Informal Parallel Programming Course for High School Students, Fall 2007

Getting Acclimated... (compiled by Scott Watson)

Server: vishkinpc.ece.umd.edu  (use provided username and password)

XMT specific Commands to know:
xmtgcc32 – compiles c code for the XMT FPGA computer
xmtfpga – submits compiled binary files to run on XMT computer
xmtfpgadb – view a database of your previous submissions
(type any of these into the command line with the –h option to see their options)

Examples:
xmtgcc32 bfs.s.c  (compile simple program for the FPGA)
xmtgcc32 -d START=0 -include ../data/hexagon/bfs.h bfs.p.c  (compile program with #define and
#include options)
xmtfpga -p hw4e -d ../data/huge/bfs.32b bfs.p.b  (submit program with project label and
binary data file)
xmtfpgadb -l -p hw4e  (look at summary of submission results for projects marked 4e)
xmtfpgadb -g 3  (retrieve submission 3 output from database)

Text editors:
nano, emacs, vi, ...

XMTC highlights:
#include <xmtc.h>  //required to use XMTC specific C functions
spawn(first,last){ ... }  //call this function to ‘spawn’ (last-first+1) processes numbered first to last
//access the process number with the special ‘$’ variable
ps(int local_integer, psBaseReg ps_base);  //sort of a global increment function that returns a
        //current value without having to worry about
        //concurrency issues. It’s only called within a spawn
        //block
void printINT(int x) { printf("%d",x); }  //use this function, string.h not implemented on XMT
void printSTR(char *x) { printf("%s",x);}  //use this function, string.h not implemented on XMT
...also see sspawn and psm in manual