



Impacting Teaching and Learning Through Standards

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IMS Global Learning Consortium (IMS GLC)

<http://www.imsglobal.org/>

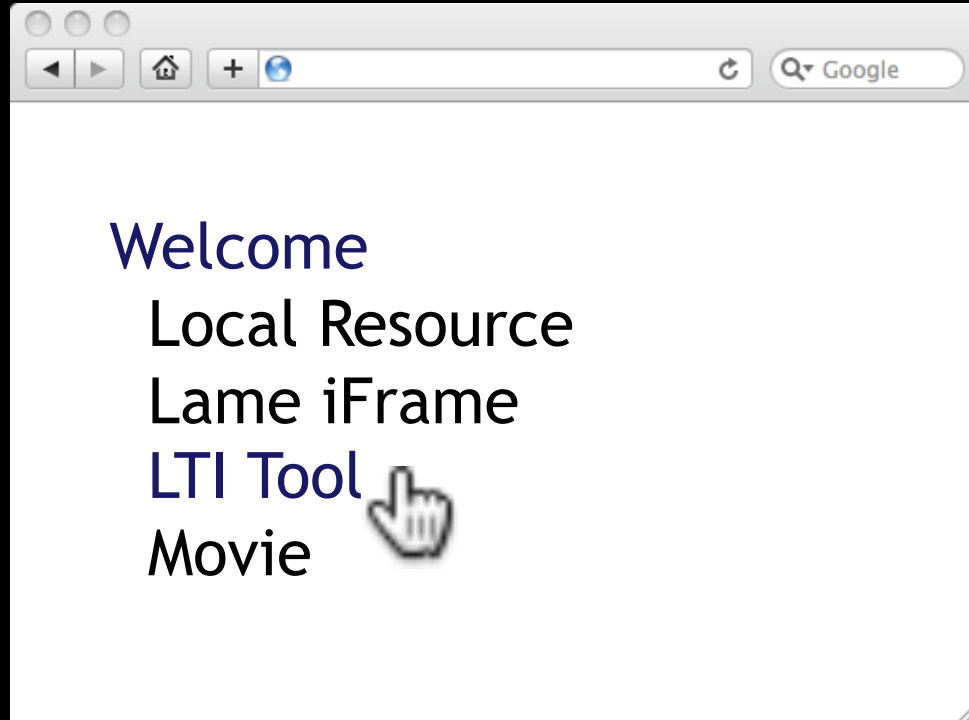




Basic LTI: Executive Summary

- Allows an LMS to launch an External Tool and securely provide user identity, course information, and role information to the external tool
- Uses a HTTP POST through the browser - secured by the OAuth security (www.oauth.net)

User Experience

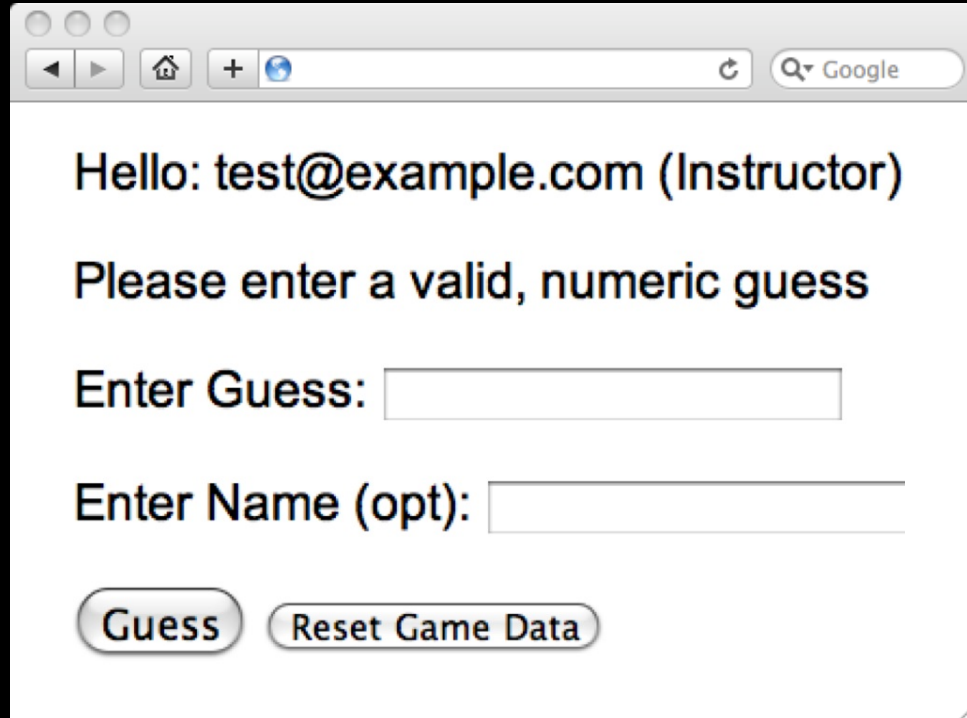


LMS (LTI Consumer)

Tool (LTI Provider)



