

Collaborative Virtual Enviroms

Comp10043

Lecture 04

Collaborative Virtual Environments

Today's lecture

1. Early Virtual Worlds
2. Applications of Virtual Worlds
3. Augmented and Virtual Reality

Collaborative Virtual Environments

Early Virtual Worlds

MUD – Multi-user Dungeon

- Grew out of Dungeons and Dragons
- Interactive
- Initially text based
- Latterly 3D vector graphics

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Early Virtual Worlds

MUD – Multi-user Dungeon

Elizabethan tearoom.

This cosy Tudor room is where all adventures start.

Its exposed oak beams and soft, velvet-covered furnishings provide it with the ideal atmosphere in which to relax before venturing out into that strange, timeless realm.

A sense of decency and decorum prevails, and a feeling of kinship with those who, like you, seek their destiny in The Land.

There are exits in all directions, each of which leads into a wisping, magical mist of obvious teleportative properties...

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Early Virtual Worlds

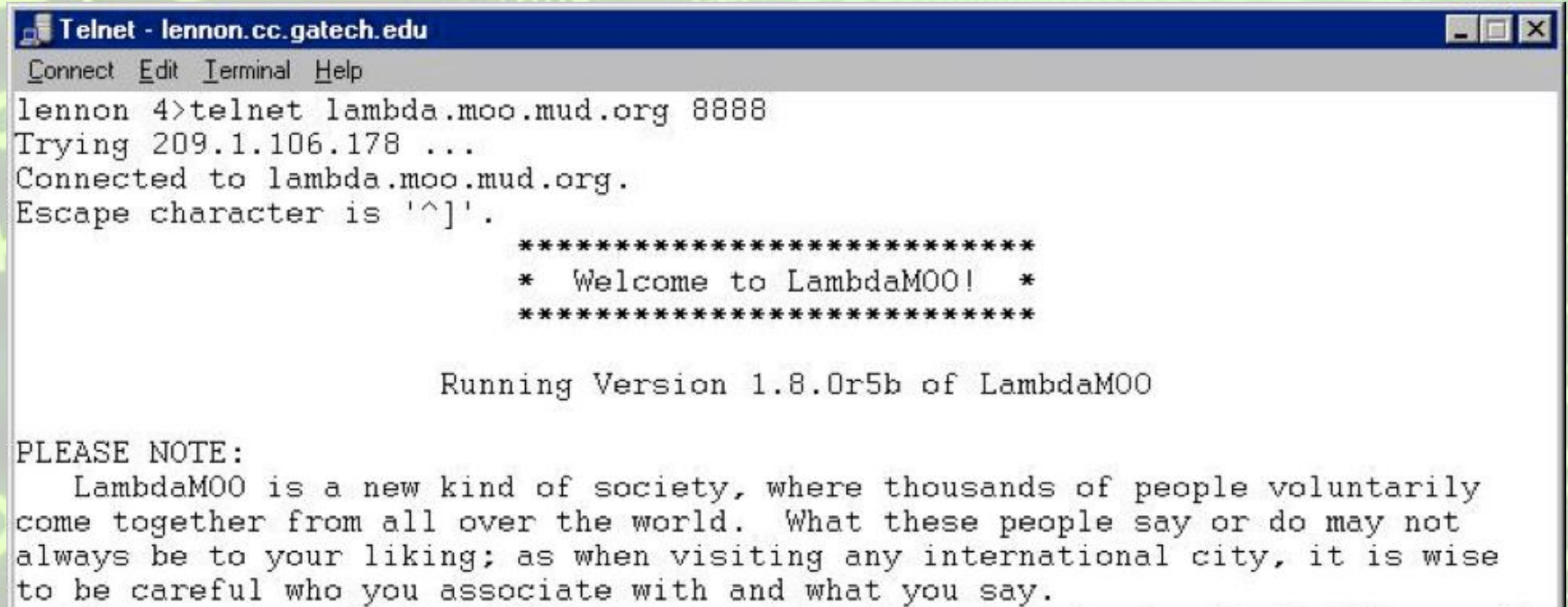
MOO – MUD, Object Oriented

- Similar to MUDs
- Could be programmed
- Included interactive object with basic AI
- LambdaMOO

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Early Virtual Worlds

MOO – MUD, Object Oriented



```
Telnet - lennon.cc.gatech.edu
Connect Edit Terminal Help
lennon 4>telnet lambda.moo.mud.org 8888
Trying 209.1.106.178 ...
Connected to lambda.moo.mud.org.
Escape character is '^]'.

*****
* Welcome to LambdaMOO! *
*****

Running Version 1.8.0r5b of LambdaMOO

PLEASE NOTE:
  LambdaMOO is a new kind of society, where thousands of people voluntarily
  come together from all over the world.  What these people say or do may not
  always be to your liking; as when visiting any international city, it is wise
  to be careful who you associate with and what you say.
```

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Applications of Virtual Worlds

Most VW applications use a mixture (in varying degrees) of real world and virtual sensory inputs.

