ICS2305 System Programming

Assignment – 02

1. Write a program that will read a directory containing a set of files, create a new subfolder called "backup" on same folder and copy all the files from directory to the new sub directory "backup". You are supposed to use exec() with "cp" command. Create a child process for each file that can execute each of the cp commands to copy the file from directory to subfolder "backup"

2. Why would you use fork() to create new processes in a uni-processor machine? Discuss a scenario where this can be useful.

3. Write a function foo(int fd, char* buf, int b_size, int n, int skip) that reads to buf from file with file descriptor fd, n blocks of size b_size each. The last argument specifies how many bytes to skip after reading each block. Return -1 if the operation is unsuccessful. Else return total number of bytes read.

4. Write a program to read all txt files (that is files that ends with .txt) in the current directory and merge them all to one txt file and returns a file descriptor for the new file.

5. Write a program that takes a string as an argument and return all the files that begins with that name in the current directory and its sub directories. For example >./a.out foo w i l l return all file names that begins with foo.

6. Write a program that will categorize all files in the current folder based on their file type. That is all .txt file in one folder called txt, all .bmp files in another folder called bmp etc. The argument to the program is a folder name.

7. Given a directory, write a program that will find all files with the same name in the directory and its sub directories. Show their name, which folder they are in and what day they were created. Expand the program to remove all duplicate copies based on user input. That is, ask user if each one of the file is to be kept or deleted. Based on user input, perform the appropriate action.