User Experience



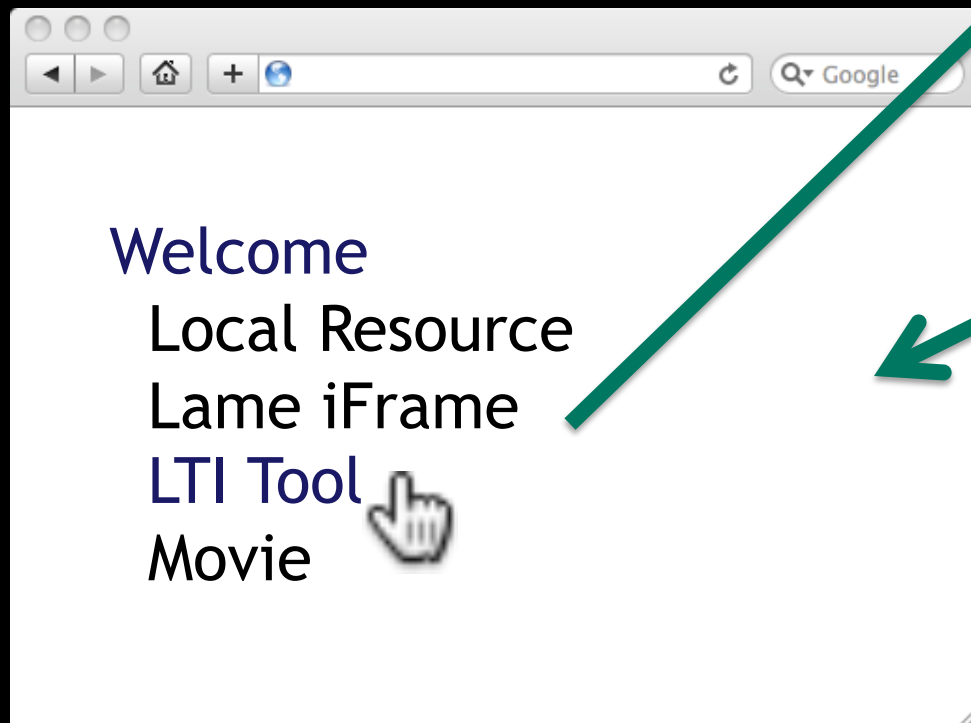
A screenshot of a web browser window. The address bar shows a search engine (Google) and a search bar. The main content area displays a greeting: "Hello: test@example.com (Instructor)". Below this is a prompt: "Please enter a valid, numeric guess". There are two input fields: "Enter Guess:" followed by a text box, and "Enter Name (opt):" followed by a text box. At the bottom, there are two buttons: "Guess" and "Reset Game Data".

LMS (LTI Consumer)

Tool (LTI Provider)



Again in slow motion...



LMS (LTI Consumer)

LMS Looks up User and Course Information.

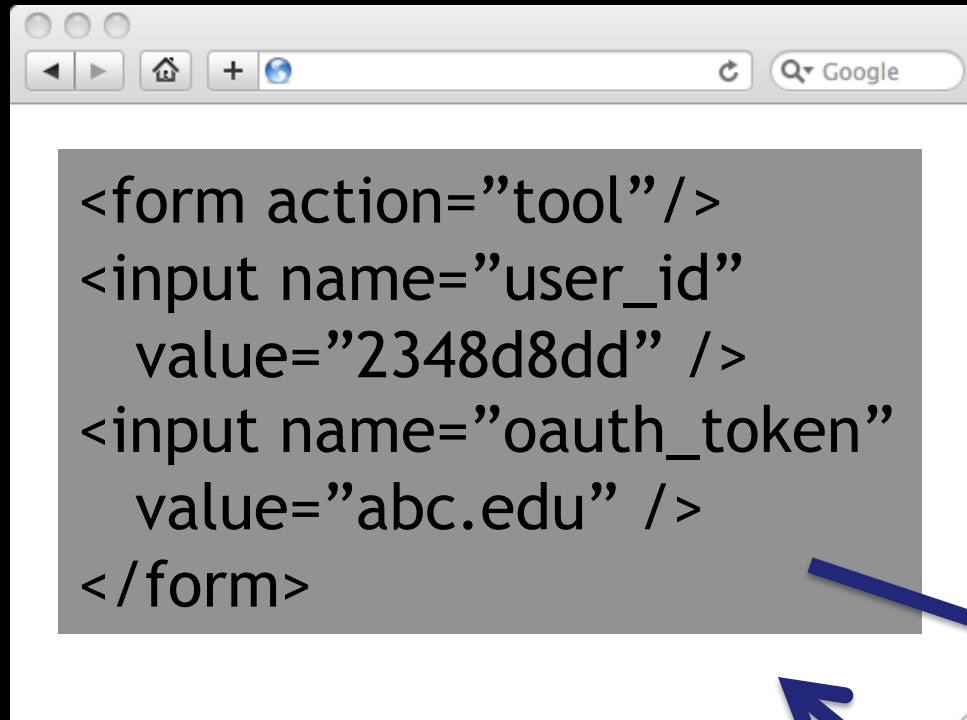
Information is signed using **secret** and OAuth

Form data sent to Browser

Tool (LTI Provider)



Form is immediately auto-submitted using JavaScript.



```
<form action="tool" />
<input name="user_id"
  value="2348d8dd" />
<input name="oauth_token"
  value="abc.edu" />
</form>
```

LMS (LTI Consumer)

Tool (LTI Provider)

