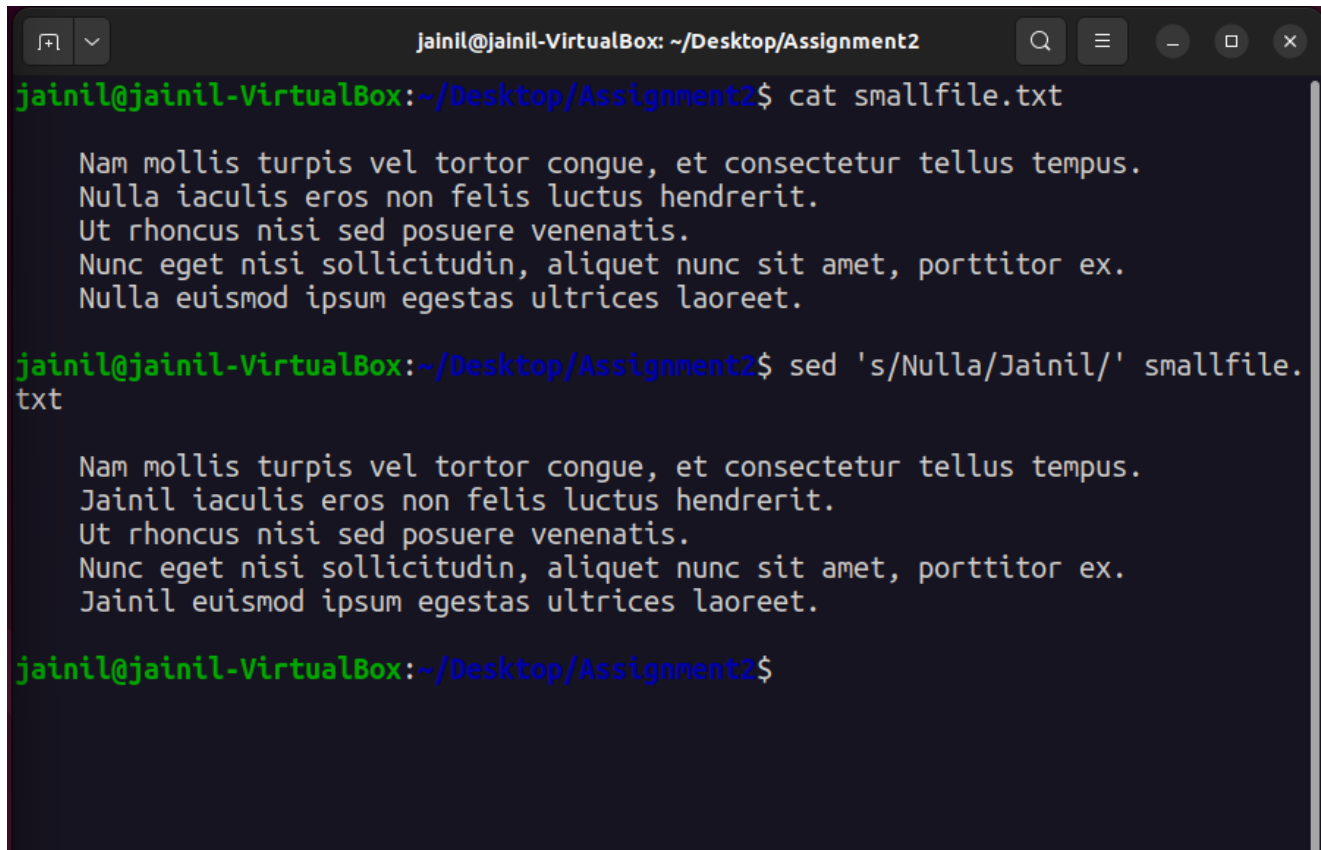


# TASK 3

**a. Task:** Search and replace text in a file - Use the `sed` command to search for and replace specific text in a text file. Demonstrate the use of regular expressions.

e.g., Replace all "Nulla" with "Jainil" in smallfile.txt file.

```
sed `s/Nulla/Jainil` smallfile.txt
```