The purpose of this is to create a deeper level of immersion, and more closely simulate real situations in which novices can experience difficult or dangerous conditions in a controlled and safe environment.

Here are a couple of examples:

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Military Training

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Medical Training

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Technology like this can be used to

- train new doctors and surgeons,
- instruct doctors and surgeons in remote locations
- actually conduct operations remotely!!!

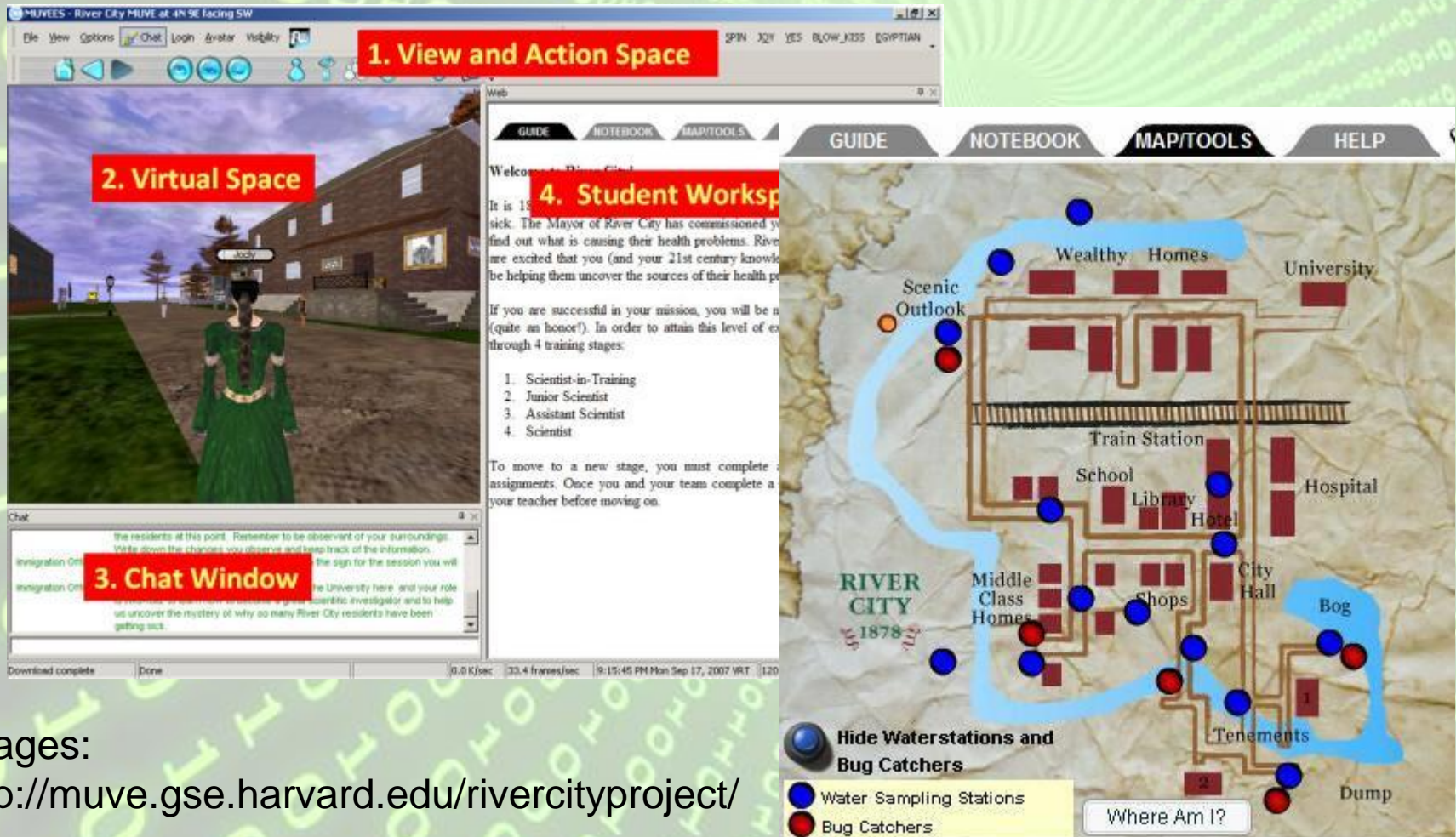
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Education

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Images:

<http://muve.gse.harvard.edu/rivercityproject/>

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Related topics

(sort of)

Virtual Reality
and
Augmented Reality

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Virtual Reality

“Virtual reality will help [a person] to come out the physical reality to virtually change time, place and (or) the type of interaction: interaction with an environment simulating the reality or interaction with an imaginary or symbolic world”

*“Virtual reality is a scientific and technical domain that uses **computer science** (1) and behavioural interfaces (2) to stimulate in a virtual world (3) the behaviour of 3D entities, which **interact in real time** (4) with each other and with one or more users in **pseudo-natural immersion** (5) via sensorimotor channels”*

(Fuchs, 2017, p. 10).

