HOMEWORK 3 (SUBJECT: CSC 510 SOFTWARE ENGINEERING)

Date: 10/28/2024

GROUP 2

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GITHUB REPOSITORY: https://github.com/mangodb203/SEHomework3

Task 1:

Run the script using bash infinite.sh. The script will now run infinitely in the background. Your task is to write a simple script task1.sh to kill this process.

```
nirmit@Nirmits-MBP HW4 % bash infinite.sh & ./task1.sh
[1] 80084
[1]  + done       bash infinite.sh
nirmit@Nirmits-MBP HW4 %
```

Task 2:

Recall the example where we counted and modified the names of the files containing the word “sample” and exactly 3 lines containing the word “CSC510” in each file of dataset1. Now, we are challenged to do a similar task but with slightly different specifications.

a. First list the files containing the word “sample” and at least 3 occurrences of the word “CSC510”. Note that we are no longer talking about lines containing the word “CSC510” but instead the actual number of times the word “CSC510” occurs. You are not allowed to use gawk for this task but instead use a combination of grep and uniq (note: if you are unfamiliar with uniq, on a terminal write man uniq and you will get the user manual for the command uniq).

b. Sort in descending order the list of the filtered files based on the occurrences of the word “CSC510”. You have to break the ties by the size of the files. You will have to use gawk along with the other commands for this task.

c. Finally, from each file name substitute “file_” with “filtered_” and list the final output. Build a single pipeline of commands for all the tasks a, b, and c and store the pipeline inside a script called task2.sh.

```
nisargj@DESKTOP-L3HFD5G:/mnt/c/Users/Nisarg Jasani/Downloads/hw4$ grep -rl "sample" ./dataset1 | xargs grep -o "CSC510"
| cut -d: -f1| xargs ls -l | uniq -c | grep -E "[3-9] -|[0-9]{2,} -" | gawk '{print $1 ,$6, $10}'| sort -k1,1nr -k2,2nr|
 sed 's/file/filtered/'| gawk '{print $3}'
./dataset1/filtered_20
./dataset1/filtered_10
./dataset1/filtered_4
./dataset1/filtered_14
./dataset1/filtered_24
./dataset1/filtered_2
./dataset1/filtered_22
./dataset1/filtered_30
./dataset1/filtered_3
./dataset1/filtered_23
./dataset1/filtered_12
./dataset1/filtered_13
nisargj@DESKTOP-L3HFD5G:/mnt/c/Users/Nisarg Jasani/Downloads/hw4$
```

Task 3:

Take a look at titanic.csv which is a dataset containing passenger details and their survival during the Titanic disaster. We want you to analyze this dataset from the shell using the tools that you have learnt in this tutorial.

a. Extract passengers from 2nd class who embarked at Southampton. b. Then replace male/female labels with respectively M/F.

c. Finally, calculate the average age of the filtered passengers.

Build a single pipeline of commands for all the tasks a, b, and c and store the pipeline inside a script called task3.sh.

