The Internet and the Web

Doug Blank, CS110

Bryn Mawr College, Fall 2011

based on work by:

Glen Fuller, eventmechanics.net.au

dgieseler1, www.slideshare.net/dgieseler1

What is a computer network?

- Physically connected computers
  - Computers
  - Wired connections
- "Protocols" that allow these computers to communicate over connections
  - Agreements on how data is exchanged
  - Layers of agreements
    - Low-level (electrical)
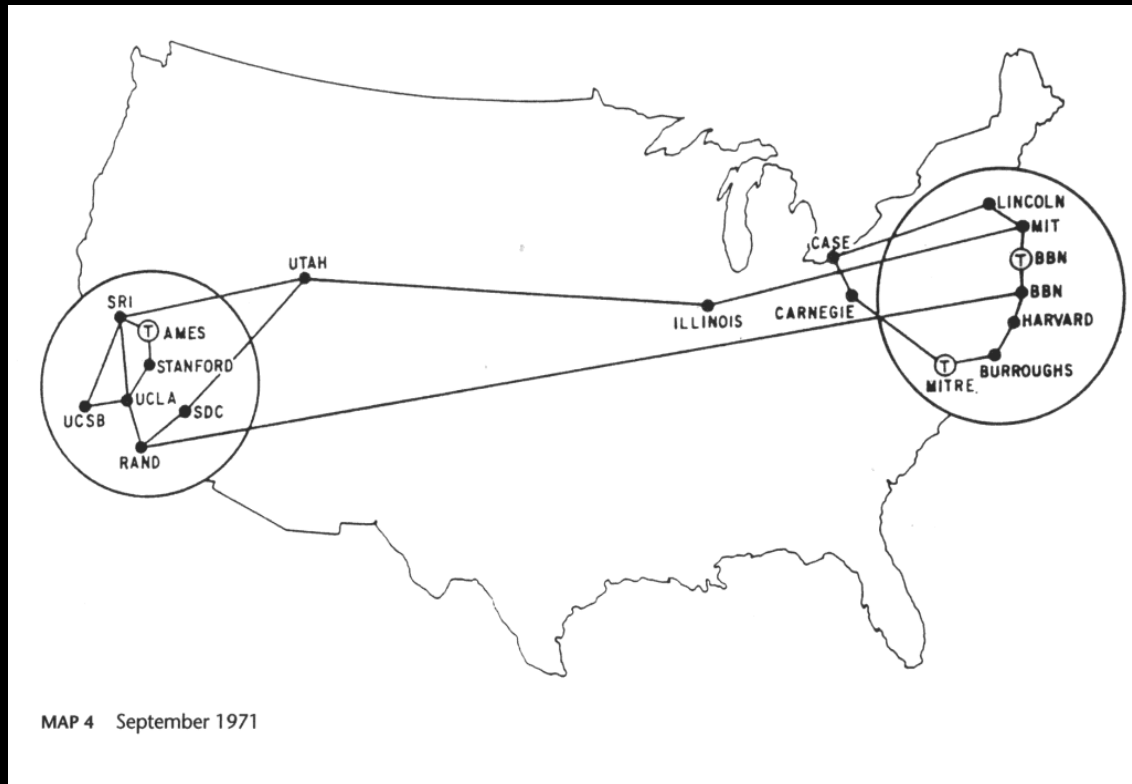   - Higher-level (software communication)