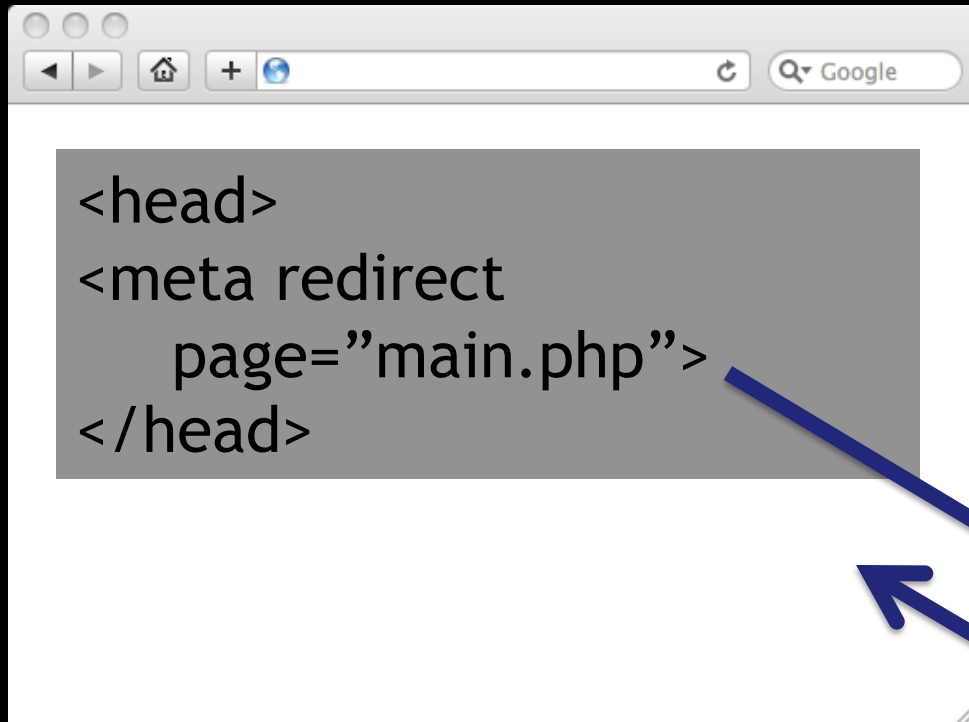
Tool looks up **secret** and validates signature.

Tool provisions user, course, and session.

Tool sends redirect



Browser follows redirect...

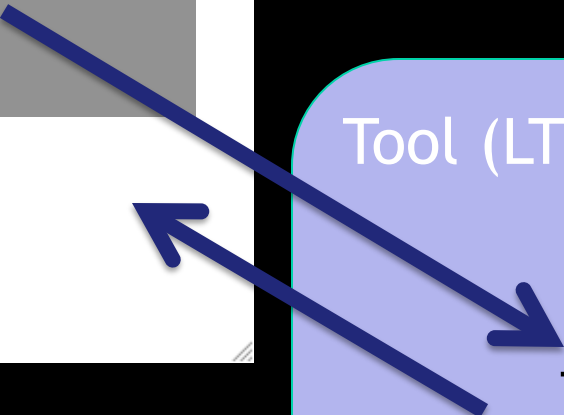


```
<head>  
<meta redirect  
  page="main.php">  
</head>
```

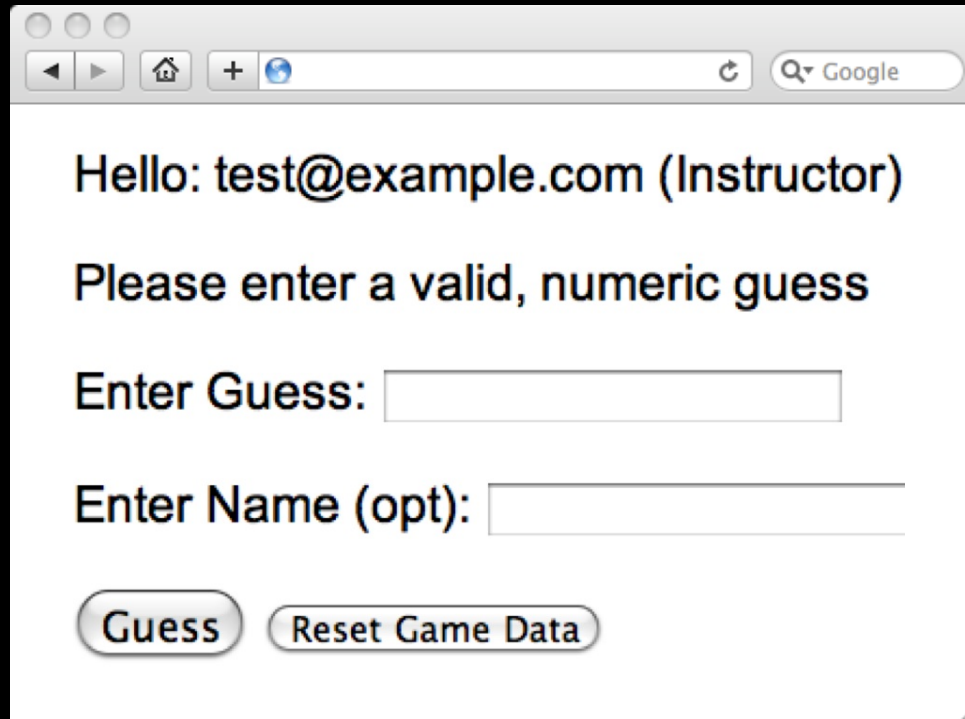
LMS (LTI Consumer)

Tool (LTI Provider)

Tool produces first page.