A terminal window titled 'jainil@jainil-VirtualBox: ~/Desktop/Assignment2' showing the execution of the sed command. The first command is 'cat smallfile.txt', which displays the original content of the file. The second command is 'sed 's/Nulla/Jainil/' smallfile.txt', which displays the file content after replacing 'Nulla' with 'Jainil'.

```
jainil@jainil-VirtualBox: ~/Desktop/Assignment2
jainil@jainil-VirtualBox:~/Desktop/Assignment2$ cat smallfile.txt
Nam mollis turpis vel tortor congue, et consectetur tellus tempus.
Nulla iaculis eros non felis luctus hendrerit.
Ut rhoncus nisi sed posuere venenatis.
Nunc eget nisi sollicitudin, aliquet nunc sit amet, porttitor ex.
Nulla euismod ipsum egestas ultrices laoreet.

jainil@jainil-VirtualBox:~/Desktop/Assignment2$ sed 's/Nulla/Jainil/' smallfile.
txt
Nam mollis turpis vel tortor congue, et consectetur tellus tempus.
Jainil iaculis eros non felis luctus hendrerit.
Ut rhoncus nisi sed posuere venenatis.
Nunc eget nisi sollicitudin, aliquet nunc sit amet, porttitor ex.
Jainil euismod ipsum egestas ultrices laoreet.

jainil@jainil-VirtualBox:~/Desktop/Assignment2$
```

Following example demonstrating the use of regular expression in `sed`  
example: replace all the word that contains 'is' with 'Replaced'

```
sed 's/[a-zA-z]*is*[a-zA-Z]*/Replaced/g' smallfile.txt
```

```
jainil@jainil-VirtualBox: ~/Desktop/Assignment2
jainil@jainil-VirtualBox:~/Desktop/Assignment2$ cat smallfile.txt

Nam mollis turpis vel tortor congue, et consectetur tellus tempus.
Nulla iaculis eros non felis luctus hendrerit.
Ut rhoncus nisi sed posuere venenatis.
Nunc eget nisi sollicitudin, aliquet nunc sit amet, porttitor ex.
Nulla euismod ipsum egestas ultrices laoreet.

jainil@jainil-VirtualBox:~/Desktop/Assignment2$ sed 's/[a-zA-Z]*is[a-zA-Z]*/Replaced/g' smallfile.txt

Nam Replaced Replaced vel tortor congue, et consectetur tellus tempus.
Nulla Replaced eros non Replaced luctus hendrerit.
Ut rhoncus Replaced sed posuere Replaced.
Nunc eget Replaced sollicitudin, aliquet nunc sit amet, porttitor ex.
Nulla Replaced ipsum egestas ultrices laoreet.

jainil@jainil-VirtualBox:~/Desktop/Assignment2$
```

**b. Task:** Extract and manipulate data from a CSV file - Use `awk` to extract and manipulate data from a CSV file. Show how to perform operations like summing columns or filtering data based on criteria.

1. Summation of salary column:

```
awk -F',' '{sum+=$7}' END {print "Total Salary: ", sum} csvrecords.csv
```

```
jainil@jainil-VirtualBox: ~/Desktop/Assignment2
jainil@jainil-VirtualBox:~/Desktop/Assignment2$ cat csvrecords.csv | head -n 2
id,firstname,lastname,email,email2,profession,salary
100,Myriam,Taima,Myriam.Taima@yopmail.com,Myriam.Taima@gmail.com,developer,6155
jainil@jainil-VirtualBox:~/Desktop/Assignment2$ awk -F',' '{sum+=$7}' END {print
"Total Summary: ", sum}' csvrecords.csv
Total Summary: 25305896
jainil@jainil-VirtualBox:~/Desktop/Assignment2$
```

