**1. Unpack the archive:**

**(*Reference Notes:*** [**Link to notes:**](https://pacific.instructure.com/courses/130894/pages/creating-and-extracting-tar-files)**)**

Use the tar command with the zxvf options to extract the [activity.tar.gz](https://pacific.instructure.com/courses/130894/files/31141011?wrap=1)

[Download activity.tar.gz](https://pacific.instructure.com/courses/130894/files/31141011/download?download_frd=1)

File.

STEP 1: Made a directory called **smexamprep** - First, CD into this directory

* cd smexamprep/

STEP 2: tar -zxvf activity.tar.gz

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Remove a folder:**

**(*Reference Notes:*** [**Link to notes:**](https://pacific.instructure.com/courses/130865/pages/cp-mv-and-rm?module_item_id=1341860)**)**

Use appropriate commands and switches to remove the sub4 folder from the extracted activity folder.

STEP 1: rm -r Activity\_folder/sub4

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**3. Make a directory:**

**(*Reference Notes:*** [**Link to notes:**](https://pacific.instructure.com/courses/130865/pages/mkdir-and-rmdir?module_item_id=1341859)**)**

Use appropriate commands and switches to add a folder called temp to the extracted activity folder.

STEP 1: mkdir Activity\_folder/temp

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. Locate the script:**

**(***Reference Notes:*[**Link to notes:**](https://pacific.instructure.com/courses/130865/pages/find?module_item_id=1341865)**)**

Use an appropriate command (such as find) to locate the script file named five\_number\_avg.sh within the Activity\_folder directory.

STEP 1: find Activity\_folder -name "five\_number\_avg.sh"

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question 4 should tell us the path to where to find five\_number\_avg.sh**

5. **5. Move a file:  
(***Reference Notes:*[**Link to notes:**](https://pacific.instructure.com/courses/130865/pages/cp-mv-and-rm?module_item_id=1341860)**)**

Move five\_number\_avg.sh to the temp folder created in question 3.

Additionally, move the input\_file to the temp folder created in question 3.

STEP 1: Use navigation in question 4 to where file **give\_number\_avg.sh** is stored

STEP 2: using the navigation -

**mv Activity\_folder/sub2/d4/d1/a1/d1/r1/five\_number\_avg.sh Activity\_folder/temp/**

STEP 3: Moving input\_file to the temp folder

find Activity\_folder -name "input\_file"

STEP 4: **mv Activity\_folder/input\_file Activity\_folder/temp/**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**6. Modify a File Using vi:**

Use the vi text editor to open and edit the input\_file. Change the **first number** in the file to 980.

* Open the file by typing: vi input\_file
* In vi:
  + Use the arrow keys to move the cursor to the first number
  + Press i to enter insert mode
  + Change the number to 980
  + Press Esc, then type :wq and press Enter to save and exit

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

STEP 1: vi Activity\_folder/temp/input\_file

STEP 2: press i for insert mode

STEP 3: replace first number with 980

STEP 4: Press Esc, then :wq and press Enter

**7. Run a shell script + redirection:  
(*Reference Notes:*** [**Link to notes:**](https://pacific.instructure.com/courses/130865/pages/redirection-%3E-%3E%3E-%3C-and-%7C?module_item_id=1341877)**)**

Change the script's permissions to make it executable. You can do this by running the following command in the terminal:

chmod +x five\_number\_avg.sh

Run the five\_number\_avg.sh script using input redirection (<) from input\_file.  
(Note: Both of these files should have been moved to the temp folder in Problem 5.)  
Redirect the output to a file named avg\_output.txt, then use the cat command to display the contents of the output file.

STEP 1: chmod +x Activity\_folder/temp/five\_number\_avg.sh

STEP 2: CD into temp file - cd Activity\_folder/temp

STEP 3: Do the redirect: ./five\_number\_avg.sh < input\_file > avg\_output.txt

STEP 4: cat avg\_output.txt

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8. Backup using a loop:  
(*Reference Notes:*** [**Link to notes:**](https://pacific.instructure.com/courses/130865/pages/for-x-in-dot-dot-dot-do-dot-dot-dot-done?module_item_id=1341883)**)**In the yobYYYY folders, there are several files named yobYYYY.txt, where YYYY represents a year between **1880** and **2014**.

Use a for loop along with the cp command to do the following:

* Copy each yobYYYY.txt file
* Move the copy to the Backups\_folder
* Rename each copied file to the format: backup\_yobYYYY.txt

STEP 1: CD to Activity\_folder

STEP 2: Confirm location - ls yob\*/yob\*.txt

STEP 3: Confirm location of Backups\_folder.

If it does not exist, create it - mkdir Backups\_folder

STEP 4: Run loop line by line

for file in yob\*/yob\*.txt

do filename=$(basename "$file")

cp "$file" "Backups\_folder**s**/backup\_$filename"

done

STEP 5: Ls Backups\_folders to confirm

**9. Analyze data using grep and sort:**

**(*Reference Notes:*** [**Similar Example Can Be Found Here:**](https://pacific.instructure.com/courses/130865/pages/redirection-%3E-%3E%3E-%3C-and-%7C?module_item_id=1341877)**)**

* Use grep to extract only rows containing "PG" from the Nba\_data.tsv file.
* Then, pipe this into sort to order the results by points per game.
* Redirect the output to a new file output.txt.

STEP 1: head -1 Nba\_data.tsv > output.txt - Finding where Points per game column is

STEP 2: grep "PG" Nba\_data.tsv | grep -v "^First\_name" | sort -k6 -n >> output.txt

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**10. Find how many lines a file has:**

**(*Reference Notes:*** [**Link to notes:**](https://pacific.instructure.com/courses/130865/pages/wc?module_item_id=1341874)**)**

Use the appropriate command to how many lines of text are in the Nba\_data.tsv file?

STEP 1: wc -l Nba\_data.tsv

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Special Challenge: Hidden File

Inside the activity folder are many subdirectories, each containing a fileX.txt.  
All but one contain the phrase: "Wrong file. Try again."

One file contains the message: "Congratulations! You found the correct file."

Find that file and move it to the top level of the activity directory.

STEP 1:

grep -rl "Congratulations! You found the correct file." . | while read file; do

mv "$file" .

Done

STEP 2: Verify it worked: ls | grep file - In our case, it was file 6 so,

STEP 3: Check what is inside file 6 to see: cat file6.txt