ARPANET

- Started in 1966
- "Advanced Research Projects Agency Network"
- Department of Defense project
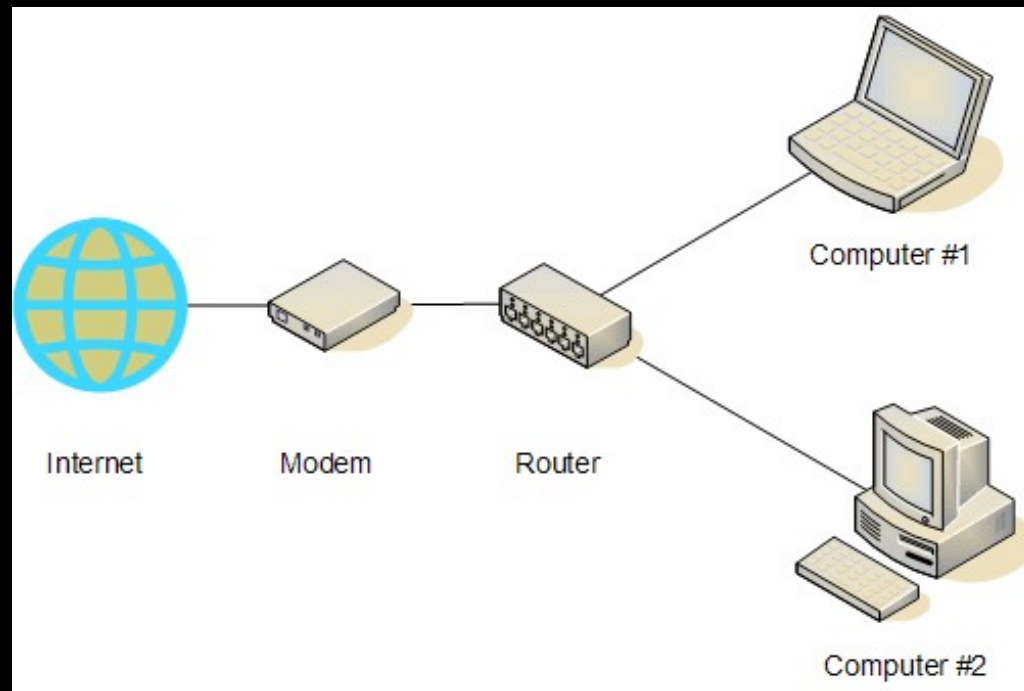- The world's first operational "packet switching network"
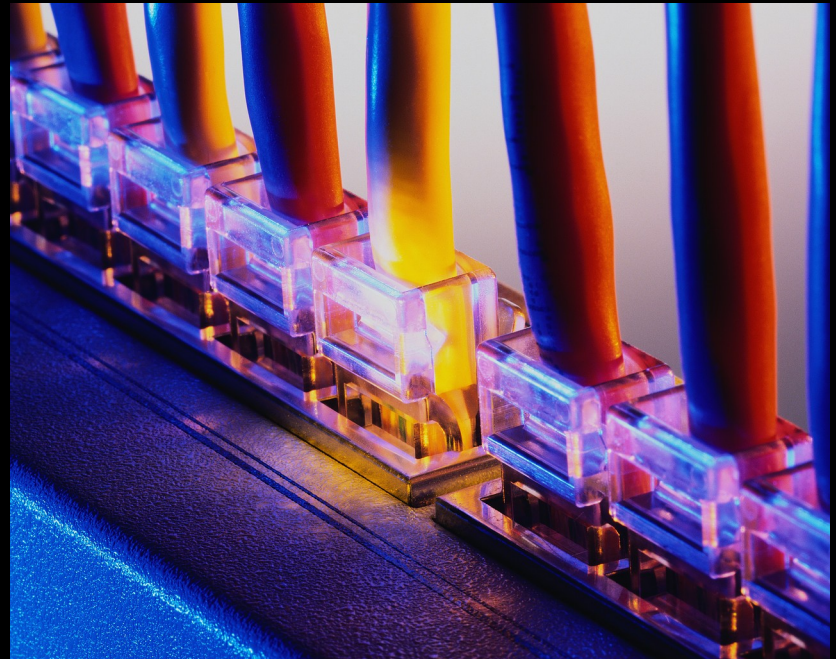
ARPANET

Was the world's first operational network, and the predecessor of the global Internet

MAP 4   September 1971

# Local Network connecting onto global network

Ethernet: Low-level protocol

- Developed by Dr. Robert M. Metcalfe
- Allowed a coaxial cable to move data extremely fast