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VR Headsets



Best VR Headsets



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VR Headsets

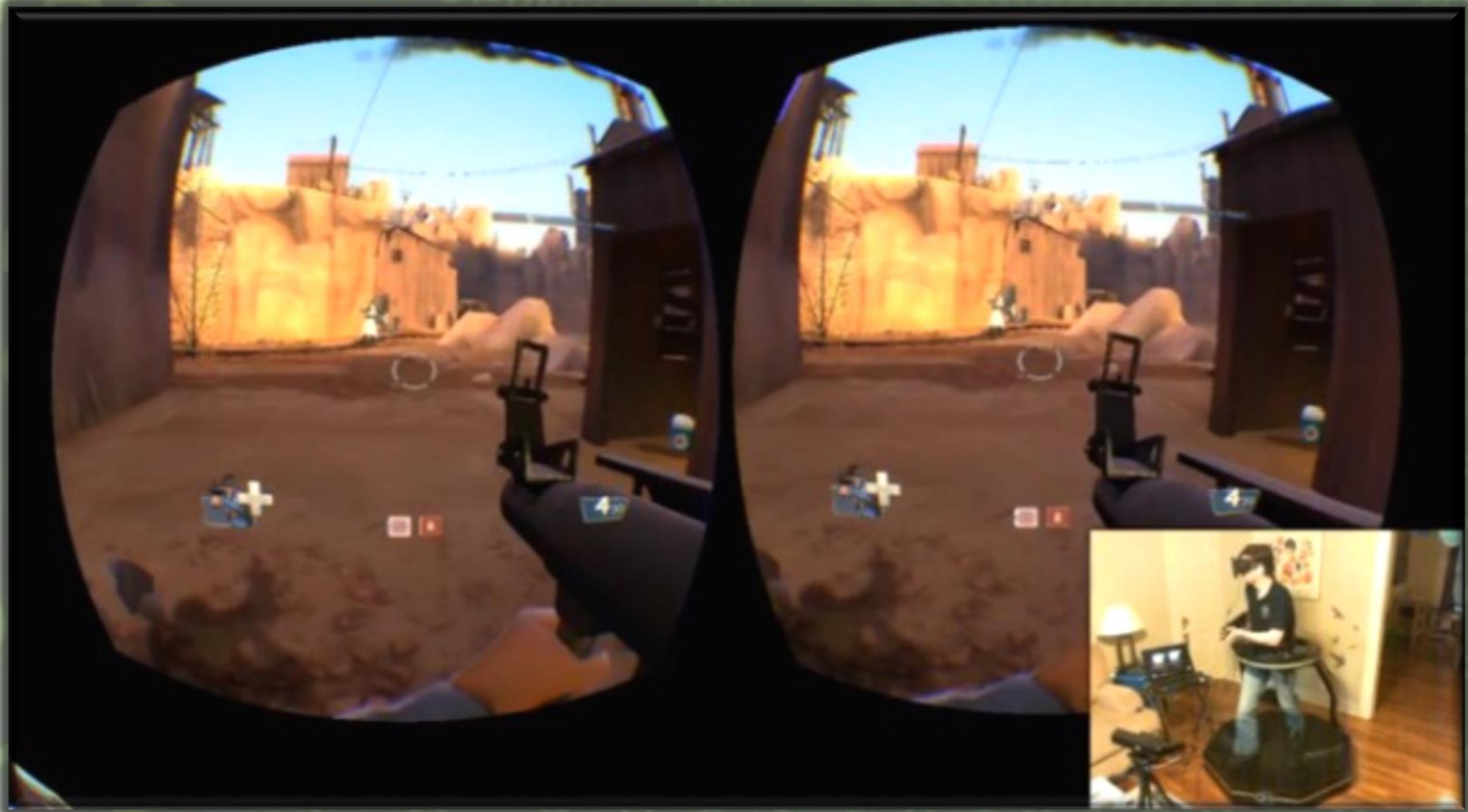


Cost:
£hundreds

Images are processed by
computer/console and
displayed in headset.