LMS (LTI Consumer)



A screenshot of a web browser window. The address bar shows a search engine (Google) and a search icon. The main content area displays the following text and form elements:

Hello: test@example.com (Instructor)

Please enter a valid, numeric guess

Enter Guess:

Enter Name (opt):

Guess Reset Game Data

Tool (LTI Provider)





Basic LTI Sample Launch Data

lti_version=LTI-1p0

lti_message_type=basic-lti-launch-request

resource_link_id=120988f929-274612

user_id=292832126

roles=Instructor

lis_person_name_full=Charles R. Severance

lis_person_contact_email_primary = csev@umich.edu

context_id=456434513

context_title=SI301 - PHP

tool_consumer_instance_guid=ctools.umich.edu

tool_consumer_instance_description=University of Michigan



OAUTH

[About](#) [Advisories](#) [Documentation](#) [Code](#) [Blog](#) [Community](#)

An **open protocol** to allow **secure API authorization** in a **simple** and **standard** method from desktop and web applications.

[Read on »](#)

For Consumer developers...

If you're building...

- desktop applications
- dashboard widgets or gadgets
- Javascript or browser-based apps
- webpage widgets

OAuth is a simple way to publish and interact with protected data. It's also a safer and more secure way for people to give you access. We've kept it simple to save you time.

For Service Provider developers...

If you're supporting...

- web applications
- server-side APIs
- mashups

If you're storing protected data on your users' behalf, they shouldn't be spreading their passwords around the web to get access to it. Use OAuth to give your users access to their data while protecting their account credentials.

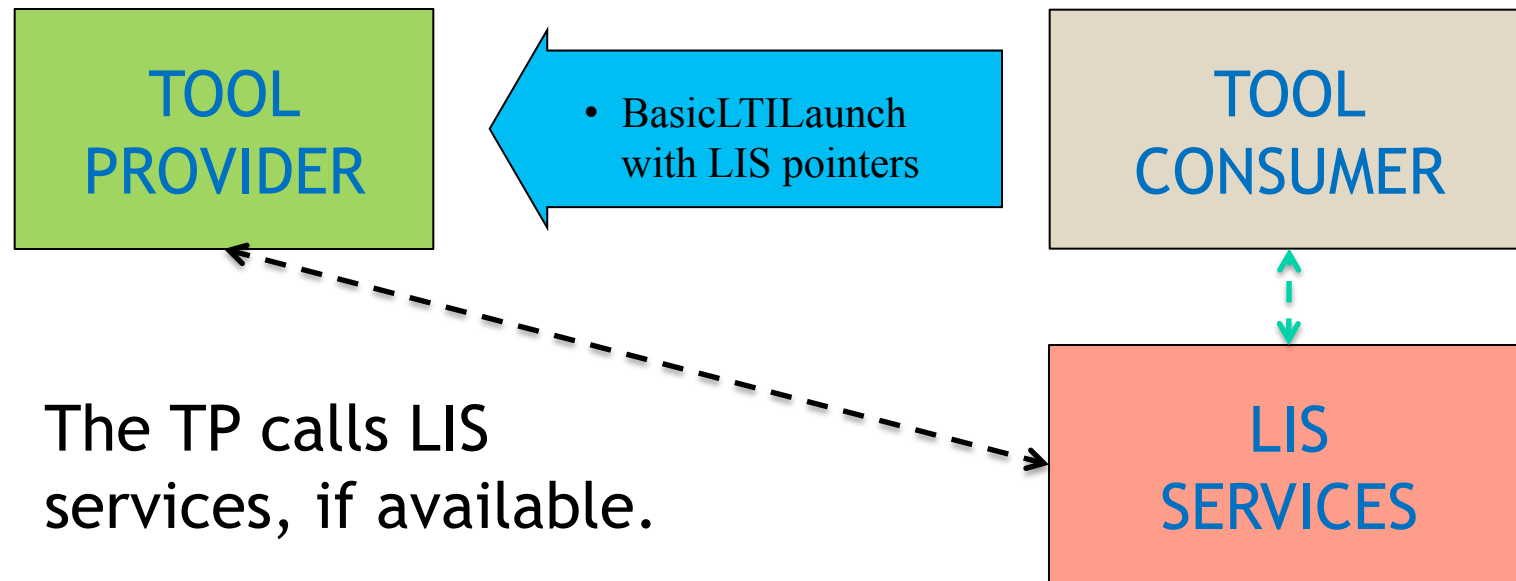


Basic LTI and IMS Common Cartridge

- Common Cartridge 1.1 will include the ability to define a Basic LTI resource and include that resource in course organizational structures

