Write a program to implement each of the following:

1. Using dup function redirect stdin to file1 and stdout to file2. Read a line using scanf and write the same using printf. Verify the contents of both files.

2. Does calling stat function change any of the time values? Verify with a program.

3. umask() always sets the process umask and, at the same time, returns a copy of the old umask. How can we obtain a copy of the current process umask while leaving it unchanged? Write a program to demonstrate.

4. Display the device number for the filename input as command line argument. If it is a character or block special file, then display its major and minor numbers.