema.meghan@gmail.com.

You see:

- Dickens Guest (idle 1h)

Links:

- ↳ Gatsby's American Dream
- ↳ Number the Stars
- ↳ Literary Worlds Welcome Center

Literary Worlds

- ▶ Within these worlds, users can:
 - ▶ Interact with characters
 - ▶ Manipulate and interact with object
 - ▶ Explore virtual environments

Example

Login (Literary Worlds) – Mozilla Firefox

brn227.brown.wmich.edu:7000

enCore Xpress 4.0

Copyright (C) 1997-2004
enCore Open Source
Project. All Rights Reserved

This program is Free
Software and comes
WITHOUT ANY WARRANTY!

User ID Guest
Password
Log in

System Requirements
Telnet Browse

WC XHTML 5.0 ✓

Literary Worlds

Portal

To visit login as "guest." For worlds requiring passwords contact
the literary world designer listed in the [index](#).
Pop-up blockers should be turned off and firewalls opened.
[Who is currently online?](#)

00030297

Example

Login (Literary Worlds) – Mozilla Firefox

brn227.brown.wmich.edu:7000

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Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout



about help look who guide quit

```
*** Connected ***
Literary Worlds Welcome Center
You view Literary Worlds Welcome Center...

You see couch, table, chair, and <chair>.
You see Literary Worlds Newspaper, Coffee bar, and Johnson the
Literary Worlds
Security Guard.
Obvious exits: {To_Teaching_to_Exceed} to Teaching to Exceed Virtual
School,
[north] to Campus, [BNW] to Brave New World, [TFA] to <i>Things
Fall
Apart</i>, [SL] to Shakespeare Learning Library, [1984
(Thoughtcrime)] to
<i>1984</i>, [PP] to Pied Piper Courtyard Entrance, [BWL] to
<i>Native Son</i>
- Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the
Shrew,
[DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The
Immutable Hill,
[ILY] to <i>An Island Like You</i>, [F45l] to <i>Fahrenheit
451</i>, [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 Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles
Dickens -
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Men</i>, [LOTF]
to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn
Cheapside,
[#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to
La Mancha
-----
MESSAGE OF THE DAY: Lord, what fools these mortals be!
-----
##mcp version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens Guest!
```

go bnw

normal
 say
 emote

To Literary Worlds. Enjoy your visit! **Welcome** to Literary Worlds. Enjoy!

Literary Worlds Welcome Center



Follow the links below to virtual museums and interactive worlds!

You see:

-  [Literary Worlds Newspaper](#)
-  [Coffee bar](#)
-  [Johnson the Literary Worlds](#)
-  [Security Guard](#)
-  [Dickens Guest](#)

Links:

-  [Teaching to Exceed Virtual School](#)
-  [Campus](#)
-  [Brave New World](#)
-  [Things Fall Apart](#)
-  [Shakespeare Learning Library](#)
-  [1984](#)
-  [Pied Piper Courtyard Entrance](#)

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

TEXTUI

*** Connected ***
Literary Worlds Welcome Center
You view Literary Worlds Welcome Center...

You see couch, table, chair, and <chair>. You see lamp, news paper, coffee bar, and Johnson the Security Guard. Obvious exits: [To_Teaching_to_Exceed] to Teaching to Exceed Virtual School, [north] to Campus, [BNW] to Brave New World, [TFA] to <i>Things Fall Apart</i>, [SL] to Shakespeare Learning Library, [1984 (Thoughtcrime)] to <i>1984</i>, [PP] to Pied Piper Courtyard Entrance, [BWL] to <i>Native Son</i>, - Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the Shrew, [DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Immobile Hill, [ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit 451</i>, [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 Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens - London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF] to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn Cheapside, [#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La Mancha
.....
MESSAGE OF THE DAY: Lord, what fools these mortals be!
.....
##mcg version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens Guest!"

go bnw

normal
 say
 emote

GRAPHICAL UI

To Literary Worlds. Enjoy your visit! **Welcome** to Literary Worlds. Enjoy!

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-  [Brave New World](#)
-  [Things Fall Apart](#)
-  [Shakespeare Learning Library](#)
-  [1984](#)
-  [Pied Piper Courtyard Entrance](#)

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

about help look who guide quit

*** Connected ***
Literary Worlds Welcome Center
You view L

You see co
You see Li
Literary Wo
Security G
Obvious ex:
School,
[north] to
Fall
Apart</i>
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<i>1984</i>
<i>Native S
- Bigger's
Shrew,
[DL] to M
Immutable I
[ILY] to -
45!</i>, [
"Glass Men
Anglo-Saxon
Mead-Hall
[GG] to
<i>The Great Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles
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#\$#mcp version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens Guest!"

go bmw

normal
say
emote

Links:

- [Teaching to Exceed Virtual School](#)
- [Campus](#)
- [Brave New World](#)
- [Things Fall Apart](#)
- [Shakespeare Learning Library](#)
- [1984](#)
- [Pied Piper Courtyard Entrance](#)

To Literary Worlds. Enjoy your visit! **Welcome** to Literary Worlds. Enjoy!