Welcome
Local Resource
Folder
LTI Tool
Discussion
QTI Pool

Learning Tools Interoperability





Pushing Basic LTI Adoption

- Sample Java + PHP Basic LTI implementations at
 - <http://code.google.com/p/ims-dev/>
- Use/include sample code from oauth.net
- Both structured to provide reusable code
 - `org.imslobalorg.basiclti.BasicLTIUtil.java`
 - `blti_util.php`
- Copyright IMS, Apache 2 - Usable anywhere



Desire2Learn

- Implemented IMS Basic LTI in 8.4.2

A screenshot of a web browser displaying a course page in Desire2Learn. The page has a blue header with "Course" and "Welcome, Matt Oct 21, 2009". Below the header is a navigation bar with "Course Home", "Content", "Discussions", "Dropbox", "Quizzes", "Classlist", and "Grades". On the left, a "Content Map" sidebar shows a tree view with "Unit 1: LTI Testing" expanded, and "Link to SpACE" selected. The main content area is titled "Link to SpACE" and contains a map interface. The map interface has a toolbar with "Placemarks", "File manager", "Options", and "Help". Below the toolbar, there are "Map" and "Order" tabs. The map itself shows a world map with labels for "North America", "South America", "Africa", "Europe", "Asia", "Atlantic Ocean", and "Indian Ocean". A "Change map type" dropdown menu is set to "Map", and a "Find location" input field is present. A "Click on the map to add a placemark." instruction is visible. At the bottom of the map, there is a "Powered by Google" logo and a "Terms of Use" link. Below the map, there is an "Initial map (centre/zoom/type):" label and "Save" and "Restore" buttons.



Icodeon - Content Player



Icodeon

- The Icodeon content player supports IMS Common Cartridge 1.1 which includes live links to premium content using Basic LTI



Icodeon Common Cartridge Explorer

http://www.common-cartridge.com/player/Cartridge.aspx?_cartridge_id=oc11&_

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Close First Back Next Last Add Comment Embed

Index of Wade Model Files : Chapter 1

Icodeon Common Cartridge Explorer

http://www.common-cartridge.com/player/Cartridge.aspx?_cartridge_id=oc11&_

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 - Volume Information
 - Chapter 1: Introduction and Review
 - Introduction
 - Molecule Gallery
 - Student Tutorials
 - ChemOffice Activities
 - CourseSmart eBook Chapter 1
 - Instructor Resources
 - Chapter 2: Structure and Properties
 - Chapter 3: Structure and Stereochemistry
 - Chapter 8: Reactions of Alkenes
 - Discussion Forum 1
 - Discussion Forum 2

CourseSmart - 9780321598745 - Organic Chemistry, Seventh Edition

http://www.coursesmart.com/9780321598745/4

Page 4

GO TO 60 Add Note Zoom Print Help PREVIOUS

Back to Search Results

SEARCH TERMS Show Hide

4 CHAPTER 1 | Introduction and Review

1s

electron density

distance

distance from the nucleus

nucleus

FIGURE 1-2
Graph and diagram of the 1s atomic orbital. The electron density is highest at the nucleus and drops off exponentially with increasing distance from the nucleus in any direction.

called a node. Because most of the 2s electron density is farther from the nucleus than that of the 1s, the 2s orbital is higher in energy. Figure 1-3 shows a graph of the 2s orbital.