TCP/IP: higher-level protocols

- Created by Vinton Cerf and Bob Kahn
- Allowed diverse computer networks to interconnect and communicate with each other
- "Transmission Control Protocol" and "Internet Protocol"
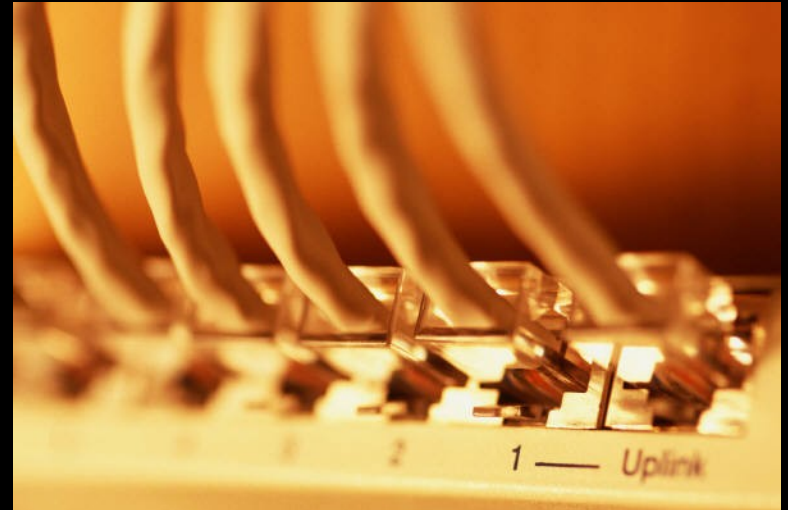
The First Email

- Sent in 1973 by Ray Tomlinson

- Between 2 PDP-10 computers

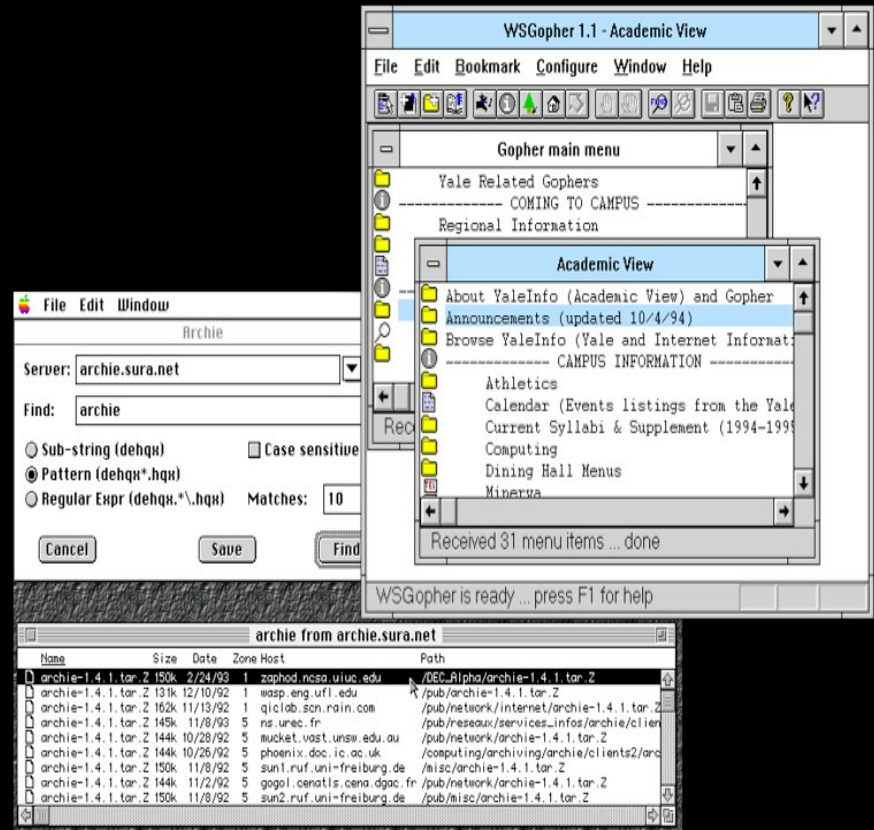- Tomlinson introduced the "@" sign

Internet in the 70s - 80s

- Continue to develop and add new protocols
  - FTP
  - Talk
  - TELNET
  - Gopher

