CATSpace: Sharing, Discovering, and Improving Laboratory Materials through a Social Network Ricardo Quintana-Castillo, Dr. Stephen Edwards, and Dr. Manuel Pérez-Quiñones

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CATSpace is a social networking web site that enables the dissemination, evolution, and discovery of laboratory materials for computer science education. Our objective is to investigate the impact that a social network for instructors and students has on the improvement of these types of documents. CATSpace promotes the refinement of materials through open, document-specific discussions and versioning. It also empowers students to affect the evolution of materials by allowing them to provide constructive feedback based on their experiences. Its tied integration with Web-CAT, a widely-used automated grading tool, promises to provide a strong user base for community growth and future research.

When users login to CATSpace through Facebook's application menu on the left side, the first thing they will see is a home page that provides several options for exploration and discovery.

In center stage, there is a feed with the latest user activity in CATSpace. It aggregates different types of events (e.g. comments, uploads, etc.) as well as CS education news from outside of CATSpace.

Example: the current CATSpace user responded to another user's comment about the Circular Array for Queues assignment.

Sharing

In CATSpace, CS instructors can share assignments by uploading them through a simple web interface.

Five easy steps to upload an assignment: 1. Create your properties file 2. Copy the properties file and all assignment files in one directory 3. Create a zip file of the directory 4. Go to the web interface, add information in the upload form 5,. Select the zip file, and press "Upload"

CATSpace					
	Home	Assignments	Community	Upload	
Upload Assignment Title: Barnes-Hut Algorithm Synopsis: Implement the Barnes-Hut al NBody.java, based on NBody	gorithm. (Brute.java,	that performs		Step Firs	s t: Create your properties file
the Barnes-Hut algorithm. For each time step of the simulation (use dt = .1), create a new Barnes-Hut tree from scratch, and insert all of the bodies. Since the Barnes-Hut tree represents a finite region in the plane, only insert those bodies that are inside the universe. After inserting all of the bodies, reset the net force acting on each body and call <u>updateForce()</u> to recalculate it. Then, update the positions of the bodies					ond: Dump the properties and all assignment files in directory rd: Create an archive (e.g. of the directory
and plot them.				opti Fift	rth: Add required and onal attributes in the form and final: Choose the zip from your computer and oad it
Add optional attributes					

Properties files are used in Java to store setup parameters for an application. Each line (property) holds the form of a key = value pair.

