CS515 Lab 4

1) **Using scripts to run a C program.** Write a program in C for computing the n^{th} Fibonacci number using three techniques. The program must have three functions that utilise one of

   a. Recursion

   b. Dynamic programming with caching

   c. Dynamic programming without caching

   Usage:

   ```
   $ fibnum n
   ```

   Returns:

   ```
   n XXX t_r t_c t_d
   ```

   where `XXX` is the result, and `t_r, t_c` and `t_d` is the time taken for computation by each of the respective methods. Write a script (Python/Bash) that calls your program repeatedly for various values of `n,` from 1 to 50, in steps of 5. Plot the time taken for each method as a function of `n`.

2) **Scripting to copy files.** There are seven directories d1 to d7. Each directory has several image files. Write a script that copies all files starting with **2** to a target directory, renaming the file as **dx_filename** where **dx** is the original directory of the file. Everything must be done inside the script.

Submit your code in Moodle as **cs515_lab4_rollnum.tgz**.