1. "Using APIs, write the equivalent program for the following shell script.

   ```
   mkdir junk
   for i in 1 2 3 4 5 do
           echo hello >junk/$i
   done
   ls –l junk
   chmod –r junk
   ls –l
   chmod +r junk
   ls –l junk
   chmod –x junk
   cd junk
   chmod +x junk
   cd junk
   ```

   Write appropriate comments in the program to observe the execution output.

2. A function realpath() resolves all symbolic links in path and returns the *ultimate* target. Write a program to list the ultimate target of the only filenames that are symbolic links in a directory. The program takes one optional argument, which is the name of a directory to be searched for the links. When no argument is specified, the search is conducted in the current working directory. Display appropriate error messages.

3. Create a shared directory for usage with a purpose that any user (not super user) can create new files in this directory, but only the owner can delete his own files and everyone else can read all files?