facebool

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Birthdays

more

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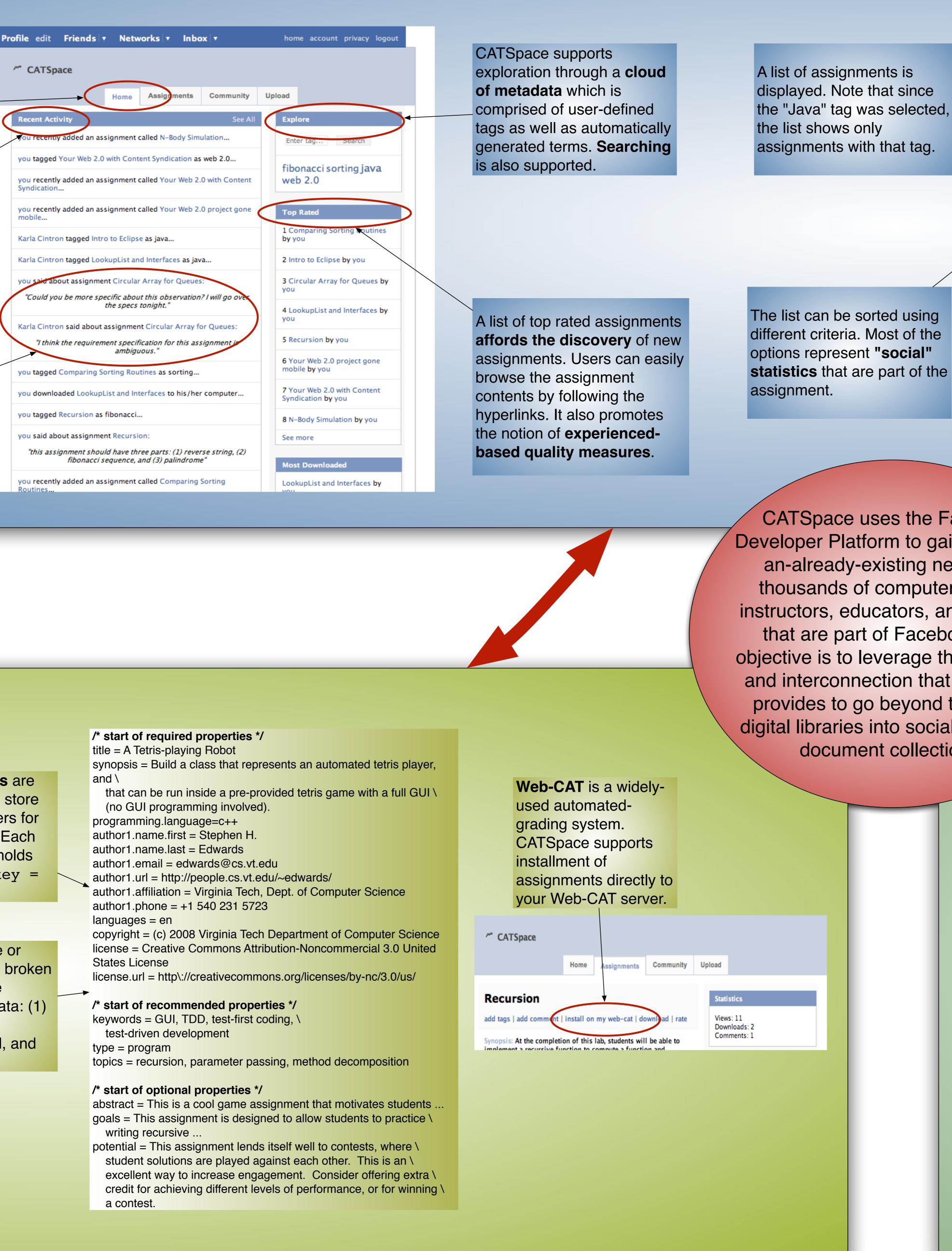
Marketplace

Applications edit

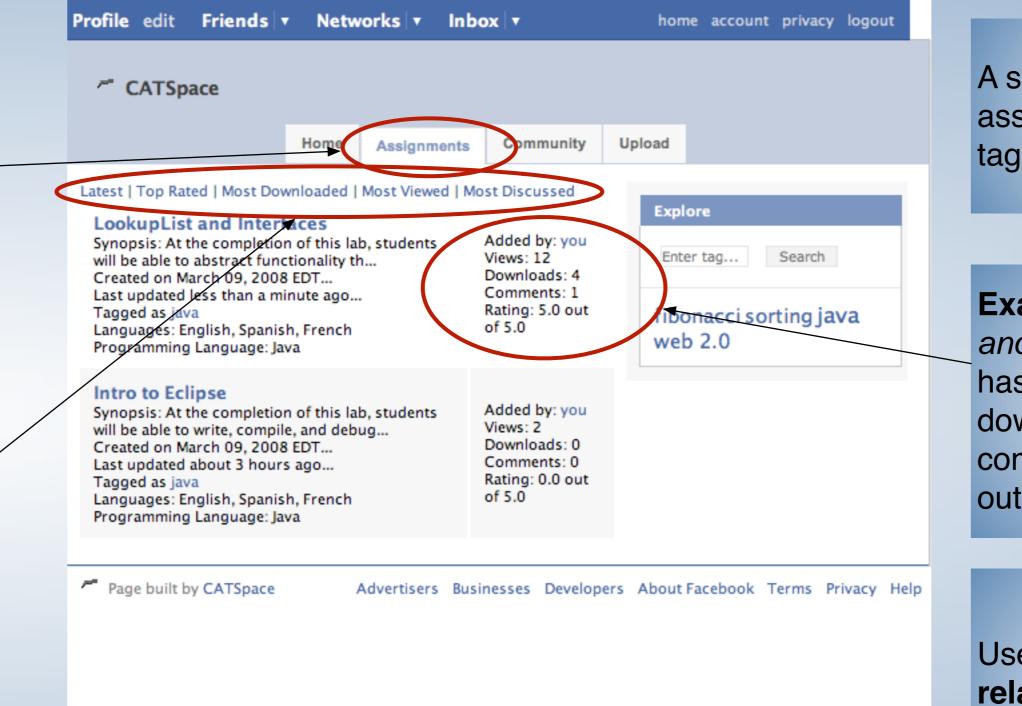
A properties file or metadata file is broken down into three categories of data: (required, (2) recommended, and (3) optional.