2. Filter by different profession like developer:

```
awk -F',' '$6 == "developer"' csvrecords.csv
```

```
jainil@jainil-VirtualBox: ~/Desktop/Assignment2
jainil@jainil-VirtualBox:~/Desktop/Assignment2$ awk -F',' ' $6 == "developer" ' csvrecords.csv
100,Myriam,Taima,Myriam.Taima@yopmail.com,Myriam.Taima@gmail.com,developer,6155
102,Lauryn,Durante,Lauryn.Durante@yopmail.com,Lauryn.Durante@gmail.com,developer,25225
106,Almeta,Giff,Almeta.Giff@yopmail.com,Almeta.Giff@gmail.com,developer,41259
108,Trixi,Waite,Trixi.Waite@yopmail.com,Trixi.Waite@gmail.com,developer,46931
113,Coral,Wenoa,Coral.Wenoa@yopmail.com,Coral.Wenoa@gmail.com,developer,31159
118,Marcelline,Raimondo,Marcelline.Raimondo@yopmail.com,Marcelline.Raimondo@gmail.com,developer,33922
119,Harrietta,Aldric,Harrietta.Aldric@yopmail.com,Harrietta.Aldric@gmail.com,developer,21176
127,Jacenta,Margarete,Jacenta.Margarete@yopmail.com,Jacenta.Margarete@gmail.com,developer,47138
136,Dotty,Orelee,Dotty.Orelee@yopmail.com,Dotty.Orelee@gmail.com,developer,22714
138,Nadine,Marden,Nadine.Marden@yopmail.com,Nadine.Marden@gmail.com,developer,21135
141,Oralea,Ferrell,Oralea.Ferrell@yopmail.com,Oralea.Ferrell@gmail.com,developer,7821
147,Averyl,LaRue,Averyl.LaRue@yopmail.com,Averyl.LaRue@gmail.com,developer,8218
149,Renae,Lattie,Renae.Lattie@yopmail.com,Renae.Lattie@gmail.com,developer,49175
154,Leia,Macey,Leia.Macey@yopmail.com,Leia.Macey@gmail.com,developer,40839
155,Nanete,O'Rourke,Nanete.O'Rourke@yopmail.com,Nanete.O'Rourke@gmail.com,developer,49435
```

Print all the name that starts with 'J'

```
awk -F',' ' $2 ~ /^J/' csvrecords.csv
```

```
jainil@jainil-VirtualBox: ~/Desktop/Assignment2
jainil@jainil-VirtualBox:~/Desktop/Assignment2$ awk -F',' ' $2 ~ /^J/' csvrecords.csv
105,Jacenta,Atcliffe,Jacenta.Atcliffe@yopmail.com,Jacenta.Atcliffe@gmail.com,doctor,40521
127,Jacenta,Margarete,Jacenta.Margarete@yopmail.com,Jacenta.Margarete@gmail.com,developer,47138
171,Jobi,Kelula,Jobi.Kelula@yopmail.com,Jobi.Kelula@gmail.com,developer,39128
173,Jordan,Dosia,Jordan.Dosia@yopmail.com,Jordan.Dosia@gmail.com,firefighter,43273
191,Jessamyn,Thar,Jessamyn.Thar@yopmail.com,Jessamyn.Thar@gmail.com,worker,10693
196,Jasmina,Wenda,Jasmina.Wenda@yopmail.com,Jasmina.Wenda@gmail.com,firefighter,35718
223,Jenilee,Rozanna,Jenilee.Rozanna@yopmail.com,Jenilee.Rozanna@gmail.com,firefighter,48139
224,Jan,Wyn,Jan.Wyn@yopmail.com,Jan.Wyn@gmail.com,firefighter,41024
239,Janeczka,Durante,Janeczka.Durante@yopmail.com,Janeczka.Durante@gmail.com,police officer,47194
273,Jinny,Judye,Jinny.Judye@yopmail.com,Jinny.Judye@gmail.com,firefighter,17483
305,Justinn,Telfer,Justinn.Telfer@yopmail.com,Justinn.Telfer@gmail.com,police officer,29698
346,Jolyn,Colyer,Jolyn.Colyer@yopmail.com,Jolyn.Colyer@gmail.com,firefighter,16499
373,Joceline,Prober,Joceline.Prober@yopmail.com,Joceline.Prober@gmail.com,developer,32722
389,Janis,Arley,Janis.Arley@yopmail.com,Janis.Arley@gmail.com,developer,17270
399,Jean,Madelene,Jean.Madelene@yopmail.com,Jean.Madelene@gmail.com,firefighter,27404
402,Janenna,Stelle,Janenna.Stelle@yopmail.com,Janenna.Stelle@gmail.com,doctor,20935
421,Jessy,Leary,Jessy.Leary@yopmail.com,Jessy.Leary@gmail.com,firefighter,9662
433,Judy,Gherardo,Judy.Gherardo@yopmail.com,Judy.Gherardo@gmail.com,police officer,6440
441,June,Woodberry,June.Woodberry@yopmail.com,June.Woodberry@gmail.com,police officer,14039
453,Justinn,Shuler,Justinn.Shuler@yopmail.com,Justinn.Shuler@gmail.com,developer,19770
458,Jessamyn,Amethyst,Jessamyn.Amethist@yopmail.com,Jessamyn.Amethist@gmail.com,worker,17756
477,Jemie,Land,Jemie.Land@yopmail.com,Jemie.Land@gmail.com,police officer,30671
556,Jany,Winnick,Jany.Winnick@yopmail.com,Jany.Winnick@gmail.com,worker,36725
```

