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TWiki Tip of the Day

Escaping TWiki rendering

Use the verbatim tag to surround code excerpts and other formatted text with verbatim and /verbatim ... [Read on](#)

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r19 - 27 Oct 2007 - 15:59:37 - KevinTeske

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Biology in VR

Meta!Blast is an educationally interactive tutorial and video game that will be used to teach high school and undergraduate students about plant cells. Due to an increasing number of students adapting to computer based technology, online educational tools such as Meta!Blast will blend together video games and educational classroom activities. Plant cell characteristics such as biochemical reactions and organelles will be taught to students by using specific organelle characters. The organelle characters will instruct the students to save the cell by learning cellular processes in the tutorial and then applying their knowledge in the video game. Concluding each organelle tutorial, quizzes will help reinforce key cellular events. Meta!Blast will be free and accessible on the internet by 2008; the tutorial and game is intended to be used in classrooms, homes, and science centers.

Users: High school and college students

http://metnet.vrac.iastate.edu/MetNet_Meta!Blast.htm

Your Challenge

The primary challenge of the group of students assigned to Meta!Blast is to create a GUI library to facilitate creating an interface using OpenGL on both 2D screens and in 3D virtual reality environments.

[Feature Suggestions](#)

The Team

Eve Wurtele	Faculty member
David Kabala	Graduate student mentor

Alden Peterson Intern
Jonathan Flory Intern
Lee Zaniewski Intern

Friday, August 3rd

We just have our presentation today. It went very well. It sounds like all three of us will continue to work on the project. Also, here are some screen shots of our project.

- [SGUIshot1.bmp](#)
- [SGUIshot2.bmp](#)
- [SGUIshot3.bmp](#)
- [SGUIshot4.bmp](#)
- [SGUIshot5.bmp](#)

-Jon F

Thursday, August 2nd

Yet again, many things have happened for the project. A slew of new features have been implemented, old features have become more functional, and preparations for tomorrow's presentation have begun. We might not have the flashiest project out of the five, but we are certainly going to attempt to make it look that way. Alden is working on the super awesome demonstration that contains most of the features of the library, and alters various features of the menu and the scene outside of it. And how are we going to display this tutorial? Well, we are getting a big screen and projector and putting it on the wall of course. That way everybody can see it on a stupendous scale. Well, now to practice our lines for tomorrow...

-Jon F

Tuesday, July 24th

The poster has been completed, our t-shirt for the entire SPIRE-EIT group has been designed, button clickability is actually here, and even menus in 3d space have arrived. We are still moving at a rather quick rate. It was slightly unfortunate that an example screen shot of our program didn't fit into the design. We have all been working together very well, and I personally like the group dynamic. So far, for me at least, this has been a very enjoyable experience, and I have learned a lot about collaborating with other people on a project. The end of the summer is nigh, and still more work needs to be done.

-Jon F

Friday, July 19th

Button clickability is just about here! We actually seem to be ahead of schedule, if we were going just by our spec document. Well, ahead of schedule in some areas. We really need to finish that poster by the end of today...

Personally, I really hope that we get some implementation working for getting it to display in 3d space, because that was actually one of the larger points of the whole project, although making the buttons appear just on the front of the screen in a vr setting would still work. Ultimately, the end product will only be as good as the amount of time we put into it.

- Jon F

Friday, July 13th

This morning the entire Meta!Blast team met for the first time. It was interesting to hear from what the other people are doing, and to see the ambitious goals that they have set for their work.

We also worked with David last night to finish the [Spec Document](#) for our project. We have a lot to do over the next few weeks to get the bulk of our project done. There are many late nights in the future for our group to get this whole project finished...

- Alden

Friday, July 6th

We've gotten underway getting more heavy amounts of things done on the project now. I personally have been working on creating tutorials for the user interface we are developing, which is fun. A bit tedious at times, as every time I change formatting in how I write stuff I have to go through every one that exists already and make sure that they all match. Which is ok, just time consuming. Lee and Jon have been working on implementing the components to various things.

Not much else to report, it'd be fun to see Meta!Blast in 3D in the C6 sometime though if at all possible.

