This is a warm-up project whose objective is for you to set up the infrastructure you need for subsequent assignments.

HW1-1: The goal of this part is to use a Linux environment and become familiar with its facilities. Toward this end, you must either acquire an appropriate Linux distribution that fits your computing environment (e.g., a live distro, disk-installed distribution, USB flash thumb distro) or connecting to the DeepThought cluster). Then perform the following exercises.

1. Create and edit a text file that contains the following:
   - Tell one interesting fact about yourself.
   - Which Linux distribution are you using (e.g., Ubuntu 12.04)?
   - Which Linux environment are you using and on which machine platform (e.g,. "DeepThought", "Virtual Box on Windows 8 on HP Envy" or "Dual booting within Windows 7 on HP Pavilion" or "live distribution booting from DVD on Windows 8 HP Envy" or "native Ubuntu on AMD Athlon dual core"...)?
2. Connect to the class web page and download a file.
3. Find a suitable application to capture a screenshot which shows your web browser displaying the class website and your text file open in an editor, running under Linux.
4. Submit your screenshot in **jpeg format** in a file of **size no greater than 200K**.

In order for your solution to be properly received and graded, there are a few requirements.

1. The file must be named `HW1-1.jpg`.
2. The file must be less than 200K bytes.

Your solution must be properly uploaded to the T-square site before the scheduled due date, **5:00pm on Friday, 23 January 2015**.

HW1-2: The goal of this part of the project is to modify a short C program, compile it using the GNU C Compiler `gcc`, and run it. A program shell `HW1-2-shell.c` is provided. You must copy/rename it to `HW1-2.c` and modify it to compute the span of a ten element integer array. The span of an array is the difference between the largest and smallest values in the array. The integer array is declared and initialized in the global variable `Set`. Your program should print out the span using the print statement in the shell code.

You should open a "terminal window" to run `gcc` under Linux (type `man gcc` for compiler usage or look up GCC online documentation on the internet). Note that in the terminal window, you can enter any of the Linux commands (such as `ls`, `cd`, `cp`; for reference see http://users.ece.gatech.edu/~linda/2035/Linux_Cmd_Cheatsheet.pdf). Use the linux command `cd` to change your current working directory to the directory in which you placed the shell program. For example,

```
> cd ~/Documents/2035/hw1
```

You can list the files in that directory using

```
> ls -la
```

You can copy a file using `cp` or rename a file using `mv` (move a file to a new file). For example:

```
> cp HW1-2-shell.c HW1-2.c
```

You can use any of the available text editors normally found on linux, including `vi`, `vim`, and `emacs`. Using the text editor of your choice modify the `HW1-2.c` program to compute the span as described above.

Once you write your program, you can compile and run it using the Linux command line:

```
> gcc HW1-2.c -g -Wall -o HW1-2
> ./HW1-2
```

You should become familiar with the compiler options specified by these flags.

In order for your solution to be properly received and graded, there are a few requirements.

1. The file must be named `HW1-2.c`.
2. Your name and the date should be included in the header comment.
3. The starting *shell* program should not be modified except for the replacement of the comment "*`// insert your code here`*" and the addition of declared local variables. It is especially important not to remove or modify any print statements since they will be used in the grading process.
4. Your solution must be properly uploaded to T-square before the scheduled due date, **5:00pm on Friday, 23 January 2015.**

HW1-3: The goal of this part is for you to install MiSaSiM, modify a short assembly program `HW1-3-shell.asm`, simulate, test and debug it in MiSaSiM. The MiSaSiM simulator can be installed according to the instructions at www.ece.gatech.edu/~scotty/misasim/. Copy or rename the shell program to `HW1-3.asm` and modify it to compute the span of integer array `Set` allocated and initialized in the shell program. The result should be stored in the memory location labeled `Span` defined in the shell program.

In order for your solution to be properly received and graded, there are a few requirements.

1. The file must be named `HW1-3.asm`.
2. Your name and the date should be included in the beginning of the file.
3. The starting *shell* program should not be modified except for the replacement of the comment "# write your code here..."
4. Your program must store the span at the memory location labeled `Span` when it returns. This answer is used to check the correctness of your code.
5. Your program must return to the operating system via the **`jr`** instruction. *Programs that include infinite loops or produce simulator warnings or errors will receive zero credit*.
6. Your solution must be properly uploaded to T-square before the scheduled due date, **5:00pm on Friday, 23 January 2015.**

In all programming assignments, you should design, implement, and test your own code. **Any submitted assignment containing non-shell code that is not fully created and debugged by the student constitutes academic misconduct.** The only exception to this is that you may use code provided in the examples on the course website as a starting point for your programs (http://www.ece.gatech.edu/academic/courses/ece2035/examples/index.html).