Course COMP-8567
Instructor Dr. B. Boufama and Dr. Ranga
Assignment 03, Due date March 04, 11.59pm

Read the manual of commands **find** and **tar** then write a Bash script, call it **organize**, to compress all files, from a target directory hierarchy, with specific extensions, into a number of **tar** files, to be saved in a destination directory.
Synopsis:
organize [-t tarDir] [-o orgDir] <extensionList>

organize should use command **find** to visit each file in the hierarchy, defined by root directory **tarDir**, and if their extensions are in **extensionList**, the files are copied to **orgDir**, where each group of same-extension files are tared to a single file called, **extensionName.tar** (e.g. **doc.tar**) then deleted (only **tar** files will remain).

In particular :

- When **orgDir** is missing, then directory **orgDir** should be created in current directory and used for tar files.
- When **tarDir** is missing, then current directory should be used as target directory.
- Your script should check if **orgDir** exists (when provided) and if it has write permission. Otherwise, your script should exit with an error message.
- Because command **find** might find multiple files with the exact same name and extension in different subdirectories of the hierarchy, your script should first check if the same name already exists in **orgDir**,

in which case you should add _**1** or _**2**, etc. to the destination file name resulting from the copy.

- The option arguments of the script can be in any order. For example,

organize [-o orgDir] [-t tarDir] <extension-list>.
or
organize [-t tarDir] [-o orgDir] <extension-list>

Below are some sample runs:
Case 1:
% **organize -o ∼/save txt doc**
Searches all files whose extensions are either **txt** or **doc** in the whole directory hierarchy (root is current directory, that is, .), creates ∼/**save** if it does not exist already, then copies all these files to ∼/**save** (make sure same-name files are copied properly). Then, all **txt** files are tared as **txt.tar** and all **doc** files are tared as **doc.tar**.

Case 2:
% **organize pdf doc txt**
Searches all files whose extensions are either **pdf**, **doc** or **txt** in the directory hierarchy (root is **.**), creates **orgDir** then copies all these files to it and tar them accordingly.

Case 3:
% **organize -o ∼/save -t oldFiles pdf**
Searches all files whose extension is **pdf** in the directory hierarchy (root is **./oldFiles**), creates ∼/**save**, if it does not exist already, then copies all these files to ∼/**safe**, before taring them.

Hint: you can use **getopts** Linux built-in function to parse command line arguments of your script.