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- [Dickens Guest](#)

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bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

about help look who guide quit

*** Connected ***
Literary Worlds Welcome Center
You view Literary Worlds Welcome Center...

You see couch, tab
You see Literary W
Literary Worlds
Security Guard
Obvious exits: [To
School,
[north] to Campus
Fall
Apart</i>, [SL] to
(Thoughtcrime) to
<i>1984</i>, [PP]
<i>Native Son</i>
- Bigger's World,
Shrew,
[DL] to Mrs. Dall
Immutable Hill,
[ILY] to <i>An Is
45!</i>, [GM] to
"Glass Menagerie" The Wingfield Apartment, [ASP] to Middangeard
Anglo-Saxon
Mead-Hall, [AIA] to Angels in America, [WIG] to Wild Irish Girl,
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You see:
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[Dickens Guest](#)

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[Campus](#)
[Brave New World](#)
[Things Fall Apart](#)
[Shakespeare Learning Library](#)
[1984](#)
[Pied Piper Courtyard Entrance](#)

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

about **help** **look** **who** **guide** **quit**

```
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You view Literary Worlds Welcome Center...
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    Security Guard
Options候選: [Tw_Teaching_to_Exceed] to Teaching to Exceed Virtual
School.
[North] to Campus. [EDM] to Brave New World. [TF4] to <x>Things
Fall.
[Parts] to [SL] to Shakespeare Learning Library. [1994]
[Thoughts] to
    -1-1994/xm. [PPI] to Pied Piper Courtyard Entrance. [BW] to
    <relative_Song>
    - Easier's World. [HM] to Midsummer Madness.. [TOS] to Taming of the
Shrew.
    [EL] to Mrs. Galloway's London. [ID] to -id-Democracy-is - The
Immobility Hill.
    [ILv] to -island Island Like Relevancy. [P45] to -i-Fahrenheit
451osis. [SM] to
    "Glass Menagerie" The Wingfield Apartment. [ASB] to Hiddangeard
Anglo-Saxon
Dead-Hall. [XIA] to Angels in America. [WIG] to Wild Irish Girl.
[DS] to
    -i-The Great Gatsby-ix. [DB] to Shelter Bay. [CD] to Charles
Dickens -
London Bridge. [T] to Virtual Tempest. [HM] to -knott Rice and
Menin. [LTTF]
to -iLord of the Flies-ix. [AGC] to General Prologue--Tabard Inn
Cheapise.
[ecod] to -indumber the Stars-ix. [ewod] to Hell's World.. [ewod] to
La Ranch
```

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

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-  [Campus](#)
-  [Brave New World](#)
-  [Things Fall Apart](#)
-  [Shakespeare Learning Library](#)
-  [1984](#)
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MESSAGE OF THE DAY: Lord, what fools these mortals be!

##mcp version: 2.1 to:
Johnson the Literary Worlds Security Guard says, "Hi Dickens Guest!"

go bnw

Follow the links below to virtual museums and interactive worlds!

You see:

- Literary Worlds Newspaper
- Coffee bar
- Johnson the Literary Worlds Security Guard
- Dickens Guest

Links:

- Teaching to Exceed Virtual School
- Campus
- Brave New World
- Things Fall Apart
- Shakespeare Learning Library
- 1984
- Pied Piper Courtyard Entrance

normal say emote

normal say emote

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout



about help look who guide quit

Literary Worlds
Security Guard.
Obvious exits: [To_Teaching_to_Exceed] to Teaching to Exceed Virtual School,
[north] to Campus, [BNW] to Brave New World, [TFA] to <i>Things Fall Apart</i>, [SL] to Shakespeare Learning Library, [1984 (Thoughtcrime)] to <i>1984</i>, [PP] to Pied Piper Courtyard Entrance, [BW] to <i>Native Son</i> - Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the Shrew, [DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Immutable Hill, [ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit 451</i>, [GM] to "Glass Menagerie" The Wingfield Apartment, [ASP] to Middangeard Anglo-Saxon Head-Hall, [AIA] to Angels in America, [WIG] to Wild Irish Girl, [GG] to <i>The Great Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens - London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF] to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn Cheapside, [#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La Mancha

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

##ncp version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest!
You view Brave New World...

Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning,
[south] to Literary Worlds Welcome Center
You feel that you are entering a brave new world.
Never put off to tomorrow the fun you can have today.

go in normal say emote

Brave New World
Brave New World

Brave New World is a futuristic novel written by Aldous Huxley in 1932. A visionary of sorts, Huxley believed that the rapid increase of technology and industry would ultimately undermine the social fabric of civilization. He foresaw the rise of powerful totalitarian governments that would control every aspect of their citizens' lives. In this world, human beings would be genetically, psychologically, and socially conditioned to play highly specialized roles in society.

What might these covers, taken from different editions of the novel, tell us about the book?

You see:

-  [About the BNW MOO](#)
-  [Web Projector](#)
-  [Dickens Guest](#)

Links:

-  [Main Lobby, London Center of Hatchery and Conditioning](#)
-  [Literary Worlds Welcome Center](#)

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout



Literary Worlds
Security Guard.
Obvious exits: [To_Teaching_to_Exceed] to Teaching to Exceed Virtual School, [north] to Campus, [BNW] to Brave New World, [TFA] to <i>Things Fall Apart</i>, [Thoughtcrime
<i><1>1984</i></i>], [Native Son - Bigger's Son], [Shrew, [DL] to Mrs. Immutable Hi] to [ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit 451</i>, [GM] to "Glass Menagerie" The Wingfield Apartment, [ASP] to Middangeard Anglo-Saxon Head-Hall, [AIA] to Angels in America, [WIG] to Wild Irish Girl, [GG] to <i>The Great Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens - London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF] to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn Cheapside, [#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La Mancha
MESSAGE OF THE DAY: Lord, what fools these mortals be!
##ncp version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest! You view Brave New World...
Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning, [south] to Literary Worlds Welcome Center
You feel that you are entering a brave new world.
Never put off to tomorrow the fun you can have today.

go in normal say emote

Links:

 [Main Lobby, London Center of Hatchery and Conditioning](#)

You see:

 [About the BNW MOO](#)
 [Web Projector](#)
 [Dickens Guest](#)

Links:

 [Main Lobby, London Center of Hatchery and Conditioning](#)
 [Literary Worlds Welcome Center](#)

Brave New World
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Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

(north) to Campus, [nw] to Brave New World, [nnw] to New Wings
Fall
Apart</i>, [SL] to Shakespeare Learning Library, [1984]
(Thoughtcrime) to
<i>1984</i>, [PP] to Pied Piper Courtyard Entrance, [BW] to
<i>Native Son</i>
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MESSAGE OF THE DAY: Lord, what fools these mortals be!