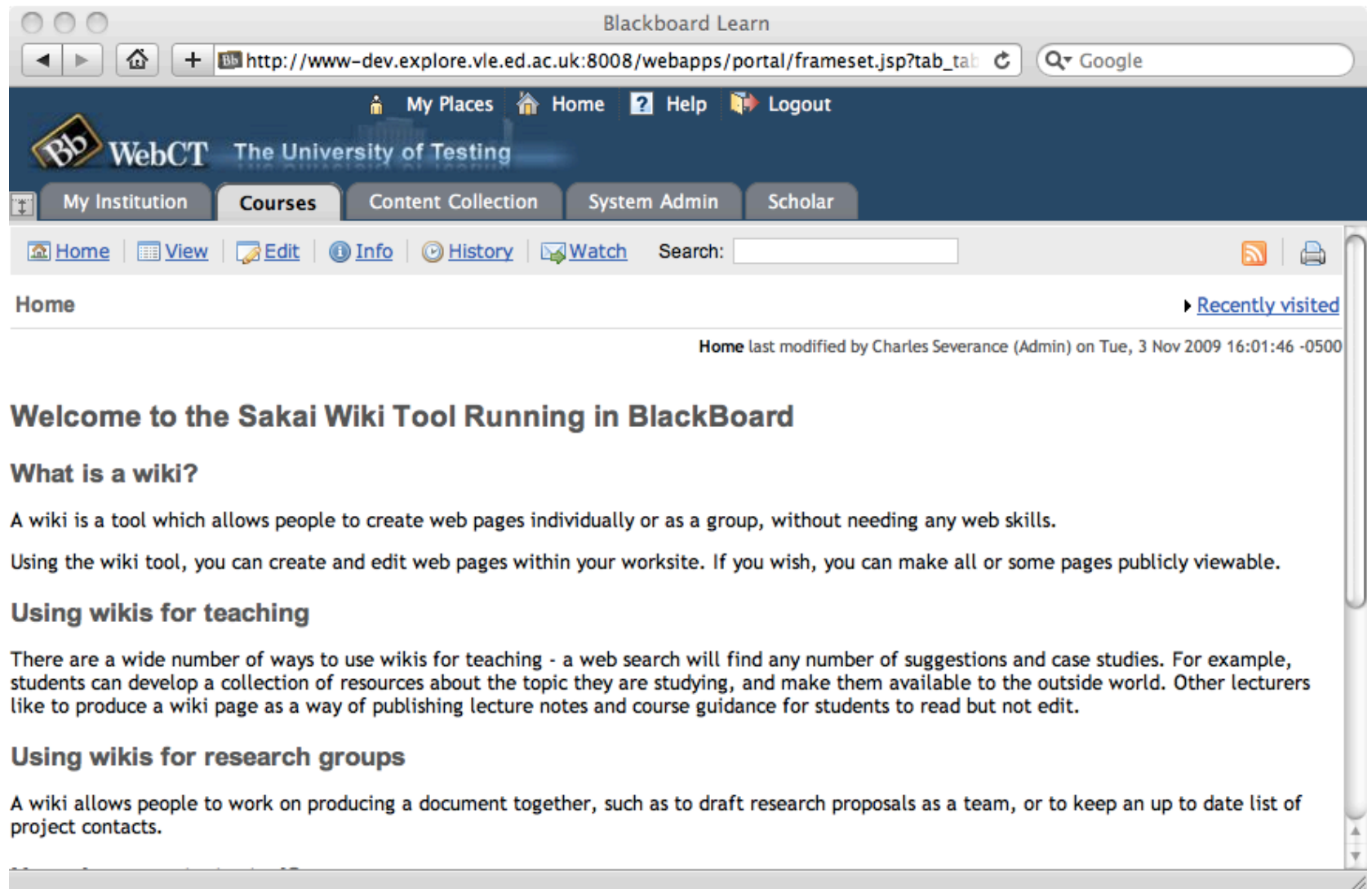
In addition to the 2s orbital, the second shell also contains three 2p atomic orbitals, one oriented in each of the three spatial directions. These orbitals are called the 2p_x, the 2p_y, and the 2p_z, according to their direction along the x, y, or z axis. The 2p orbitals are slightly higher in energy than the 2s, because the average location of the electron in a 2p orbital is farther from the nucleus. Each p orbital consists of two lobes





Basic LTI Building Block / PowerLink

- Stephen Vickers - U. Edinburgh
 - Blackboard Building Block and PowerLink
 - <http://www.spvsoftwareproducts.com/bb/basiclti/demo.swf>
 - <http://projects.oscelot.org/gf/project/wct-basiclti/>
- Uses the IMS-Provided utility code
- Excellent example of the "Virtual Tool" pattern



The screenshot shows a web browser window titled "Blackboard Learn". The address bar contains the URL: http://www-dev.explore.vle.ed.ac.uk:8008/webapps/portal/frameset.jsp?tab_tab. The browser's search bar contains the text "Google". The page header includes navigation links: "My Places", "Home", "Help", and "Logout". Below this is a banner for "WebCT The University of Testing". A secondary navigation bar contains "My Institution", "Courses", "Content Collection", "System Admin", and "Scholar". A third navigation bar includes "Home", "View", "Edit", "Info", "History", "Watch", and a search box. The main content area starts with a "Home" link and a "Recently visited" link. A message states: "Home last modified by Charles Severance (Admin) on Tue, 3 Nov 2009 16:01:46 -0500". The main heading is "Welcome to the Sakai Wiki Tool Running in BlackBoard".

Welcome to the Sakai Wiki Tool Running in BlackBoard

What is a wiki?

A wiki is a tool which allows people to create web pages individually or as a group, without needing any web skills.

Using the wiki tool, you can create and edit web pages within your worksite. If you wish, you can make all or some pages publicly viewable.

Using wikis for teaching

There are a wide number of ways to use wikis for teaching - a web search will find any number of suggestions and case studies. For example, students can develop a collection of resources about the topic they are studying, and make them available to the outside world. Other lecturers like to produce a wiki page as a way of publishing lecture notes and course guidance for students to read but not edit.

Using wikis for research groups

A wiki allows people to work on producing a document together, such as to draft research proposals as a team, or to keep an up to date list of project contacts.



Blackboard Learn

http://www-dev.explore.vle.ed.ac.uk:8008/webapps/portal/frameset.jsp?tab_tab_group_id=

My Places Home Help Logout

WebCT The University of Testing

My Institution Courses Content Collection System Admin Scholar

Build Teach Student View PowerLink demonstrations - BasicLTI Help

Course Tools

Course Content

(H) = Hidden

Instructor Tools

- Manage Course
- Grade Book
- Grading Forms
- Group Manager
- Tracking
- Selective Release

Your location: Sakai Wiki - local > Sakai Wiki - local

Home View Edit Info History Watch Search: []

Home [Recently visited](#)

Home last modified by Charles Severance (Admin) on Wed, 4 Nov 2009 07:07:41 -0700

Welcome to the Wiki Tool

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Applet bcApplet started



BasicLTI - Sakai



- Sakai BasicLTI Consumer Portlet available (Expected in 2.7)
 - <https://source.sakaiproject.org/contrib//csev/trunk/basiclti/>
 - Example of using the IMS Utility code
- Support for Basic LTI in Sakai/Melete 2.7
- Sakai BasicLTI Tool Provider in Sakai 2.7

Demo - LTI

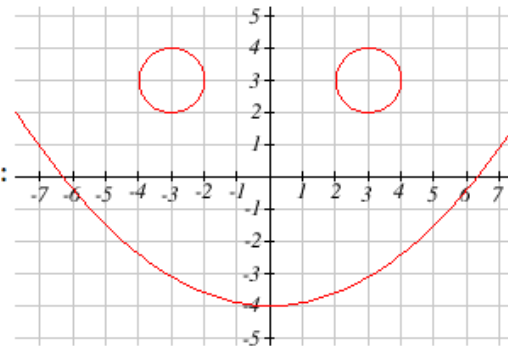
Welcome!

