

The Visible Human Dissector

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As the original volumetric color data from the Visible Human Male continues to be classified more thoroughly, the race continues for applications that can interact with the data in an efficient, educational, and practical way. The Visible Human Dissector was an incredible breakthrough in this regard, allowing for a simple interface with which to explore the anatomical structures of the human body. With a mere mouse click, anyone can dig through the human torso at his or her own pace, learning the anatomical names, the systems, and the spatial relationships of everything that has been classified. Using a condensed, pre-rendered ray tracing of the data, the application can hold more structures and run faster than if we had used polygonal models.

Advancements in the Visible Human Dissector have continued to give this application more power. The volume can be rotated, the user can zoom closer, the outer skin opacity can be adjusted so as to see the underlying structures, the program can run in stereo, and the image can be saved at any time as a Tiff file for use in PowerPoint or other applications. Animations can be constructed and saved by the user to build up or dissect the body with any desired order or amount of anatomical structures.

With the announcement of the grant award for the Visible Human Dissector-Undergraduate Edition from the National Science Foundation in January of 2001, more progress with this application was set in motion. Work began to place this program in the anatomy classrooms of nine undergraduate institutions in Colorado. The program itself was redone with a new interface, allowing users greater ability to manipulate the body (zoom closer, make other organs transparent, choose structures from an index list, etc). The animation building process was also improved, allowing for text to be added to the scripts as well. Furthermore, the concept of accessing anatomical data based on systems and regions was implemented such that a region, for example the “right upper extremity”, can be removed or added instantly without removing or adding every individual component of that region. Workshops were conducted with faculty from the nine institutions where training and feedback took place and this fall the program is being piloted in each of their classrooms.

This talk will present the power and attributes of the new VH Dissector application, as well as examine the preliminary data that has been collected from the use of the VH Dissector in Colorado Undergraduate classrooms.

The following figures show screen shots from the VH Dissector. Figure 1 shows the interface for accessing components of various systems (left) and an image of the arteries and veins of the torso, with the heart at the center (right). Figure 2 shows a pre-scripted animation that has built up major nerves from the spinal cord and is now adding on vertebrae (right) and the corresponding commands that run this script (left).

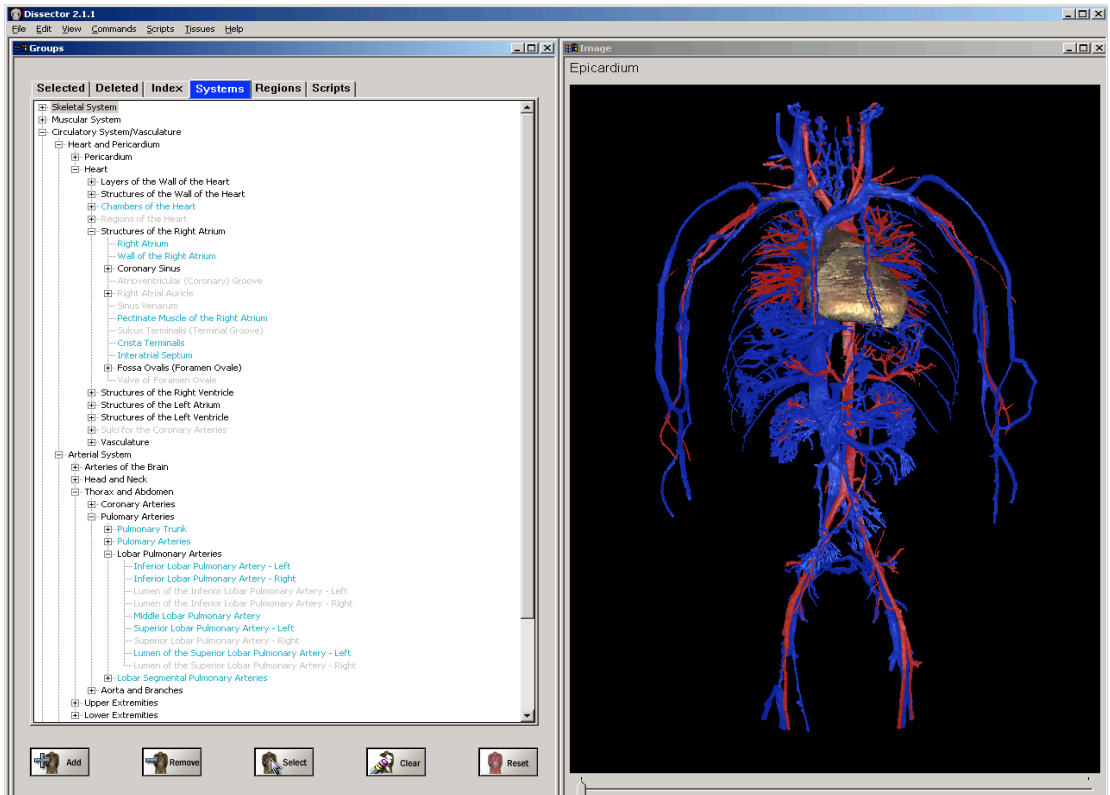


Figure 1 (above) - Figure 2 (below)