task3

task3 〉 No Selection

```
1 awk -F, 'NR > 1 && $3 == 2 && $NF ~ /S/ {print $0}' titanic.csv | sed -e 's/,male,/,M,/' -e
      's/,female,/,F,/'| awk -F, 'BEGIN {total_people = 0; total_age_sum = 0} {if ($7 != "")
      {total_people+=1; total_age_sum+=$7; print $0}} END {print "Avg age of the filtered
      list: " total_age_sum/total_people}'
```

```
nirmit@Nirmits-MacBook-Pro HW4 % ./task3.sh
16,1,2,"Hewlett, Mrs. (Mary D Kingcome) ",F,55,0,0,248706,16,,S
21,0,2,"Fynney, Mr. Joseph J",M,35,0,0,239865,26,,S
22,1,2,"Beesley, Mr. Lawrence",M,34,0,0,248698,13,D56,S
34,0,2,"Wheadon, Mr. Edward H",M,66,0,0,C.A. 24579,10.5,,S
42,0,2,"Turpin, Mrs. William John Robert (Dorothy Ann Wonnacott)",F,27,1,0,11668,21,,S
54,1,2,"Faunthorpe, Mrs. Lizzie (Elizabeth Anne Wilkinson)",F,29,1,0,2926,26,,S
57,1,2,"Rugg, Miss. Emily",F,21,0,0,C.A. 31026,10.5,,S
59,1,2,"West, Miss. Constance Mirium",F,5,1,2,C.A. 34651,27.75,,S
67,1,2,"Nye, Mrs. (Elizabeth Ramell)",F,29,0,0,C.A. 29395,10.5,F33,S
71,0,2,"Jenkin, Mr. Stephen Curnow",M,32,0,0,C.A. 33111,10.5,,S
73,0,2,"Hood, Mr. Ambrose Jr",M,21,0,0,S.O.C. 14879,73.5,,S
79,1,2,"Caldwell, Master. Alden Gates",M,0.83,0,2,248738,29,,S
85,1,2,"Ilett, Miss. Bertha",F,17,0,0,SO/C 14885,10.5,,S
99,1,2,"Doling, Mrs. John T (Ada Julia Bone)",F,34,0,1,231919,23,,S
100,0,2,"Kantor, Mr. Sinai",M,34,1,0,244367,26,,S
118,0,2,"Turpin, Mr. William John Robert",M,29,1,0,11668,21,,S
121,0,2,"Hickman, Mr. Stanley George",M,21,2,0,S.O.C. 14879,73.5,,S
124,1,2,"Webber, Miss. Susan",F,32.5,0,0,27267,13,E101,S
134,1,2,"Weisz, Mrs. Leopold (Mathilde Francoise Pede)",F,29,1,0,228414,26,,S
135,0,2,"Sobey, Mr. Samuel James Hayden",M,25,0,0,C.A. 29178,13,,S
145,0,2,"Andrew, Mr. Edgardo Samuel",M,18,0,0,231945,11.5,,S
146,0,2,"Nicholls, Mr. Joseph Charles",M,19,1,1,C.A. 33112,36.75,,S
149,0,2,"Navratil, Mr. Michel (""Louis M Hoffman"")",M,36.5,0,2,230080,26,F2,S
150,0,2,"Byles, Rev. Thomas Roussel Davids",M,42,0,0,244310,13,,S
151,0,2,"Bateman, Rev. Robert James",M,51,0,0,S.O.P. 1166,12.525,,S
162,1,2,"Watt, Mrs. James (Elizabeth ""Bessie"" Inglis Milne)",F,40,0,0,C.A. 33595,15.75,,S
179,0,2,"Hale, Mr. Reginald",M,30,0,0,250653,13,,S
184,1,2,"Becker, Master. Richard F",M,1,2,1,230136,39,F4,S
191,1,2,"Pinsky, Mrs. (Rosa)",F,32,0,0,234604,13,,S
192,0,2,"Carbines, Mr. William",M,19,0,0,28424,13,,S
194,1,2,"Navratil, Master. Michel M",M,3,1,1,230080,26,F2,S
200,0,2,"Yrois, Miss. Henriette (""Mrs Harbeck"")",F,24,0,0,248747,13,,S