Gopher

- University of Minnesota (mascot is the gopher)
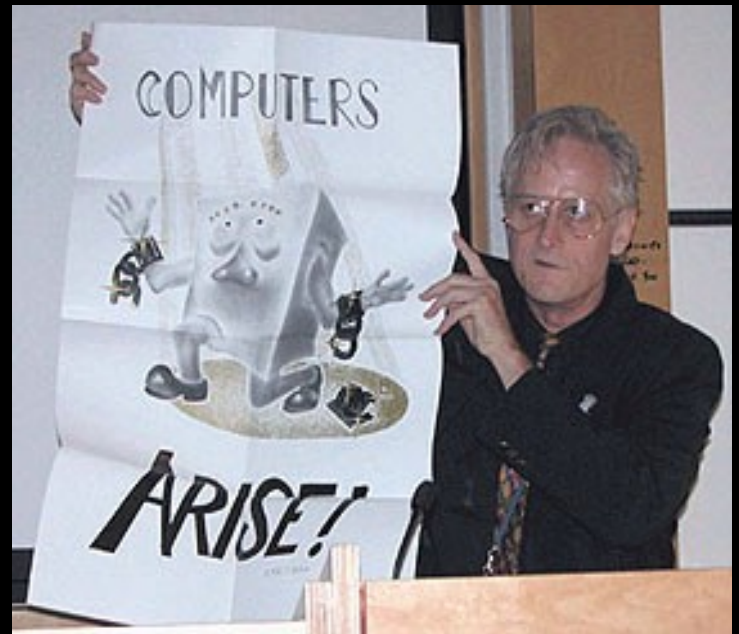- Charge money?
- Text only
- Archie, search program

WWW

- ARPANET ended in 1990

- Tim Berners-Lee and CERN create the World Wide Web

- Hypertext Transport Protocol, HTTP

- Hypertext Markup Language, HTML

"Hypertext" and "Hypermedia"

- Ted Nelson

- Swarthmore grad, 1959 Philosophy

- Project Xanadu, started 1960

- Published 1965

"Memex"

Vannevar Bush introduced the concept of what he called the *memex* during the 1930s, which is a microfilm-based "device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory." He wanted the memex to behave like the "intricate web of trails carried by the cells of the brain"; essentially, causing the proposed device to be similar to the functions of a human brain. The important feature of the memex is that it ties two pieces together. Any item can just select another immediately.

World Wide Web

- Built on top of everything that came before
  - TELNET
  - Ethernet
  - Standard image protocols (GIF, JPG, PNG)
  - Mouse
  - Graphical User Interfaces (GUIs)

World Wide Web

- Server/Host
  - Runs special software to serve requests
  - Apache, PHP, Perl, Python
- Client
  - Runs special software called the "browser"
  - Firefox, Internet Explorer, Safari, etc.

A WWW Conversation

- Server listens for requests on a particular "port"
- Browser makes a request (via link or manually) via URL
- Server gives HTML "code"
- Browser renders it
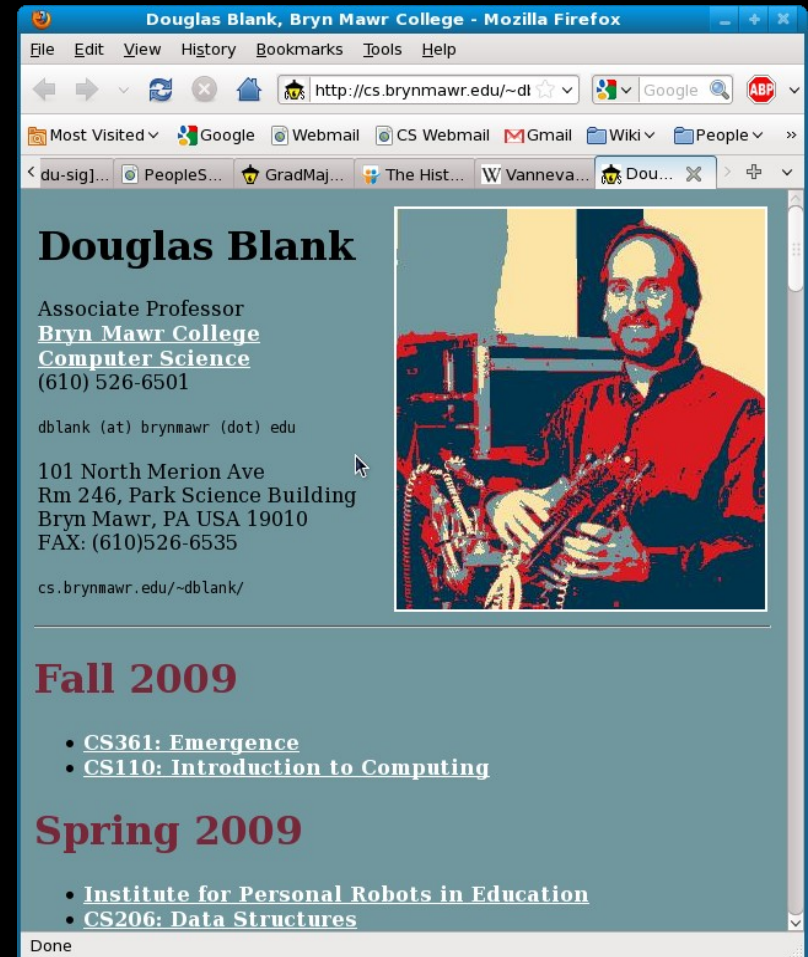
HTML "code"