Upload

/Users/Ricardo/Desktop/barnes_hut_algo.zir browse



Discovering

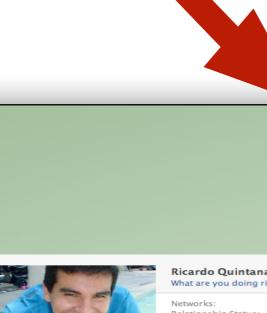


A single view of an assignment shows statistics tags, and other metadata.

Example: the *LookupList* and Interfaces assignment has been viewed 12 times, downloaded 4 times, has 1 comment, and it is rated 5 out of 5.

Users can also explore related assignments suggested by CATSpace

CATSpace uses the Facebook **Developer** Platform to gain access to an-already-existing network of thousands of computer science instructors, educators, and students that are part of Facebook. The objective is to leverage the exposure and interconnection that Facebook provides to go beyond traditional digital libraries into socially evolving document collections.



	Ricardo Quintana What are you doing right now?				
	Networks: Relationship Status:	None Married to Karla Cintron (no network)			
	▼ Mini-Feed				
	Displaying 5 stories.				
	Yesterday				
Pile and	Ricardo add an assignment called N-Body Simulation. 11:3				
- And	Write a program NBody.java that reads in				
	March 8				
10. A	हैतु Ricardo and Julio	César Quintana are now friends. 12:00an			
	February 12				
otos of Me (17)	 Ricardo added th 	e Birthdays Book application. 10:36am			
ne now.	February 11				
🎳 🍂 👎 📟		e Causes application. 12:30pm			
ds	January 21				
ds in Other Networks	Ricardo added th	e Marketplace application. 6:57pm			
s with the most friends	Information				
, PR (22)	► Causes				
Tech (15) agüez (12)	▼ Education				
eepsie, NY (3) k, NY (2) s, VA (2)	Education Info [edi Grad School:	t] Virginia Tech '10 PhD, Computer Science			

Scenario: (3) Ricardo sees Karla's comment on CATSpace's home page.

Scenario: (1) Ricardo added an assignment called *N*-Body Simulation

Scenario: (2) Karla downloads N-Body Simulation, uses it in class and adds the following comment:

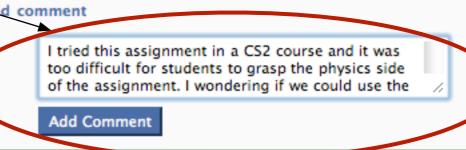
"I tried this assignment in a CS2 course and it was too difficult for students to grasp the physics side of the assignment. I wondering if we could use the same programming concept but with a different application topic."

