1. **cpf — Copy a File** Write a simple Linux program in C that copies one file from its source file to a destination file. Use the POSIX system calls `open, creat, read, write,` etc. instead of the ANSI C functions like `fopen, fread`, etc.

   The program, *cpf*, can be called, e.g., by the command line

   ```
   cpf abc xyz
   ```

   to copy the file *abc* to *xyz*. If *xyz* already exists, it will be overwritten. Otherwise, it will be created. The program must be called with exactly two arguments, both legal file names. The first is the source, the second is the output file.

2. **filat — Print file attributes** Write a program `filat` which reads and prints the file attributes of arbitrary file system entries into the stdout. The program shall support regular files but also symbolic links, directories, etc. The output of the program is expected as follows:

   ```
   Peters-MacBook-Pro:050_file_attributes peter$ ./filat /dev/disk0s1
   ------------------- /dev/disk0s1 ----------------------
       File type             : Block special file
       Access privileges     : rw-r-----
       inode-Number          : 588
       Device numbers        : dev =  8/7990708; rdev = 14/ 1
       Links count           : 1
       UID                   : 0
       GID                   : 5
       File size             : 0
       Last access           : Tue Oct 25 10:01:58 2011
       Last modification     : Tue Oct 25 10:01:58 2011
       Last inode change     : Tue Oct 25 10:01:58 2011
   Peters-MacBook-Pro:050_file_attributes peter$
   ```

3. **lsln — List Directory Content** Write a program `lsln` which behaves like the UNIX command `ls -ln`. It shall list the files of a directory together with attributes. The optional argument specifies the directory which content shall be listed. By default the current working directory shall be listed. Only visible files shall be listed.

   The following attributes shall be listed:

   - File type: 1 character

     "d" : Directory
     "c" : Device special file
     "b" : Block special file
     "-" : Regular file
     "f" : Fifo
     "l" : Symbolic link
     "s" : Socket

   - Access privileges: Nine characters, rwx for user, group, and others, respectively
   - Owner: 5-digit numerical

- Group: 5-digit numerical
- File size in bytes: 9-digit numerical
- Date of modification: yyyy-mm-dd-hh-min
- File name