Assignment 1

CAVE2

The CAVE2 is part of UIC's Electronic Visualization Laboratory. One advantage of CAVE2 is the ability to create virtual worlds in which users can interact with objects that are part of the virtual world. CAVE2 is also useful for people to observe models of objects that otherwise cannot be modeled in the real world with a physical model. An example of this would be DNA. An actual DNA is way too small and cannot be modeled in the physical world. However, doctors can model a patient's DNA through CAVE2 to make decisions about prescribing medications.

A disadvantage of CAVE2 is that it is not as interactive as VIVE and HoloLens. CAVE2 does not allow users to become immersed in the virtual reality world. The system only allows its users to step back and become observers of the virtual world instead of participants in the virtual world.

VIVE

The VIVE system is one of the most interactive systems. The VIVE system allows users to truly immerse themselves into the virtual world. By using the VIVE, it is easy for users to do some basic tasks that they can also do in the real world. A major benefit of application for VIVE is for students in the medical profession. Practicing surgeons can have the opportunity to practice surgery virtually without taking risks on human patients. A software similar to this is Froguts, where users can dissect a virtual frog.

A major drawback of VIVE is safety. While you immersed in the virtual world, you are completely void of the outside world. Therefore, it is easy to get into accidents with surrounding objects. This was demonstrated in class via a YouTube video.

HoloLens

The HoloLens allows objects on paper to come to life. This was demonstrated by coloring objects on paper and using the Quiver Application to bring those objects to three dimensions. A major advantage of HoloLens is the ability to bring objects to life. Objects that are traditionally 2D on paper can be represented in 3D. This type of technology can be useful for a chemistry teacher that wants to demonstrate chemical reactions.

A major drawback is that HoloLens is quite limited in its ability. It can only work under certain scenarios and cannot bring all 2D objects into a 3D world. A lot of these objects are preprogrammed. In the real world, this means that you would have an army of developers creating 3D objects for every 2D object made available.