2016

Human Versions

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Human version 1

Path: /web/human1
URL: venus.skidmore.edu/human1

Basic code written by Chris Doherty (Skidmore '99) under an AT&T grant. I then polished up his code to make it more functional as a public site.

This version implemented the basic web wrapper around the Fortran code but added no features beyond what already exists within the Fortran. This edition was written in 100% Perl.

Note: The home page for the archival editions can still be viewed, but the Perl code does not execute because the current server is not configured to execute .cgi scripts.

Version 2

Path: /web/human2
URL: venus.skidmore.edu/human2

This edition adds some online documentation from Roy Meyers and adds a few pre-defined experiments as a means to introduce the model.

The internals for this edition begins support for multiple actions. A user can now adjust more than one item before running the model through a new iteration.

Version 3

Path: /web/human3
URL: venus.skidmore.edu/human3

- Version 3.1, designed by Jon Cotton, Skidmore '02, coded by LDG 5/2001
- New 3/22 - 3 Simulations 1&2) Congenital cardiac shunts 3) Anemia

This edition also adds activity logging by writing to log.txt This log covers from 12/5/2000 to 4/25/2002. The log records only date/time, IP address, length of command string. This last metric provides a sense of the complexity of the model being run without any specific detail.

Version 4

Path: /web/human4
URL: venus.skidmore.edu/human4

Version 4.0, adds data graphing, by LDG 1/2002

The early graphing was accomplished via server-side Tomcat Java Servlet. We used this initially as a means to avoid the need to install charting software on each client computer. Furthermore, the server-side code assured consistency across all browsers. When someone wanted the data charted, it called graphit.cgi that composed the necessary servlet commands and sent them to the Tomcat server for execution. The actual charting

software was “rchart” purchased from “Java4less” – a commercial site that sold servlet code for about $20.

The servlet charting worked relatively well, but it did require that the Tomcat server remain available along with the usual Apache services. The rchart settings are tricky to set even though they offered a small number of options. The charting relied on a headless implementation of X windows. This often required technical adjustments whenever a major OS update was performed on the web server.

Note: The servlet-based graphing is no longer functional because the Tomcat server is not installed on the current system. The rchart servlet code has not been retained.

Version 4a

Path: /web/human4
URL: venus.skidmore.edu/human4

This edition is also known as version 4.5

This edition is mainly technical improvements to the code. I do not believe there are any major changes in functionality.

Version 5

Path: /web/human5
URL: venus.skidmore.edu/human5

- Version 5.0 adds 6 variable plotting and normalized data plotting (by LDG 1/18/05)

This edition abandons the rchart servlet, replacing it with gnuplot. This is freeware graphing software that creates a .png image. Here, graphing is accomplished by piping the settings and data to gnuplot that then writes the resulting image file to a tmp directory. The application code then includes a link to that file within the html sent back to the client.

Gnuplot also made feasible the display of multiple plots within the same graph, thereby making it easier to see how variables fluctuate relative to each other. It also added the ability to plot actual values vs. normalized values. Normalizing each variable is useful when one variable is very large relative to the others.

Version 6

Path: /web/human6
URL: venus.skidmore.edu/human6

Version 6 adds 6 variable flexible graphing and save/retrieve experiment capability (coded by LDG - 3/05)

This edition adds database support to human. This edition permits users to create a free login account that can then be used to save and retrieve experiments. The intent here is two-fold. Users can return to a partially-completed experiment to resume work on it AND complex experiments can be created ahead of time for classroom discussion.

This edition introduces the admin module. This hidden directory provides a series of web pages both to monitor human usage and to update the help pages and other application resources.

The coding for this edition is mixed. The original model remains in perl while the database calls were written in php. The php code is 100% mine with some of it carried forward from other php database applications that I had written earlier.

Version 7

Path: /web/human7
URL: venus.skidmore.edu/human7

Version 7.0 migrates web-Human to Linux (LDG).

This edition marked the retirement of Skidmore's Unix Sun servers in favor of Linux. This took place around 2007 when human moved to its own virtual server.

This edition adds online help for all of the human variables and help screens for manipulating sets of human variables (e.g. "How to do exercise"). The help content is managed through the admin module from version 6 and the database collects logs of how frequently each help screen is accessed.

Version 8

Path: /web/human8
URL: venus.skidmore.edu/human8

Human 8 is the first edition that is 100% PHP. The major work was to redo the code with only minor user interface changes.

Version 9

Path: /web/human9
URL: venus.skidmore.edu/human9

This edition was a major upgrade to human and went into service in May 2011.

We added hierarchical folders within the database. This permitted people to organize their work into folders. For example, a professor can create separate folders for each class, making it easier to locate relevant experiments that had been previously saved. This edition is also 100% php with all perl code rewritten into php.

We also redid the user interface to make it more intuitive.

We also added one-click experiments to facilitate learning more about human. Roy Meyers designed these experiments as a way to help students experience some of the more complex aspects of the model. For example, one-click experiments allow students t experience a diabetic adult, someone experiencing heat stress, acidosis, and other unusual situations.

Version 9 also added web access to patients as well as experiments. Coleman's original model included a series of patients presenting with diverse medical problems (e.g. "internal hemorrhage" . Students must then use the model to diagnose the problem. In some cases the patient may faint or die if the student is too slow to identify the problem.