SIMULATION OF WEB BASED APIs FOR THE REMOTE OPERATION OF BUGSCOPE

WHAT . WHY . HOW .

WHAT IS THE BUGSCOPE?
The Bugscope project provides free interactive access to a scanning electron microscope (SEM) so that students anywhere in the world can explore the microscopic world of insects. This educational outreach program from the Beckman Institute's Imaging Technology Group at the University of Illinois supports K-16 classrooms worldwide.

WHY IS IT THE BUGSCOPE?
Insects are the right size and work well in the microscope. They're easy to find on nearly every playground or backyard. They have great detail at high magnification that most people have never seen. They fit into most schools' science curriculums. And finally, because kids are fascinated by bugs!

HOW IT WORKS?

Basic idea of having two PCs architecture is to maintain stability and reliability of Microscope PC, which interacts with microscope hardware.

Customer does not have “Administrator” rights on Microscope PC. Customer/Third party has “Administrators” rights on Support PC. Third party interface library on xT platform is called XTLib. XTLib is in-proc COM library.

The XTLib object model consists of root level objects and subordinate objects. Root level objects are simple COM objects that are directly instantiable and their COM interface retrievable by a client application through COM.

Subordinate objects are similar in interface and functionality to root level objects except that they cannot be directly instantiated by a client application.

The work involves using a third-party computer and xtllib to create objects that correspond to different functions of the microscope. This is achieved programatically through C++, C# or Visual Basic.

For instance, CoCreateInstance() is used to call and retrieve Root level objects and their COM interface through COM.

By the end of the project, the Microscope can be controlled by anyone with access and used to educate and inspire students and young researchers.

REFERENCES: Bugscope Website. Retrieved from http://bugscope.beckman.uiuc.edu/

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