Welcome to this iMathAS / WAMAP demo course. If you are seeing this, then you've probably done an LTI course placement.

Let's make sure all the features work:





An equation: $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

A few graphs:



<http://www.imathas.com/>



- [Home](#) 
 - [Site Info](#) 
 - Modules 
 - [Help](#) 
- Users present:
Sakai Administrator

Modules

[View](#) [Author](#) [Manage](#) [Preferences](#)

 Viewing student side...

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iMathAs Example Launch

Demo - LTI

Sakai Administrator

iMATHAS

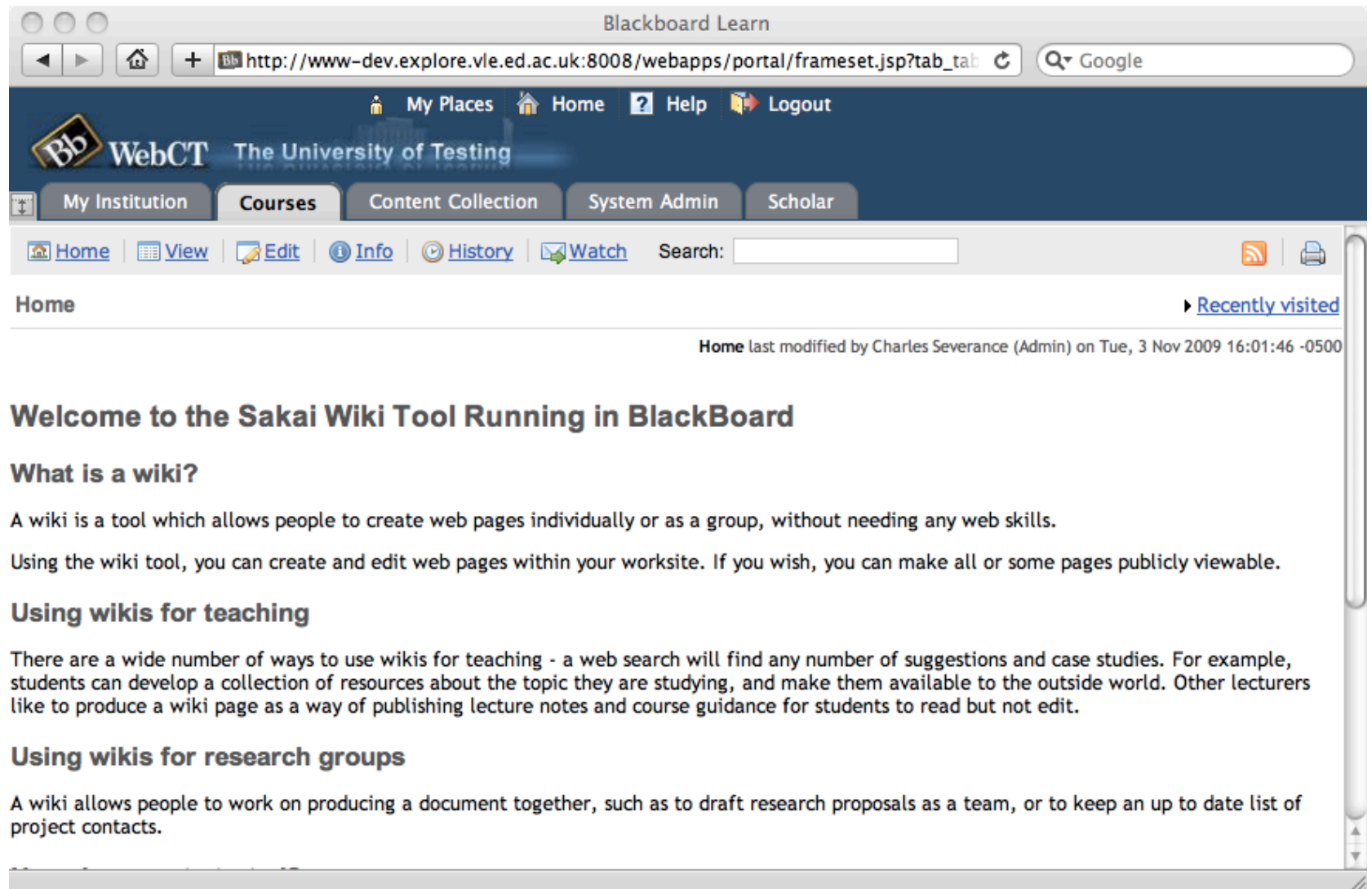
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- IMS Basic LTI and IMS Common Cartridge are on the roadmap for Moodle and development work has started
 - It should appear in Moodle 2.0 out of the box
 - Basic LTI should be back ported to 1.9,1.8 for a dot release