#\$#mcn version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest!
You view Brave New World...

Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning,
[south] to Literary Worlds Welcome Center.
You feel that you are entering a brave new world.
Never put off to tomorrow the fun you can have today.
You view Main Lobby, London Center of Hatchery and Conditioning...

Obvious exits: [out] to Brave New World, [east] to Hallway, [west] to The Lift

look soma

normal
 say
 emote

Main Lobby, London Center of Hatchery and Conditioning

You are in the main lobby of the London Center for Hatchery and Conditioning. The room is large and industrial looking, with polished green marble floors and stark white walls. Sitting at a large metallic desk in the center of the room is a Beta-minus receptionist. Exits include an elevator to the west and a hallway to the east.

You see:

scrap of paper
 Beta Receptionist
 Soma Station
 Dickens Guest

Links:

[Brave New World](#)
 [Hallway](#)
 [The Lift](#)

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

(north) to Campus, [nw] to Brave New World, [ne] to All Things Fall
Apart</i>, [SL] to Shakespeare Learning Library, [1984] to Thoughtcrime</i> to
<i>1984</i>, [PP] to Pied Piper Courtyard Entrance, [BW] to
<i>Native Son</i>
- Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the Shrew,
[DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Immutable Hill,
[ILY] to <i>An Island Like You</i>, [FATL] to <i>Farewell to Arms</i>
45L</i>, [GM] to
"Glass Menagerie" The Wingfield
Anglo-Saxon
Head-Hall, [AIA] to Angels in America, [WLO] to Wild Irish Girl,
[GG] to
<i>The Great Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens -
London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF]
to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn Cheapside,
[#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La Mancha

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

#\$#mcpl version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest!
You view Brave New World...

Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning,
[south] to Literary Worlds Welcome Center
You feel that you are entering a brave new world.
Never put off to tomorrow the fun you can have today.
You view Main Lobby, London Center of Hatchery and Conditioning...

Obvious exits: [out] to Brave New World, [east] to Hallway, [west] to The Lift

look soma

normal
 say
 emote

Main Lobby, London Center of Hatchery and Conditioning

You are in the main lobby of the London Center for Hatchery and Conditioning. The room is large and industrial looking, with polished green marble floors and stark white walls. Sitting at a large metallic desk in the center of the room is a Beta-minus receptionist. Exits include an elevator to the west and a hallway to the east.

You see:

scrap of paper
 Beta Receptionist
 Soma Station
 Dickens Guest

Links:

[Brave New World](#)
 [Hallway](#)
 [The Lift](#)

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

brn227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

[about](#) [help](#) [look](#) [who](#) [guide](#) [quit](#)

11:38:57.17 / [T] to Field Piper courtyard entrance, [BN] to
<i>Native Son</i>
 - Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the Shrew,
 [DL] to Mrs. Dalloway's London, [D] to *<i>Democracy</i>* - The Immutability Hall,
 [ILY] to *<i>An Island Like You</i>*, [F451] to *<i>Fahrenheit 451</i>*, [OM] to
"Glass Menagerie" The Wingfield Apartment, [ASP] to Middangeard Anglo-Saxon Head-Hall, [AIA] to Angels in America, [WIG] to Wild Irish Girl, [GG] to
<i>The Great Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens - London Bridge, [T] to Virtual Tempest, [MM] to *<i>Of Mice and Men</i>*, [LOTF] to *<i>Lord of the Flies</i>*, [#62] to General Prologue--Tabard Inn Cheapside, [#62] to *<i>Number the Stars</i>*, [#62] to Moll's World, [#62] to La Mancha

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

#\$#ncp version: 2.1 to: 2.1
 Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest!
 You view Brave New World...

Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning.
 [south] to Literary Worlds Welcome Center
 You feel that you are entering a brave new world.
 Never put off to tomorrow the fun you can have today.
 You view Main Lobby, London Center of Hatchery and Conditioning...

Obvious exits: [out] to Brave New World, [east] to Hallway, [west] to The Lift
 You view Soma Station...

One cubic centimeter cures ten gloomy sentiments.
 Beta Receptionist [to Dickens_Guest]: What about your sentiments?

eat pizza from soma

normal
 say
 emote

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

<1>Native Son</i>
- Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the Shrew,
[DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Immobile Hill,
[ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit 451</i>, [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 Gatsby</i>, [SBI] to Shelter Bay, [CDI] to Charles Dickens -
London Bridge, [T] to V Men</i>, [LOTF] to <i>Lord of the Flies</i>
Cheapside, [#62] to <i>Number the La Mancha

Soma Station

A soma bar, complete with all of your favorite soma beverages and snacks. Works the same way as the coffee bar. Type 'drink/eat whatever from bar.' Overindulging in beverages or food items from the soma bar may result in some side effects.

Soma Station

A soma bar, complete with all of your favorite soma beverages and snacks. Works the same way as the coffee bar. Type 'drink/eat whatever from bar.' Overindulging in beverages or food items from the soma bar may result in some side effects.

MESSAGE OF THE DAY: Lord Johnson the Literary Wor

Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning,
[south] to Literary Worlds Welcome Center
You feel that you are entering a brave new world.
Never put off to tomorrow the fun you can have today.
You view Main Lobby, London Center of Hatchery and Conditioning...

Obvious exits: [out] to Brave New World, [east] to Hallway, [west] to The Lift
You view Soma Station...

One cubic centimeter cures ten gloomy sentiments.
Beta Receptionist [to Dickens_Guest]: What about your sentiments?

eat pizza from soma

normal
 say
 emote

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

about help look who guide quit

< Native Son</i>
- Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the Shrew,
[DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Immobile Hill,
[ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit 451</i>, [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 Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens -
London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF]
to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn Cheapside,
[#62] to <i>Number the La Mancha

MESSAGE OF THE DAY: Lor

#\$ncp version: 2.1 to:
Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest!
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Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning,
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You feel that you are entering a brave new world.
Never put off to tomorrow the fun you can have today.
You view Main Lobby, London Center of Hatchery and Conditioning...