Print all the id between 500 and 750:

```
awk -F',' ' $1>=500 && $1<=750 ' csvrecords.csv
```

```
jainil@jainil-VirtualBox: ~/Desktop/Assignment2
jainil@jainil-VirtualBox:~/Desktop/Assignment2$ awk -F',' ' $1>=500 && $1 <=750' csvrecords.csv
500,Rayna,Alarise,Rayna.Alarise@yopmail.com,Rayna.Alarise@gmail.com,developer,14181
501,Darci,Lewes,Darci.Lewes@yopmail.com,Darci.Lewes@gmail.com,police officer,15593
502,Nataline,Vins,Nataline.Vins@yopmail.com,Nataline.Vins@gmail.com,developer,47877
503,Gaylene,Myrilla,Gaylene.Myrilla@yopmail.com,Gaylene.Myrilla@gmail.com,firefighter,15131
504,Vevay,Jobi,Vevay.Jobi@yopmail.com,Vevay.Jobi@gmail.com,firefighter,1834
505,Sheree,Berne,Sheree.Berne@yopmail.com,Sheree.Berne@gmail.com,developer,19871
506,Aurore,Rozanna,Aurore.Rozanna@yopmail.com,Aurore.Rozanna@gmail.com,worker,42223
507,Hollie,Goode,Hollie.Goode@yopmail.com,Hollie.Goode@gmail.com,firefighter,49279
508,Ofilia,Ursulette,Ofilia.Ursulette@yopmail.com,Ofilia.Ursulette@gmail.com,police officer,4310
509,Chickie,Zitvaa,Chickie.Zitvaa@yopmail.com,Chickie.Zitvaa@gmail.com,firefighter,37718
510,Bettine,Dorcy,Bettine.Dorcy@yopmail.com,Bettine.Dorcy@gmail.com,doctor,9251
511,Nannie,Whiffen,Nannie.Whiffen@yopmail.com,Nannie.Whiffen@gmail.com,firefighter,24846
512,Kittie,Othilia,Kittie.Othilia@yopmail.com,Kittie.Othilia@gmail.com,doctor,36283
513,Cristabel,Hepsibah,Cristabel.Hepsibah@yopmail.com,Cristabel.Hepsibah@gmail.com,worker,37958
514,Fanchon,Moina,Fanchon.Moina@yopmail.com,Fanchon.Moina@gmail.com,firefighter,37231
515,Dale,Fancie,Dale.Fancie@yopmail.com,Dale.Fancie@gmail.com,doctor,5172
516,Mariann,Faro,Mariann.Faro@yopmail.com,Mariann.Faro@gmail.com,developer,7188
517,Dacia,Olympium,Dacia.Olympium@yopmail.com,Dacia.Olympium@gmail.com,police officer,36233
518,Drucie,Muriel,Drucie.Muriel@yopmail.com,Drucie.Muriel@gmail.com,doctor,25597
519,Gwyneth,Jacqui,Gwyneth.Jacqui@yopmail.com,Gwyneth.Jacqui@gmail.com,worker,49326
520,Lynde,Allare,Lynde.Allare@yopmail.com,Lynde.Allare@gmail.com,developer,11442
521,Tabbatha,Harl,Tabbatha.Harl@yopmail.com,Tabbatha.Harl@gmail.com,worker,30597
522,Kittie,Raul,Kittie.Raul@yopmail.com,Kittie.Raul@gmail.com,doctor,19575
```