212,1,2,"Cameron, Miss. Clear Annie",F,35,0,0,F.C.C. 13528,21,,S
214,0,2,"Givard, Mr. Hans Kristensen",M,30,0,0,250646,13,,S
218,0,2,"Jacobsohn, Mr. Sidney Samuel",M,42,1,0,243847,27,,S
220,0,2,"Harris, Mr. Walter",M,30,0,0,W/C 14208,10.5,,S
222,0,2,"Bracken, Mr. James H",M,27,0,0,220367,13,,S
227,1,2,"Mellors, Mr. William John",M,19,0,0,SW/PP 751,10.5,,S
229,0,2,"Fahlstrom, Mr. Arne Jonas",M,18,0,0,236171,13,,S
233,0,2,"Sjostedt, Mr. Ernst Adolf",M,59,0,0,237442,13.5,,S
235,0,2,"Leyson, Mr. Robert William Norman",M,24,0,0,C.A. 29566,10.5,,S
237,0,2,"Hold, Mr. Stephen",M,44,1,0,26707,26,,S
238,1,2,"Collyer, Miss. Marjorie ""Lottie""",F,8,0,2,C.A. 31921,26.25,,S
239,0,2,"Pengelly, Mr. Frederick William",M,19,0,0,28665,10.5,,S
240,0,2,"Hunt, Mr. George Henry",M,33,0,0,SCO/W 1585,12.275,,S
243,0,2,"Coleridge, Mr. Reginald Charles",M,29,0,0,W./C. 14263,10.5,,S
248,1,2,"Hamalainen, Mrs. William (Anna)",F,24,0,2,250649,14.5,,S
250,0,2,"Carter, Rev. Ernest Courtenay",M,54,1,0,244252,26,,S
260,1,2,"Parrish, Mrs. (Lutie Davis)",F,50,0,1,230433,26,,S
266,0,2,"Reeves, Mr. David",M,36,0,0,C.A. 17248,10.5,,S
273,1,2,"Mellinger, Mrs. (Elizabeth Anne Maidment)",F,41,0,1,250644,19.5,,S
289,1,2,"Hosono, Mr. Masabumi",M,42,0,0,237798,13,,S
313,0,2,"Lahtinen, Mrs. William (Anna Sylfven)",F,26,1,1,250651,26,,S
315,0,2,"Hart, Mr. Benjamin",M,43,1,1,F.C.C. 13529,26.25,,S
317,1,2,"Kantor, Mrs. Sinai (Miriam Sternin)",F,24,1,0,244367,26,,S
318,0,2,"Moraweck, Dr. Ernest",M,54,0,0,29011,14,,S
324,1,2,"Caldwell, Mrs. Albert Francis (Sylvia Mae Harbaugh)",F,22,1,1,248738,29,,S
328,1,2,"Ball, Mrs. (Ada E Hall)",F,36,0,0,28551,13,D,S
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595,0,2,"Chapman, Mr. John Henry",M,37,1,0,SC/AH 29037,26,,S
601,1,2,"Jacobsohn, Mrs. Sidney Samuel (Amy Frances Christy)",F,24,2,1,243847,27,,S
616,1,2,"Herman, Miss. Alice",F,24,1,2,220845,65,,S
619,1,2,"Becker, Miss. Marion Louise",F,4,2,1,230136,39,F4,S
620,0,2,"Gavey, Mr. Lawrence",M,26,0,0,31028,10.5,,S
636,1,2,"Davis, Miss. Mary",F,28,0,0,237668,13,,S
638,0,2,"Collyer, Mr. Harvey",M,31,1,1,C.A. 31921,26.25,,S
652,1,2,"Doling, Miss. Elsie",F,18,0,1,231919,23,,S
656,0,2,"Hickman, Mr. Leonard Mark",M,24,2,0,S.O.C. 14879,73.5,,S
659,0,2,"Eitemiller, Mr. George Floyd",M,23,0,0,29751,13,,S
666,0,2,"Hickman, Mr. Lewis",M,32,2,0,S.O.C. 14879,73.5,,S
667,0,2,"Butler, Mr. Reginald Fenton",M,25,0,0,234686,13,,S
671,1,2,"Brown, Mrs. Thomas William Solomon (Elizabeth Catherine Ford)",F,40,1,1,29750,39,,S