Obvious exits: [out] to Brave New World, [east] to Hallway, [west] to The Lift
You view Soma Station...

One cubic centimeter cures ten gloomy sentiments.
Beta Receptionist [to Dickens_Guest]: What about your sentiments?

eat pizza from soma

normal
 say
 emote

Soma Station

A soma bar, complete with all of your favorite soma beverages and snacks. Works the same way as the coffee bar. Type 'drink/eat whatever from bar.' Overindulging in beverages or food items from the soma bar may result in some side effects.

← ?

eat pizza from soma

normal
 say
 emote

eat pizza from soma

normal
 say
 emote

eat pizza from soma

normal
 say
 emote

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout

DICKENS
London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF] to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn Cheapside, [#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La Mancha
.....
MESSAGE OF THE DAY: Lord, what fools these mortals be!
.....
##mcnp version: 2.1 to: 2.1
Johnson the Literary Worlds Security Guard says, "Hi Dickens_Guest!
You view Brave New World...

Obvious exits: [in] to Main Lobby, London Center of Hatchery and Conditioning,
[south] to Literary Worlds Welcome Center
You feel that you are entering a brave new world.
Never put off to tomorrow the fun you can have today.
You view Main Lobby, London Center of Hatchery and Conditioning...

Obvious exits: [out] to Brave New World, [east] to Hallway, [west] to The Lift
You view Soma Station...

One cubic centimeter cures ten gloomy sentiments.
Beta Receptionist [to Dickens_Guest]: What about your sentiments?
You take a pizza from the Soma Station.
You take a bite out of your pizza.
Beta Receptionist [to Dickens_Guest]: Mmm . . . where's that soma dispenser?
You are empty-handed.
You pick up your pizza and eat a little more.
Our Fordship is our lordship.
Beta Receptionist says, "Never? Surely you exaggerate..."
You eat about half your pizza.
You finish off your pizza.
Everyone belongs to everyone else.
Beta Receptionist says, "Suppose Fordship were not our lordship?
What then?"

normal
 say
 emote

Main Lobby, London Center of Hatchery and Conditioning

You are in the main lobby of the London Center for Hatchery and Conditioning. The room is large and industrial looking, with polished green marble floors and stark white walls. Sitting at a large metallic desk in the center of the room is a Beta-minus receptionist. Exits include an elevator to the west and a hallway to the east.

You see:

scrap of paper
 Beta Receptionist
 Soma Station
 Dickens Guest

Links:

[Brave New World](#)
 [Hallway](#)
 [The Lift](#)

Example

enCoreXpress/4.0 (Literary Worlds) – Mozilla Firefox

bm227.brown.wmich.edu:7000/Xpress_Client/vertical_layout



Dickens London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF] to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn Cheapside, [#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La Mancha
MESSAGE OF THE DAY: Lord, what fools these mortals be!
##mcip version: 2.1 to: 2.1

John You take a pizza from the Soma Station.
Obvz You You take a bite out of your pizza.
Cond [so Beta Receptionist [to Dickens_Guest]: Mmm . . . where's that soma
Never You dispenser?
You You are empty-handed.
Obvz to T You You pick up your pizza and eat a little more.
One Beta Our Fordship is our lordship.
Beta Receptionist says, "Never? Surely you exaggerate..."
You You You eat about half your pizza.
Beta disp You You finish off your pizza.
You You are empty-handed.
You You pick up your pizza and eat a little more.
Our Fordship is our lordship.
Beta Receptionist says, "Never? Surely you exaggerate..."
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You You finish off your pizza.
Everyone belongs to everyone else.
Beta Receptionist says, "Suppose Fordship were not our lordship?
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You are in the main lobby of the London Center for Hatchery and Conditioning. The room is large and industrial looking, with polished green marble floors and stark white walls. Sitting at a large metallic desk in the center of the room is a Beta-minus receptionist. Exits include an elevator to the west and a hallway to the east.

normal
 say
 emote

Example

GUI only and Text only modes are available

The image displays two side-by-side browser windows illustrating different user interfaces for a game environment.

Left Window (Soma Station): This window shows a graphical user interface for the "Soma Station" location. The title bar reads "Soma Station (Literary War...)" and the address bar shows "brm227.brown.wmich.edu:7000/445/". The main content area is titled "Soma Station" and contains descriptive text about the soma bar, mentioning it's complete with all favorite soma beverages and snacks, and noting that overindulging may result in side effects. A small icon of a question mark with a yellow exclamation mark is visible next to the title.

Right Window (MOOtcan): This window shows a text-based user interface for "MOOtcan" located at "brm227.brown.wmich.edu:7000/mootcan/standalone.html". The text output describes a large, industrial-looking room with polished green marble floors and stark white walls. It features a large metallic desk in the center. A Beta-minus receptionist is present. The room includes an elevator to the west and a hallway to the east. The text also mentions a Beta Guest (idle 8m) and a Beta Receptionist. The player is prompted to take a pizza from the Soma Station and eat it, with responses from the Beta Receptionist and the Beta Guest. At the bottom of the window is a text input field and a toolbar with three radio button options: "@normal" (selected), "say", and "emote".