N-Body Simulation

add tags | add comment | install on my web-cat | download

mopsis: Write a program NBody.java that reads in the universe from standard input using StdIn, simulates its dynamics using the leapfrog scheme described above, and animates it using our StdDraw. Maintain several arrays to store the data. To make the computer simulation, write an infinite loop that repeatedly updates the position and velocity of the particles. When plotting, consider using StdDraw.setXscale(-R, +R) and StdDraw.setYscale(-R, +R) to scale the physics coordinates to the screen coordinates.

Author: you ting: 0.0 out of 5.0 mments:



Scenario: (4) Ricardo replies to Karla's comment with the following message: "Karla: Thanks for sharing your experience. I think you have a great point regarding the difficulty in understanding physical forces. I will give this some thought and I will get back to you."

Web-CAT & CATSpace are supported in part by NSF, under grants DUE-0618663 and DUE-0633594 | Built with Ruby on Rails!

Profile edit Friends v Networks v Inbox v	home account privacy logout		
CATSpace			
Home Assignments Community U	Ipload		
LookupList and Interfaces	Statistics		
add tags add comment install on my web-cat download rate Synopsis: At the completion of this lab, students will be able to	Views: 8 Downloads: 1 Comments: 1		
abstract functionality through the use of an interface and define multiple cooperating classes to solve a solution	This assignment has been		
Author: you	tagged as		
Rating: 0.0 out of 5.0	java		
Comments: add comment	Other related assignments		
Ricardo Quintana wrote	LookupList and Interfaces		
We used this lab at the CS1 course this semester at Virginia Tech and it worked like a charm. Students were very engaged throughout the lab.	Intro to Eclipse		
reply			

The following are some of **CATSpace** features that are still work in progress: **1. support for student** contributions 2. provide an external user interface (outside of Facebook) **B. expand it to use Google's OpenSocial** Platform 4. provide a community view that allows for more direct user interaction 5. refine upload/sharing process 6. support versioning through the user interface

Improving

Home Assignments Community Recent Activity Carla Cintron said about assignment <u>N-Body Simulation</u>: "I tried this assignment in a CS2 course and it was too difficult for tudents to grasp the physics side of the assignment. I wondering i we could use the same programming concept but with a different application topic. **N-Body Simulation** add tags | add comment | install on my web-cat | download | ra synopsis: Write a program NBody.java that reads in the universe from standard input using StdIn, simulates its dynamics using the eapfrog scheme described above, and animates it using our tdDraw. Maintain several arrays to store the data. To make the computer simulation, write an infinite loop that repeatedly updates he position and velocity of the particles. When plotting, consider using StdDraw.setXscale(-R, +R) and StdDraw.setYscale(-R, +R) to scale the physics coordinates to the screen coordinates. Author: Karla Cintron Rating: 0.0 out of 5.0 omments: add comment Thanks for sharing your experience. I think you a great point regarding the difficulty in understanding physical forces. I will give this some thought and I will get back to you. Add Comment Karla Cintron wrote

CATSpace

March 10, 2008 EDT I tried this assignment in a CS2 course and it was too difficult for students to grasp the physics side of the assignment. I wondering if we could use the same programming concept but with a different application

Tagging: CATSpace allows users to tag assignments. This creates a folksonomy that enables the creation of userdefined connections and relationships between assignments as well as people.

The relationships created between assignments that are tagged similarly could allow instructors to improve them through the exchange of ideas.

CATSpace

Home Assignments Community

Your Web 2.0 project gone mobile

add tags | add comment | install on my web-cat | download | rate

Web 2.0, ruby on rails Add Tags

psis: Complete a front end to program 1 so that information can be accessed from a WAP device and from a VoiceXML device. The WAP/WML interface might focus strongly on a browsing devices, so that users can look up information from your site. The VoiceXML might be less of a browser, and more of a direct access to a few key particular pieces of information. You might want to implement some simple store/email mechanism via VoiceXML. Also, consider how text messaging can be sent to your cell phone device, in the context of what your application is doing.

Author: you

omments:

Rating: 0.0 out of 5.0

