

GEBZE TECHNICAL UNIVERSITY

CSE344 – HW1 DOCUMENTATION

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Important Notes:

1) There is a character limit for user inputs:

File Name Constraint: File name inputs can consist up to 2000 characters.

Student Name Constraint: Student name inputs can consist up to 2000 characters including both first name, mid name, last name.

Letter Grade Constraint: Letter grade inputs can consist up to 10 characters.

“listSome” Command Constraint:

numofEntries: It must be greater or equal than 0 ($10^{10} - 1 \geq \text{numofEntries} \geq 0$).

pageNumber: It must be greater than 0 ($10^{10} - 1 \geq \text{pageNumber} > 0$).

Overview of Whole Tests and Results:

```
Activities Terminal Mar 20 17:20
emre@emre-GF63-Thin-105C: ~/Desktop/test
emre@emre-GF63-Thin-105C:~/Desktop/test$ ll
total 40
drwxrwxr-x 2 emre emre 4096 Mar 20 17:05 ./
drwxr-xr-x 3 emre emre 4096 Mar 20 17:04 ../
-rw-r--r-- 1 emre emre 28155 Mar 20 17:04 main.c
-rw-rw-r-- 1 emre emre 609 Mar 20 17:04 makefile
emre@emre-GF63-Thin-105C:~/Desktop/test$ make
Removing files...
Compiling all files...
Running the program...
./hw1_enreytun
Welcome! You can start entering commands. You can enter 'exit' to exit
```

```
./hw1_enreytun
Welcome! You can start entering commands. You can enter 'exit' to exit

>gtuStudentGrades
#####
WELCOME TO STUDENT GRADE MANAGEMENT SYSTEM
#####

Here is the list of commands you can execute:

1- gtuStudentGrades "filename.txt": Creates a file with given filename. If file already exists, it does not change its content
2- addStudentGrade "Name Surname" "AA" "filename.txt": Adds the given entry to the given file. If file does not exists, then it prints error
3- searchStudent "Name Surname" "filename.txt": Searches for given student name in the given file and prints the name and grade if it is found. If it is not found, then it prints error
4- sortAll "filename.txt" [optional] "name/grade" "asc/desc": Sorts the entries in the file and prints them. By default it sorts them by name in ascending order. The last two arguments are optional. You can specify the sort by field by giving name or grade and sort order by giving asc or desc. If you enter one optional argument then you have to enter the other one, otherwise it does not accept
5- showAll "filename.txt": Prints all of the entries in the file
6- listGrades "filename.txt": Prints first 5 entries
7- listSome "numofEntries" "pageNumber" "filename.txt": Prints the selected entries according to the numofEntries and pageNumber arguments. Required conditions: numofEntries >= 0 and pageNumber > 0
8- exit: Closes the program
```

```
./ listSome "numofEntries" "pageNumber" "filename.txt": Prints the selected entries according to the numofEntries and pageNumber arguments. Required conditions: numofEntries >= 0 and pageNumber > 0
8- exit: Closes the program

>showAll "grades.txt"
File cannot open. Reason: No such file or directory

>gtuStudentGrades "grades.txt"

>showAll "grades.txt"

>addStudentGrade "Emre Oytun" "AA" "grades.txt"
>addStudentGrade "Anton Jerney" "BB" "grades.txt"
>addStudentGrade "Johnson Smith" "BA" "grades.txt"
>addStudentGrade "Davis Wilson" "CC" "grades.txt"
```

```
Activities Terminal Mar 20 17:21 emre@emre-GF63-Thin-105C: ~/Desktop/test

>addStudentGrade "Johnson Smith" "BA" "grades.txt"
>addStudentGrade "Davis Wilson" "CC" "grades.txt"
>showAll "grades.txt"
Enre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
>addStudentGrade "Thomas Garcia" "FF" "grades.txt"
>addStudentGrade "Anderson Tola" "CB" "grades.txt"
>addStudentGrade "Clark Lewis" "AA" "grades.txt"
>addStudentGrade "Ali Mert Karanan" "grades.txt"
Invalid command: addStudentGrade "Ali Mert Karanan" "grades.txt"
>addStudentGrade "Ali Mert Karanan" "DD" "grades.txt"
>showAll "grades.txt"
Enre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB
Clark Lewis AA
Ali Mert Karanan DD
>addStudentGrade "White Clark" "grades.txt"
Invalid command: addStudentGrade "White Clark" "grades.txt"
>addStudentGrade "White Clark" "BB" "grades.txt"
>addStudentGrade "Hall Young" "CC" "grades.txt"
>addStudentGrade "Mert Ramazan" "AA" "grades.txt"
>showAll "grades.txt"
Enre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB
Clark Lewis AA
Ali Mert Karanan DD
White Clark BB
Hall Young CC
Mert Ramazan AA
>searchStudent "Enre Oytun" "grades.txt"
Enre Oytun AA
```

```
Activities Terminal Mar 20 17:21 emre@emre-GF63-Thin-105C: ~/Desktop/test

>searchStudent "Enre Oytun" "grades.txt"
Enre Oytun AA