Only The Basics

Literary Worlds can also be used for more than one user

- ▶ Entire classrooms with many users
- ▶ Log on as characters from the text
- ▶ Village of Umuofia created by Dr. Allen Webb

Village of Umuofia

An Interactive Learning Environment

[Things Fall Apart](#)



More Literary World Examples

Village of Umuofia

- ▶ Users may use this environment in a variety of ways
 - ▶ A gallery of images of Igbo village that show life and traditional West African music
 - ▶ An interactive space for live action role play activities based on the novel (*Things Fall Apart*)

More Literary World Examples

Village of Umuofia

- ▶ Literary Worlds allows users to further understand the novel's characters, environments, and themes

http://brn227.brown.wmich.edu:7000 - enCoreXpress/4.0 (Literary Worlds)

about help look who guide request quit

this is free software, and you are welcome to redistribute it under certain conditions. (See the file COPYING in the source-code distribution, or the GNU GENERAL PUBLIC LICENSE Version 2, June 1991, at <http://www.gnu.org/copyleft/gpl.html>)

trying to connect to
brn227.brown.wmich.edu on port 7777
** Connected ***
literary Worlds Cafe
'ou view Literary Worlds Cafe...

'ou see couch, table, and chair.
'ou see Literary Worlds Newspaper, table, and Coffee bar.
obvious exits: [north] to Campus, [BNN] to Brave New World, [LOTF] to
the Files, [TFA] to Things Fall Apart, [SL] to Shakespeare Learning
library, [1984] to Thoughtcrime) to 1984, [PP] to Pied Piper Courtyard
Intrance, [SW] to
Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the
Shrew, [DL] to Mrs. Dalloway's London, [D] to The Immortal Hill, [island] to An
Island in the Sun.
listen You
\$amp version: 2.1 to: 2.1
'ou move to Things Fall Apart.
Things Fall Apart
'ou view Things Fall Apart...
'ou see NWU_Dept_of_A&S, English_Department_Chair, NWU_President,
Anthropology_Department_Chair, News_Reportor, Investigator,
Curious_Visitor,
Kalamazoo_Gazette_Reportor, Dr._Mirzeler, Dr._Ginsberg, and Allen.
obvious exits: [To_Village_Center] to Village Center, [swc] to
literary Worlds
Cafe
'ou move to Village Center.
Village Center
'ou view Village Center...
'ou see Music, Disguised Man, Akueke, Ikemefuna, Nkechi, Unoka,
Wakambie, and
Village_Crier.
obvious exits: [To_Compound_Path] to Compound Path, [To_Forest_Path]
o Forest
Path, [To_Meeting_Path] to Meeting Path

You see:
 Music
 Disguised Man
 Akueke (asleep)
 Ikemefuna (asleep)
 Nkechi (asleep)
 Unoka (asleep)
 Nwakibie (asleep)
 Village Crier (asleep)

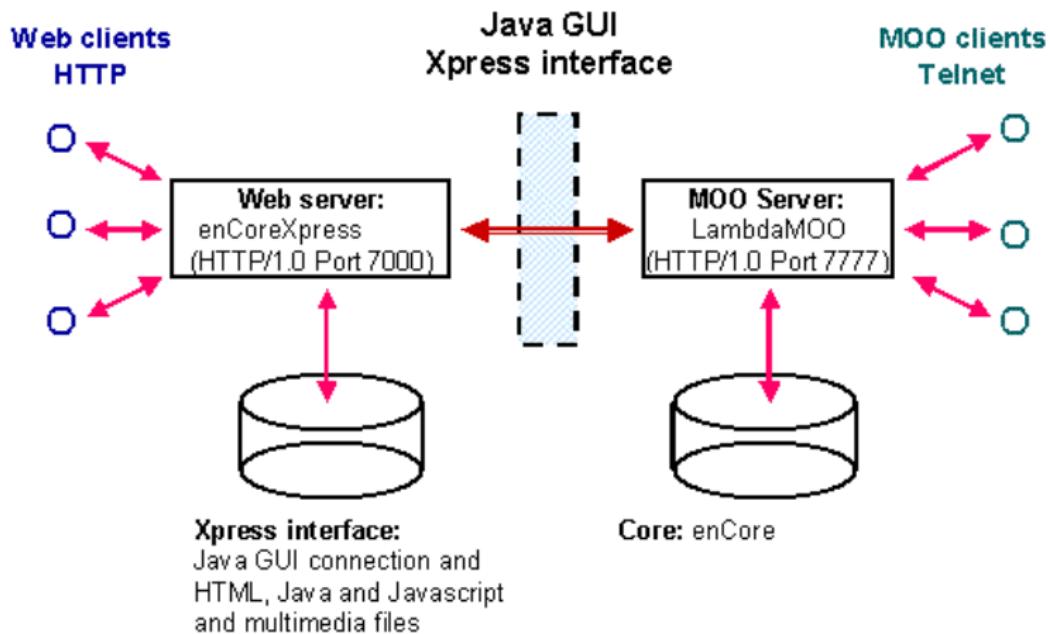
Links:
 Compound Path
 Forest Path
 Meeting Path

normal
say
emote

Current Technology

- ▶ LambdaMOO - A MUD server software package
- ▶ enCore Xpress is an graphical interface and MUD database package that works with the LambdaMOO server to provide a browser based text client using a Java applet as well as a graphical, mouse driven interface.
- ▶ Literary Worlds uses version 4 of enCore

Current Technology



Problems

The current Literary Worlds portal requires:

- ▶ Pop-up windows to be allowed



Firefox prevented this site from opening 6 pop-up windows.