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Collaborative Virtual Environs

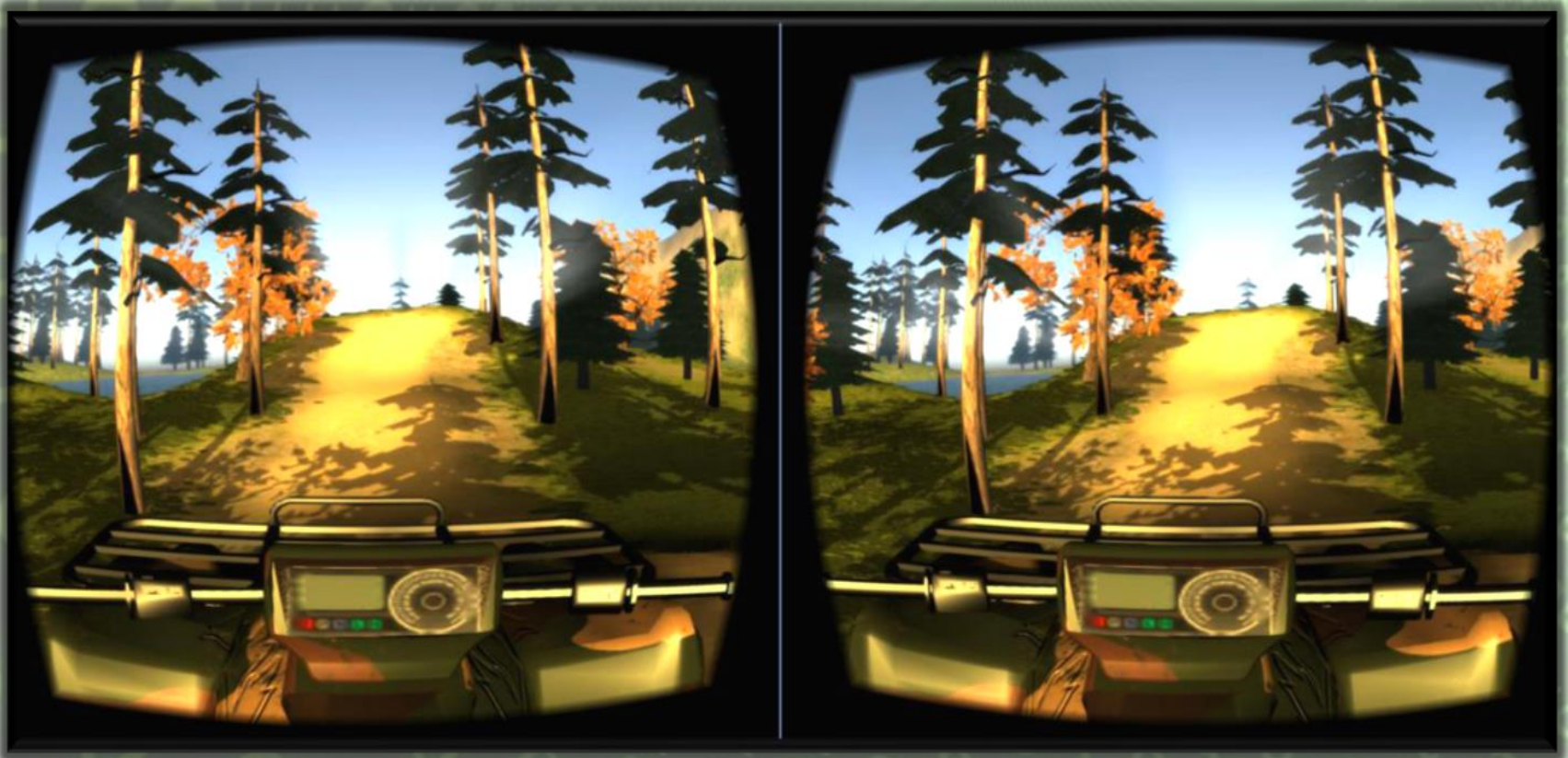


Images are processed by and displayed on smartphone.

Cost:
£5-£15
+ phone, of course



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Augmented Reality

“Augmented Reality is about viewing real world environments in a modified and mediated version” (Froze, 2016, p.1);

“Augmented reality is a medium in which information is added to the physical world in registration with the world” (Craig, 2013, p. 15);

“Augmented Reality is taking digital or computer generated information, whether it be images, audio, video, and touch or haptic sensations and overlaying them over in a real-time environment” (Kipper and Rampolla, 2013, p.1).

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Augmented v Virtual

“Virtual Reality is the complete immersion into a digital world either based on a real model or completely fabricated” (Kipper and Rampolla, 2013, p. 22);

“Augmented Reality is the blending of digital information within a real-world environment” (Kipper and Rampolla, 2013, p.22);

One takes place in the real world and the other does not.

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Applications of AR and VR

Virtual Tourism

Tower Eiffel by Didier Thery; [Tuscany + Augmented Reality](#)

Oxford: <http://www.chem.ox.ac.uk/oxfordtour/>

[Titans of Space](#): gauging an idea of the vastness of space;

[Pokemon Go](#) HoloLens Demo;

[Immersive gaming](#): Team Fortress 2 (one of the first existing games to be updated with Oculus Rift support);