673,0,2,"Mitchell, Mr. Henry Michael",M,70,0,0,C.A. 24580,10.5,,S
674,1,2,"Wilhelms, Mr. Charles",M,31,0,0,244270,13,,S
685,0,2,"Brown, Mr. Thomas William Solomon",M,60,1,1,29750,39,,S
696,0,2,"Chapman, Mr. Charles Henry",M,52,0,0,248731,13.5,,S
706,0,2,"Morley, Mr. Henry Samuel (""Mr Henry Marshall"")",M,39,0,0,250655,26,,S
707,1,2,"Kelly, Mrs. Florence ""Fannie""",F,45,0,0,223596,13.5,,S
715,0,2,"Greenberg, Mr. Samuel",M,52,0,0,250647,13,,S
718,1,2,"Troutt, Miss. Edwina Celia ""Winnie""",F,27,0,0,34218,10.5,E101,S
721,1,2,"Harper, Miss. Annie Jessie ""Nina""",F,6,0,1,248727,33,,S
723,0,2,"Gillespie, Mr. William Henry",M,34,0,0,12233,13,,S
724,0,2,"Hodges, Mr. Henry Price",M,50,0,0,250643,13,,S
727,1,2,"Renouf, Mrs. Peter Henry (Lillian Jefferys)",F,30,3,0,31027,21,,S
729,0,2,"Bryhl, Mr. Kurt Arnold Gottfrid",M,25,1,0,236853,26,,S
734,0,2,"Berriman, Mr. William John",M,23,0,0,28425,13,,S
735,0,2,"Troupiansky, Mr. Moses Aaron",M,23,0,0,233639,13,,S
748,1,2,"Sinkkonen, Miss. Anna",F,30,0,0,250648,13,,S
751,1,2,"Wells, Miss. Joan",F,4,1,1,29103,23,,S
755,1,2,"Herman, Mrs. Samuel (Jane Laver)",F,48,1,2,220845,65,,S
756,1,2,"Hamalainen, Master. Viljo",M,0.67,1,1,250649,14.5,,S
758,0,2,"Bailey, Mr. Percy Andrew",M,18,0,0,29108,11.5,,S
773,0,2,"Mack, Mrs. (Mary)",F,57,0,0,S.O./P.P. 3,10.5,E77,S
775,1,2,"Hocking, Mrs. Elizabeth (Eliza Needs)",F,54,1,3,29105,23,,S
792,0,2,"Gaskell, Mr. Alfred",M,16,0,0,239865,26,,S
796,0,2,"Otter, Mr. Richard",M,39,0,0,28213,13,,S
801,0,2,"Ponesell, Mr. Martin",M,34,0,0,250647,13,,S
802,1,2,"Collyer, Mrs. Harvey (Charlotte Annie Tate)",F,31,1,1,C.A. 31921,26.25,,S
809,0,2,"Meyer, Mr. August",M,39,0,0,248723,13,,S
813,0,2,"Slemen, Mr. Richard James",M,35,0,0,28206,10.5,,S
832,1,2,"Richards, Master. George Sibley",M,0.83,1,1,29106,18.75,,S
842,0,2,"Mudd, Mr. Thomas Charles",M,16,0,0,S.O./P.P. 3,10.5,,S
849,0,2,"Harper, Rev. John",M,28,0,1,248727,33,,S
855,0,2,"Carter, Mrs. Ernest Courtenay (Lilian Hughes)",F,44,1,0,244252,26,,S
862,0,2,"Giles, Mr. Frederick Edward",M,21,1,0,28134,11.5,,S
865,0,2,"Gill, Mr. John William",M,24,0,0,233866,13,,S
866,1,2,"Bystrom, Mrs. (Karolina)",F,42,0,0,236852,13,,S
881,1,2,"Shelley, Mrs. William (Imanita Parrish Hall)",F,25,0,1,230433,26,,S
884,0,2,"Banfield, Mr. Frederick James",M,28,0,0,C.A./SOTON 34068,10.5,,S
887,0,2,"Montvila, Rev. Juozas",M,27,0,0,211536,13,,S
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nirmit@Nirmits-MBP HW4 %
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**********END OF ASSIGNMENT**********