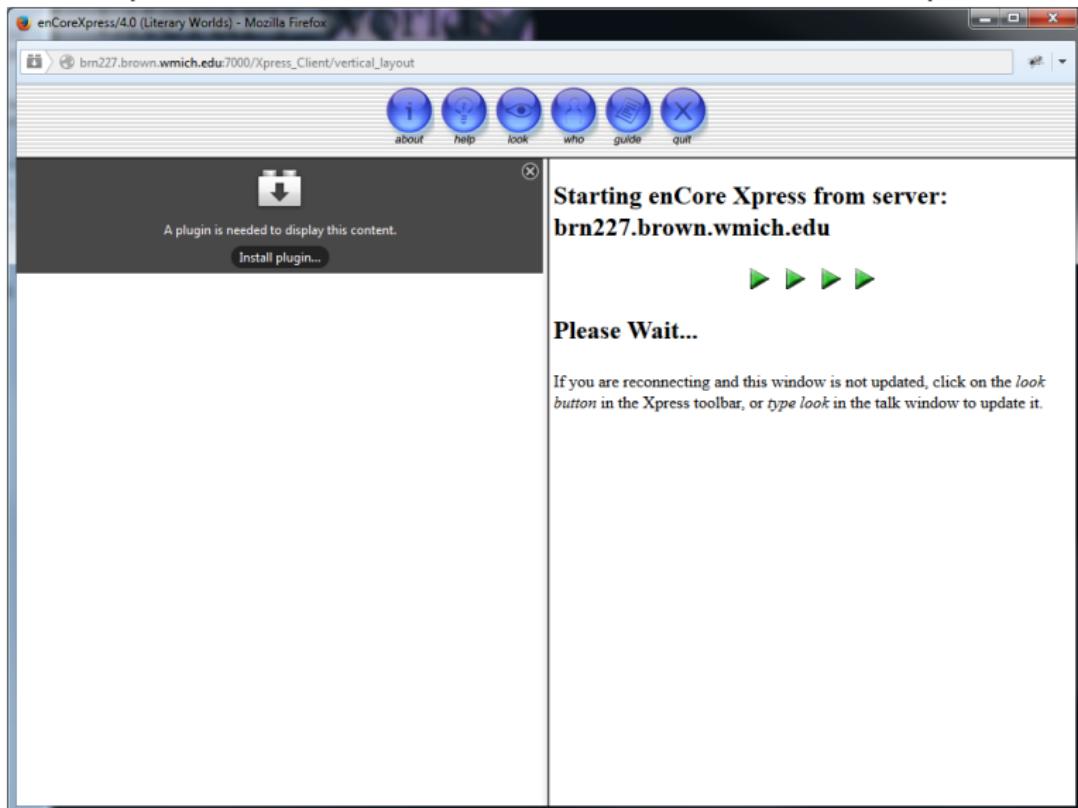
- ▶ Java Runtime Environment (JRE)



Problems - Java

Java Runtime Environment

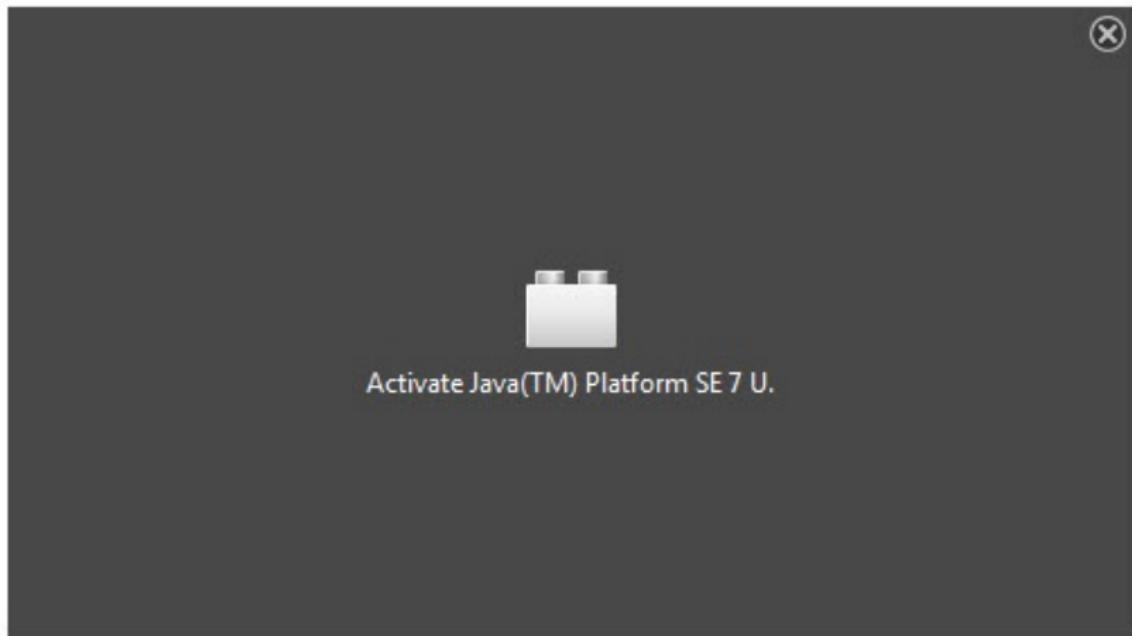
- ▶ It requires the JRE to be installed on all client computers