- Alden

Friday, June 29th

Well, what can I say? We have a few more graphics, tutorials, and layouts to work on. Oh yeah, we presented our final graphics projects yesterday. Here are a few pictures of the screen shots. Maybe I'll set them up to show on the screen later, but for now, just download them to view them. You can also download the actual code to play the game by going to the computer graphics course assignment submissions page.

- [archery1.bmp](#)
- [archery2.bmp](#)
- [archery3.bmp](#)

- Jon F

Wednesday, June 27th

Programming has commenced on the SGUI application, vaguely based on the open source GLUI. Tasks have been divided, and our parts actually come together to draw things on the screen. After we are done making SGUI, we will have created a library that will be usable in many different places, including the VR and a computer screen. In addition to our work on this project, we are making a simple archery range program for our graphics class. That project is about done as well, and we did a much better job than the last time making it unbreakable. Check out the program.

- Jon F

Friday, June 15th

Unfortunately, not much has happened this week to further our project

goals. But, I have been looking into leveraging the GLUI open source library which already contains a lot of what we would need to continue this project. If my idea works, we would not have to program all of the buttons and panels, instead we would be able to simply rewrite the window interface to do what we want it to do. Hopefully we will be able to work out a more detailed plan of how to make this work by the next time we have a meeting with David.

- Jon F

Wednesday, June 13th

We again met with David yesterday, and saw a brief preview of what Meta!Blast is going to look like in the C6. It was very impressive even without 3D images. The C6 is really an amazing machine. The resolution on the various projector screens was somewhat insane, it took getting relatively close to the screen before image quality started to suffer. Unfortunately there was something wrong with the C6 so after the demo of the Meta!Blast cell, we were unable to see anything.

I'm looking forward to working on this project. I'm slightly worried that my inexperience with programming is going to make me useless for this, but am confident that I will learn either in the classes here or on my own enough to make do.

- Alden P

Thursday, June 7th

We met with David on both Tuesday and today this week. On Tuesday, we brainstormed about some of the possible objects we will want in the library we are making. These things are like text boxes, buttons, scroll bars, etc., and include more complex things, like combinations of the above objects. We also did some more work learning the basics of OpenGL. Today, we began work on creating the documentation for our project. We began a document planning the classes and interfaces with inheritance of the library, what this still requires a lot of work, such as the functions and variables to be used in the classes. I will try to post the document so that everyone can see it tomorrow. We also saw the inflatable dome and was shown some interesting 3D images on it. This dome seems very neat as it could be inflated and set up to show in 3D in an hour. We tried again to see the C6, but it wasn't working, so we'll try that again soon.

- Lee Z

Wednesday, May 30th

Today was the first day that we talked with David Kabala about our task for this summer. We discussed the general purpose of this project, and a few of the details of this project. Currently, our task isn't specifically decided upon yet, but it seems very possible that we will work on a GUI to help the program interact with the user, and hopefully this GUI will be usable in other VR programs in the future. Also, we got our computers to compile and run c++ programs using the OpenGL library today, and took a brief tutorial of how to do a few things in OpenGL. Our next scheduled meeting time is on Sunday at 6:00, where we will get to view all of the demo material for the program thus far.

- Jon F

- [MetaBlast.pdf](#): Biology in VR Project Poster

I	Attachment	Action	Size	Date	Who	Comment
	SGUIshot1.bmp	manage	3742.6 K	03 Aug 2007 - 19:29	JonathanFlory	
	SGUIshot2.bmp	manage	3742.6 K	03 Aug 2007 - 19:30	JonathanFlory	
	SGUIshot3.bmp	manage	1872.8 K	03 Aug 2007 - 19:30	JonathanFlory	
	SGUIshot4.bmp	manage	2373.1 K	03 Aug 2007 - 19:30	JonathanFlory	
	SGUIshot5.bmp	manage	3023.5 K	03 Aug 2007 - 19:30	JonathanFlory	
	Spec_Document.doc	manage	16.0 K	13 Jul 2007 - 14:41	AldenPeterson	Meta!Blast_Spec_Doc

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