- Composed of nested "elements"

- Textual, not encoded

- Start/End tags
  <html>
    <body>
    </body>
  </html>

Source of: http://cs.brynmawr.edu/~dblank/ - Mozilla Firefox

File Edit View Help

```
<html>
<head>
<title>Douglas Blank, Bryn Mawr College</title>
<style type="text/css">
h1 {color: #792839; }
h1.black {color: black; }
body {background-color: #70979e; }
a:link {color: white; }
a:visited {color: white; font-weight: bold;}
</style>

</head>
<body>

<table border=0>
<tr><td width=600>

<table border=0>
<tr><td width="50%">
<h1 class="black">Douglas Blank</h1>
Associate Professor<br>
<a href=http://www.brynmawr.edu/>Bryn Mawr College</a><br>
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Bryn Mawr, PA USA 19010<br>
FAX: (610)526-6535<br>
 <br>

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</td>
<td width="50%">
<a href="obamicon.py"><img src="images/doug-sm.jpg"></a>
</td>
</tr>
</table>

<hr>
<h1>Fall 2009</h1>
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1994 - 2000

- The Internet exploded during this period
- The first commercial site was amazon.com
- In 1994 the World Wide Web grew by 2300%

"Browser Wars"

- Netscape was the standard until 1998

- It folded and was taken over by AOL

- Microsoft Internet Explorer captured 96% of the browser market

- IE has recently been challenged by the Mozilla browser (aka Firefox)

World Wide Web

- Early web
  - Portals
  - Netscape
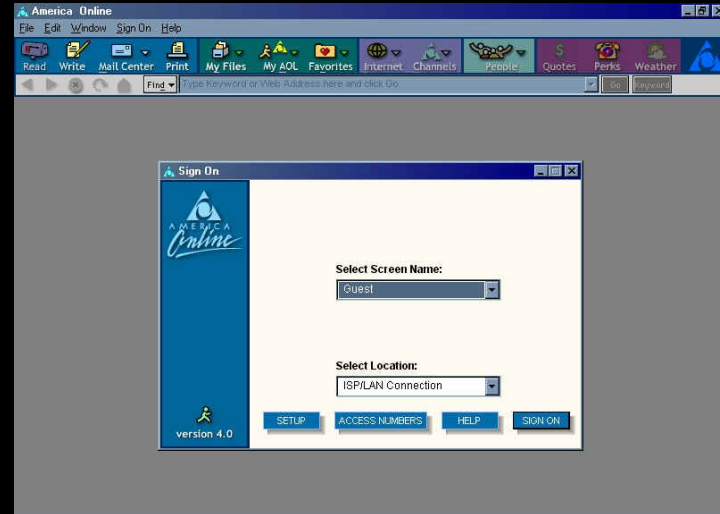
- Later web
  - Google
  - Social networking, etc.

2000 - Present

- The World Wide Web is the biggest use of the Internet
  - Blogs, News, Video, Shopping, Politics, etc
- ...but not the only use
  - Twitter, Gaming, Television, Telephone, Email, IM, distribution channels (torrents)
- "Web 2.0" - term for modern web use
- Many people have a Web presence

Is the WWW something new?

Meeting teh inventer of Lolcats

Not as cool as I espected

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- Sonia Livingstone:
  - The skills and conventions required to engage with the internet may or may not be new. Commentators are divided over whether or not the internet offers a radically new information and communication environment. Hence it remains an open question as to whether the ability to access, analyse, evaluate and create communication content is common to or different for the book, for television, for the internet?
  - http://www.lse.ac.uk/collections/media@lse/pdf /Media@lseEWP4_july03.pdf

Blogs?

- Only for losers…?
- Different types of blogs (Blood)
- Nihilistic impulse, 'zero comments' Lovink (2007)
  - Blogged cynicism
  - "As a micro-heroic, Nietzschean act of the pyjama people, blogging grows out of a nihilism of strength, not out of a weakness of pessimism. […] [Blogs are] decadent artifacts that remotely dismantle the mighty and seductive power of the broadcast system" (17)
