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Testing GNU Octave under Windows

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Abstract

Since many schools may not have easy access to Linux machines for analysis of MOSAIC data, it is important to demonstrate that GNU Octave can be used on Windows machines as well. This memo reports on the successful installation of Octave on an old Windows XP machine. The analysis scripts detailed in previous memos ran without error.

1 Introduction

Analysis using GNU Octave has several advantages over Excel. Octave scripts are much easier to code and read. Octave is much more powerful and flexible, with support for both matrix analysis and a more linear C-/FORTRAN-like approach. Excel spreadsheets are unwieldy for scientific data analysis. Finally, Octave is priced right for school systems (and anyone else): free!

Previous installments of the VSRT Memo series concerning Octave have used a Linux machine. In contrast, some schools may have access only to Windows computers that are a few years old. The purpose of this memo is to test the feasibility of using Octave on an old XP machine.

2 Installing GNU Octave

Testing was done on 8 May 2009 on an Intel Pentium 4 2.4 GHz computer with 256 MB of RAM running Windows XP Professional version 2002 with Service Pack 3. A Windows version of GNU Octave can be found at `http://octave.sourceforge.net` . The "Windows installer" link from that page does not lead to the correct download page at present due to an incorrect `package_id` in the URL, but the installer can be found by either removing this from the URL or Googling for "octave windows". The "Download" link in the line starting "Octave/Windows - MinGW" brings up a page including a link to the setup executable for Octave 3.0.2.

The install executable is easy to run. The "Octave Forge" packages should be installed as well. If the files will not install to the default folder[1] due to lack of appropriate permissions, a different folder can be chosen (or contact your system administrator).

3 Running Octave

The three scripts `mosaic.m`, `diurnal.m`, and `evening.m` (listed in VSRT Memos #054, 056, and 059, respectively) were copied into a folder. The data file `chsout.txt`, containing 45712

[1] also called a directory

lines (file size: 34,284,000 bytes) was copied into the folder as well. Octave was launched, and the working directory was changed via the `cd` command. (Note: The current working directory can be listed with `pwd`, and the files in a folder can be listed using `ls` or `dir`.) The three aforementioned scripts were run in sequence.

All scripts ran without error, and all produced proper output (plots on the screen and encapsulated PostScript files). Run times for the scripts were 2^m12^s, 2^m51^s, and 0^m08^s, respectively. (The script `evening.m` assumes that one of the previous scripts has already loaded the data file, which is the slowest operation.)

If necessary, scripts can be edited with any application that saves in plain-text format. The application WordPad, found on all XP systems, was tested for this purpose and found to be suitable.

4 Conclusions

GNU Octave is a viable option for MOSAIC data analysis. The Windows machine used for testing is old and starved for RAM, yet the MOSAIC scripts ran successfully and in a reasonable amount of time.