Problems - Java

Java applets in browsers can be difficult

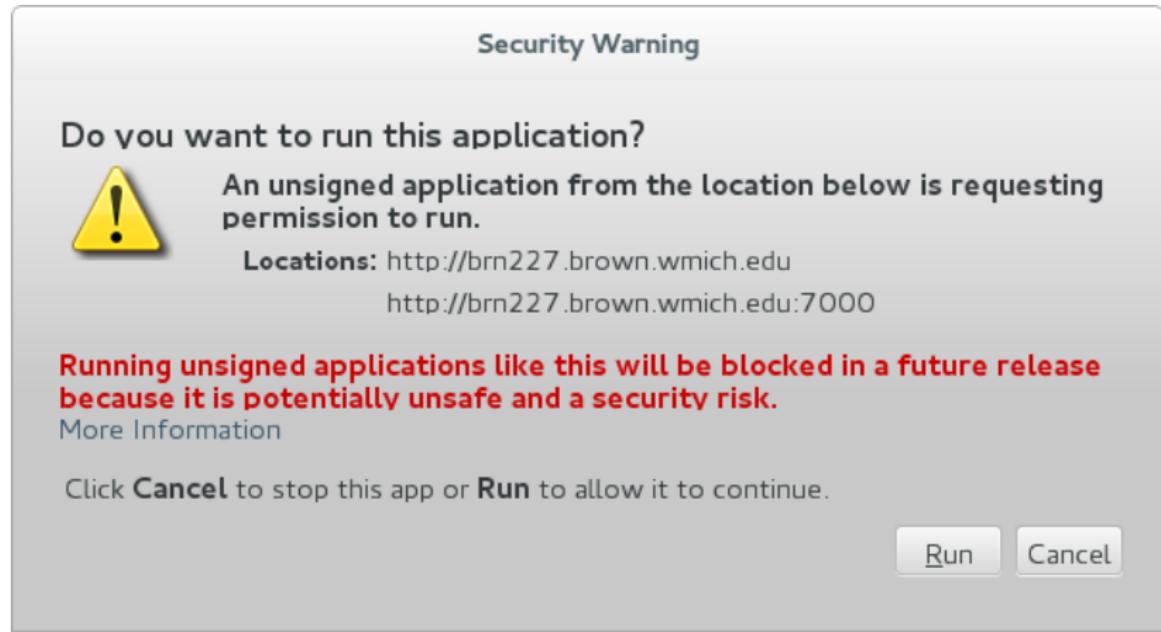
- ▶ Java is beginning to be blocked by default in the browser



Problems - Java

Java permissions

- ▶ All Java applets do not run without permission from the user
- ▶ Java requires constant updates due to security concerns



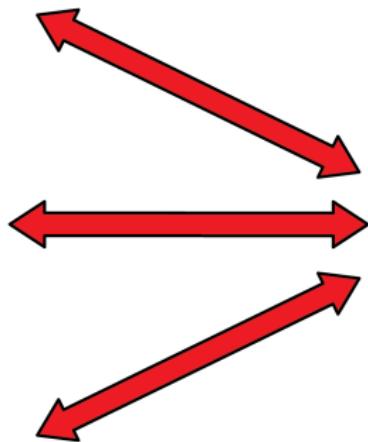
Things to Keep in Mind

Over 20 virtual worlds currently make up Literary Worlds

- ▶ Any replacement interface needs to keep the virtual worlds functioning, as they are.
 - ▶ No change to the current server
- ▶ Need to remove the Java dependency
- ▶ Need to remove the use of pop ups

Current Client-Server Diagram

PCs with Java installed
in their browsers



Connection via telnet
and HTTP

LambdaMOO server with
enCore database



New 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.
- ▶ The new interface must also keep the graphical and text modes in sync as the user moves.

Design Decisions

- ▶ Text Mode
 - ▶ Client side Javascript MUD client
 - ▶ This is reason an intermediary server is needed, to handle the telnet connection on behalf of each client.
- ▶ Graphical Mode
 - ▶ This work is already done in enCore Xpress, there is no need to reinvent it.
 - ▶ The new web application will simply need to serve the existing enCore Xpress interface in a coherent way.

New Client Technology



socket.io



BACKBONE.JS



Bootstrap



- ▶ 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

New Client Alternatives

TBD - List of other technologies we did not use.

Intermediate Server Technology



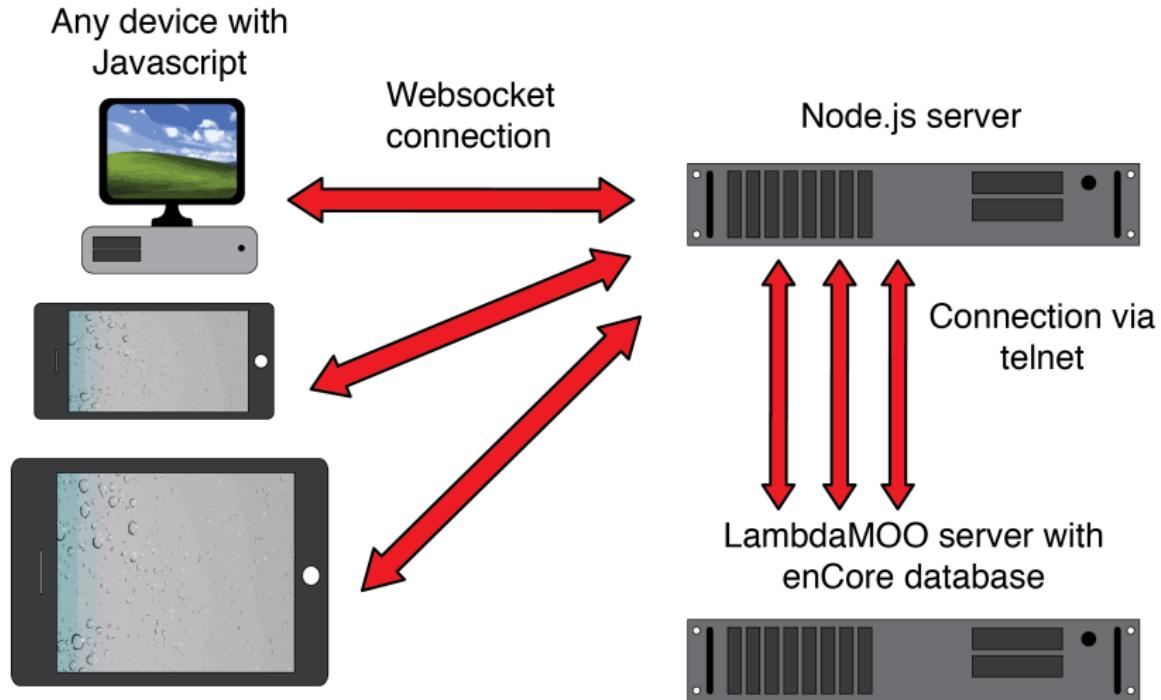
socket.io

- ▶ 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
 - ▶ It provides tools such as easy interfaces for REST, URL routing, cookies, etc. similar to what Ruby on Rails does for the Ruby language.
- ▶ Socket.io

Intermediate Server Alternatives

TBD - More things we didn't use and why.