Basic LTI Coverage (approximate)

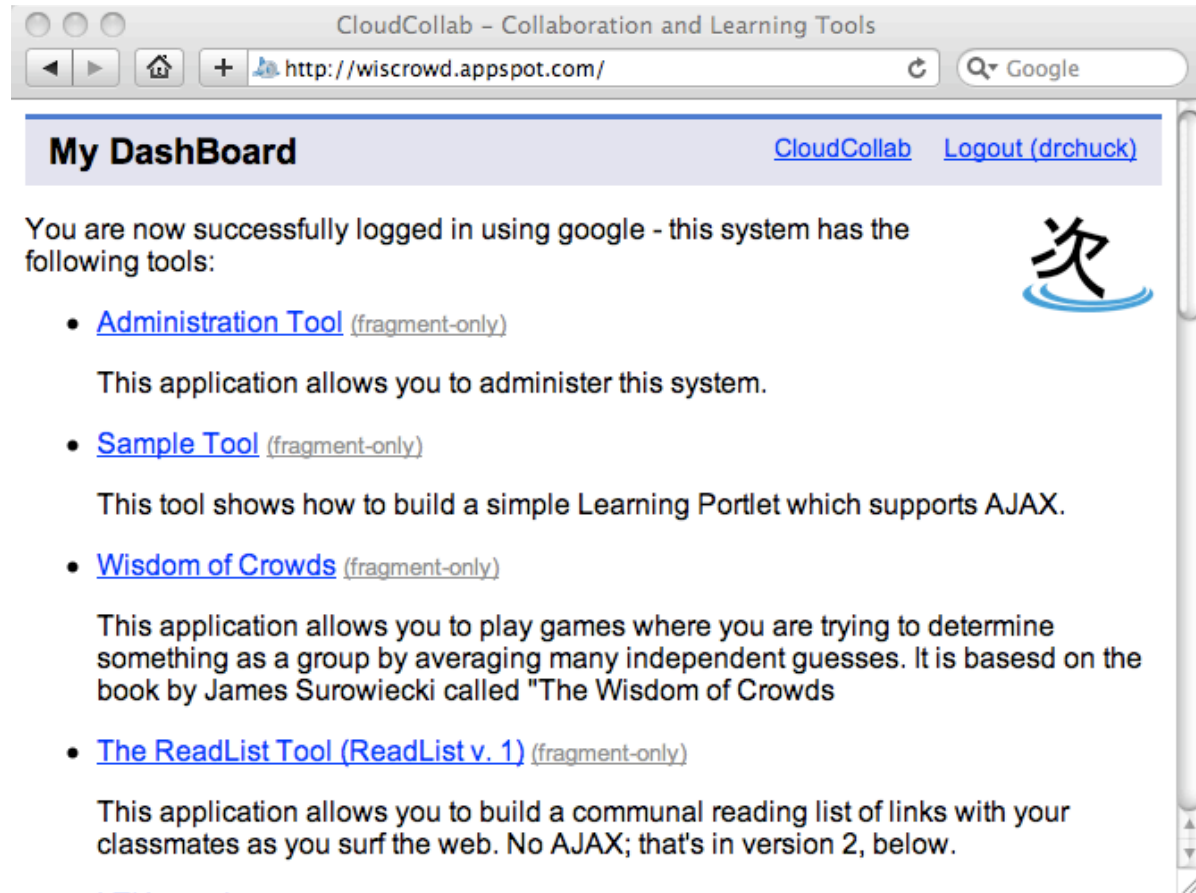
- Desire2Learn
- Sakai 2.7
- Moodle 2.0, 1.9, 1.8
- Blackboard 8
- Blackboard 9
- WebCT Vista
- ANGEL Learning
- Liferay
- uPortal

These are just what I
hope will be available
within 3-6 months.



Where Do Tools Come From?

- Tool Vendors - Write once run anywhere
 - As LMS's ship with Basic LTI out of the box, this becomes the low-effort solution for the Wimba's of the world
- Faculty / Students / Tech Support
 - PHP Tool Kit
 - Python / Google App Engine Tool Kit



CloudCollab - Collaboration and Learning Tools


http://wiscrowd.appspot.com/ Google

My Dashboard

[CloudCollab](#) [Logout \(drchuck\)](#)

You are now successfully logged in using google - this system has the following tools:

- [Administration Tool](#) (fragment-only)
This application allows you to administer this system.
- [Sample Tool](#) (fragment-only)
This tool shows how to build a simple Learning Portlet which supports AJAX.
- [Wisdom of Crowds](#) (fragment-only)
This application allows you to play games where you are trying to determine something as a group by averaging many independent guesses. It is based on the book by James Surowiecki called "The Wisdom of Crowds"
- [The ReadList Tool \(ReadList v. 1\)](#) (fragment-only)
This application allows you to build a communal reading list of links with your classmates as you surf the web. No AJAX; that's in version 2, below.





Up Next...

- IMS Basic LTI and IMS CC puts unprecedented ability to teach and innovate in new ways in the *hands of students and teachers*
- This is moving quickly into the marketplace
- Questions...
 - cseverance@imglobal.org