- Expression of collective intelligence?
- http://eventmechanics.net.au

DIY Culture

- What is DIY culture?
  - Makeover culture? (Jones 2008)
  - Enthusiast cultures?
- Participation: From audiences to publics?

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DIY Culture

- Traditional forms - leaflets, posters, circulars, small circulation journals & magazines, chapbooks, newsletters, Super-8 films

- Contemporary forms - zines, blogs, newsgroups & mailing lists

- Are YouTube, MySpace, etc. DIY?

DIY Culture

1) there are relatively low barriers to artistic expression and civic engagement.

2) there is strong support for creating and sharing what you create with others.

3) there is some kind of informal mentorship whereby what is known by the most experienced gets passed along to newbies and novices.

4) members feel that their contributions matter.

5) members feel some degree of social connection with each other at least to the degree to which they care what other people think about what they have created.

DIY Culture

- Fordmods.com
- DIY media/culture is dangerous/unethical/lacks accountability
- DIY media has been co-opted & commodified by big business
- DIY producers reproduce dominant ideologies in the guise of being 'alternative'
- DIY media is being used to exploit naïve amateurs - especially young people

Gaming Culture

it not been ALL day.

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- 'Gaming studies' emerging field
- Ludology vs. Narratology debate
- Game as just another 'text' (Bolter and Grusin)
- Games as games, with own rules, etc. (Aarseth)
  - http://gamestudies.org
  - "Allegorithm" (Galloway 2006: 91-92): Control allegory
  - Not the particular content, but the algorithmic logic of computer games
  - Example: *Civilization* dubious ethnocentric representations, more problematic is the way it reduces everything to quantifiable bits of information
  - Players internalise the 'rules' of the program

Gaming Culture

- Everyday life as a game?
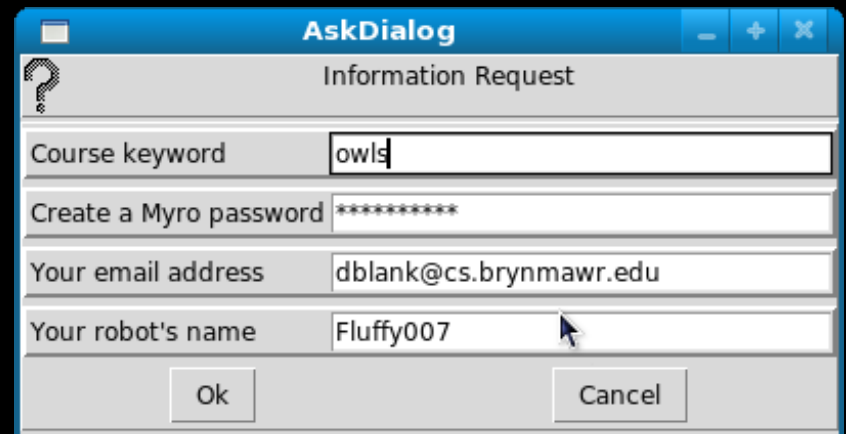- http://www.futureofthebook.org/gamertheory/

- "The game has colonized its rivals within the cultural realm, from the spectacle of cinema to the simulations of television. Stories no longer opiate us with imaginary reconciliations of real problems. […] Sure, reality TV doesn't look like reality, but neither does reality. Both become a seamless space in which gamers test their abilities within contrived scenarios" (Wark 2007, §7)

Stop... playin... interwebz...

no fuds... for... dayz...

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Getting Started on the Web

- Register your robot

  >>> register()

- Log in at:
  myro.roboteducation.org/myweb