New Client-Server Diagram



Testing

- ▶ Unit Testing - Is a testing method where individual pieces of code or modules are tested in a controlled environment to make sure that the expected behaviour of the code occurs.

Testing - Considerations

- ▶ The structure of our code
 - ▶ Our code is split up into different modules
- ▶ The dependencies the code has
 - ▶ RequireJs
 - ▶ RequireJs is a modular script loader
 - ▶ BackboneJs
 - ▶ Backbone is what gives our code its structure, splitting it up into models, collections, and views
- ▶ What we want to do with it
 - ▶ Continous Integration

Testing - Jasmine



- ▶ Jasmine - A Behavior Driven Development testing framework for javascript
- ▶ Pros
 - ▶ Simple setup for node through jasmine-node
 - ▶ Large community, well supported with lots of documentation
 - ▶ Nice fluent syntax for assertions built-in, and supports other assertion libraries
 - ▶ Supported by many CI servers
 - ▶ Descriptive syntax for BDD paradigm
- ▶ Cons
 - ▶ Asynchronous testing can be a bit of a headache

Security

- ▶ Telnet is plain text in transport, so it is inherently vulnerable to eavesdropping.
- ▶ For the initial work on the project, security is not a main concern.
- ▶ In the future, the telnet server can be protected from external network connections 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.
- ▶ This strategy would disable the legacy enCore Xpress interface

New Client Text Interface

The screenshot shows a web browser window with the following details:

- Title Bar:** Literary Worlds, Commits - rhinoceraptor/LitWorlds, New Tab.
- Address Bar:** 127.0.0.1/#text
- Header:** Literary Worlds, Disconnect, Login, Options ▾
- Content Area:** Displays a text-based interface.

```
You see couch, table, chair, and <chair>.
You see Literary Worlds Newspaper, Coffee bar, and Johnson the Literary Worlds Security Guard
Obvious exits: [To_Teaching_to_Exceed] to Teaching to Exceed Virtual School, [north] to Campus, [BNW] to Brave New World, [TFA] to <i>Things Fall Apart</i>, [SL] to Shakespeare Learning Library, [1984 (Thoughtcrime)] to <i>1984</i>, [PP] to Pled Piper Courtyard Entrance, [BW] to <i>Native Son</i> - Bigger's World, [MM] to Midsummer Madness, [TOS] to Taming of the Shrew, [DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Immutable Hill, [ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit 451</i>, [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 Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens . London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>, [LOTF] to <i>Lord of the Flies</i>, [#62] to General Prologue - Tabard Inn Cheapside, [#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La Mancha
.....
MESSAGE OF THE DAY: Lord, what fools these mortals be!
.....
$##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)   8 seconds    0 seconds    Literary Worlds Welcome Center
Total: 1 person, who has been active recently.

Enter text here
```

New Client Graphical Interface

Literary Worlds Commits - rhinoceraptor/LitWorlds New Tab

127.0.0.1/#graphic

Literary Worlds Disconnect Login Options ▾

Welcome to Literary Worlds. Enjoy your visit!

Literary Worlds Welcome Center

Follow the links below to virtual museums and interactive worlds!

You see:

- Literary Worlds Newspaper
- Coffee bar
- Johnson the Literary Worlds Security Guard
- Dickens Guest

Links:

- Teaching to Exceed Virtual School
- Campus

New Client Mixed Interface

Literary Worlds Commits - rhinoceraptor/LitWorlds

127.0.0.1/#encore/62

Literary Worlds Disconnect Login Options ▾

Shrew,
[DL] to Mrs. Dalloway's London, [D] to <i>Democracy</i> - The Immutable
Hill,
[ILY] to <i>An Island Like You</i>, [F451] to <i>Fahrenheit 451</i>,
[QM] to
'Glass Menagerie' The Wingfield Apartment, [ASP] to Middangeard Anglo-
Saxon
Head-Hall, [AIA] to Angels in America, [WIG] to Wild Irish Girl, [GG] to
<i>The Great Gatsby</i>, [SB] to Shelter Bay, [CD] to Charles Dickens -
London Bridge, [T] to Virtual Tempest, [MM] to <i>Of Mice and Men</i>,
[LOTF]
to <i>Lord of the Flies</i>, [#62] to General Prologue--Tabard Inn
Cheapside,
[#62] to <i>Number the Stars</i>, [#62] to Moll's World, [#62] to La
Mancha

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

##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)	8 seconds	0 seconds	Literary Worlds Welcome Center

Total: 1 person, who has been active recently.

Enter text here

◀ ▶

Welcome to Literary Worlds. Enjoy your visit!

Literary Worlds Welcome Center



Follow the links below to virtual museums and interactive worlds!

You see:

-  [Literary Worlds Newspaper](#)
-  [Coffee bar](#)
-  [Johnson the Literary Worlds Security Guard](#)
-  [Dickens Guest](#)

Links:

-  [Teaching to Exceed Virtual School](#)
-  [Campus](#)

New Client Interface

TBD - Repeat mixed mode example of getting pizza from the soma bar and Village example

Future of the New Client

TBD - Who will get the code repo (likely Kevin)? Should mention we used Github for version control somewhere in presentation
Mention documentation and scripts we have written??? Also mention future enhancements to back end...

Summary

- ▶ Literary Worlds uses enCore Xpress to deliver text as well as other multimedia (music, pictures, etc.) to users based on literary texts
- ▶ Used Backbone, Socket.io, Node.js, Express, and Bootstrap to create a new client interface
- ▶ Did not change the user's experience or existing virtual worlds
- ▶ Successfully removed the need for Java and popups

Questions