>searchStudent "White Clark" "grades.txt"
White Clark BB
>searchStudent "Random Name" "grades.txt"
Student not found.
>sortAll "grades.txt"
Ali Mert Karanan DD
Anderson Tola CB
Anton Jerney BB
Clark Lewis AA
Davis Wilson CC
Enre Oytun AA
Hall Young CC
Johnson Smith BA
Mert Ramazan AA
Thomas Garcia FF
White Clark BB
>sortAll "grades.txt" "name" "desc"
White Clark BB
Thomas Garcia FF
Mert Ramazan AA
Johnson Smith BA
Hall Young CC
Enre Oytun AA
Davis Wilson CC
Clark Lewis AA
Anton Jerney BB
Anderson Tola CB
Ali Mert Karanan DD
>sortAll "grades.txt" "grade" "asc"
Enre Oytun AA
Clark Lewis AA
Mert Ramazan AA
Johnson Smith BA
Anton Jerney BB
White Clark BB
Anderson Tola CB
Davis Wilson CC
Hall Young CC
Ali Mert Karanan DD
Thomas Garcia FF
>sortAll "grades.txt" "grade" "desc"
Thomas Garcia FF
Ali Mert Karanan DD
Davis Wilson CC
Hall Young CC
Anderson Tola CB
Anton Jerney BB
```

```
Activities Terminal Mar 20 17:21 emre@emre-GF63-Thin-105C: ~/Desktop/test

Hall Young CC
Ali Mert Karanan DD
Thomas Garcia FF

>sortAll "grades.txt" "grade" "desc"
Thomas Garcia FF
Ali Mert Karanan DD
Davis Wilson CC
Hall Young CC
Anderson Tola CB
Anton Jerney BB
White Clark BB
Johnson Smith BA
Enre Oytun AA
Clark Lewis AA
Mert Ramazan AA

>listGrades "grades.txt"
Enre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF

>showAll "grades.txt"
Enre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB
Clark Lewis AA
Ali Mert Karanan DD
White Clark BB
Hall Young CC
Mert Ramazan AA

>listSome "3" "2" "grades.txt"
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB

>listSome "5" "2" "grades.txt"
Anderson Tola CB
Clark Lewis AA
Ali Mert Karanan DD
White Clark BB
Hall Young CC

>listSome "2" "4" "grades.txt"
Clark Lewis AA
Ali Mert Karanan DD

>exit
Program is closing. Goodbye...
```

```
Activities Terminal Mar 20 17:22 emre@emre-GF63-Thin-105C: ~/Desktop/test

[showAll "grades.txt"] command cannot be processed
[gtuStudentGrades "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[addStudentGrade "Enre Oytun" "AA" "grades.txt"] command has been successfully processed
[addStudentGrade "Anton Jerney" "BB" "grades.txt"] command has been successfully processed
[addStudentGrade "Johnson Smith" "BA" "grades.txt"] command has been successfully processed
[addStudentGrade "Davis Wilson" "CC" "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[addStudentGrade "Thomas Garcia" "FF" "grades.txt"] command has been successfully processed
[addStudentGrade "Anderson Tola" "CB" "grades.txt"] command has been successfully processed
[addStudentGrade "Clark Lewis" "AA" "grades.txt"] command has been successfully processed
Invalid command: addStudentGrade "Ali Mert Karanan" "grades.txt"
[addStudentGrade "Ali Mert Karanan" "DD" "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
Invalid command: addStudentGrade "White Clark" "grades.txt"
[addStudentGrade "White Clark" "BB" "grades.txt"] command has been successfully processed
[addStudentGrade "Hall Young" "CC" "grades.txt"] command has been successfully processed
[addStudentGrade "Mert Ramazan" "AA" "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[searchStudent "Enre Oytun" "grades.txt"] command has been successfully processed
[searchStudent "White Clark" "grades.txt"] command has been successfully processed
[searchStudent "Random Name" "grades.txt"] command has been successfully processed
[sortAll "grades.txt"] command has been successfully processed
[sortAll "grades.txt" "name" "desc"] command has been successfully processed
[sortAll "grades.txt" "grade" "asc"] command has been successfully processed
[sortAll "grades.txt" "grade" "desc"] command has been successfully processed
[listGrades "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[listSome "3" "2" "grades.txt"] command has been successfully processed
[listSome "5" "2" "grades.txt"] command has been successfully processed
[listSome "2" "4" "grades.txt"] command has been successfully processed

"logs.txt" 31 lines, 2392 characters
```

```
Activities Terminal Mar 20 17:21 emre@emre-GF63-Thin-10SC: ~/Desktop/test

>sortAll "grades.txt" "grade" "desc"
Thomas Garcia FF
Ali Mert Karanam DD
Davis Wilson CC
Hall Young CC
Anderson Tola CB
Anton Jerney BB
White Clark BB
Johnson Smith BA
Enre Oytun AA
Clark Lewis AA
Mert Ramazan AA

>listGrades "grades.txt"
Enre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF

>showAll "grades.txt"
Enre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB
Clark Lewis AA
Ali Mert Karanam DD
White Clark BB
Hall Young CC
Mert Ramazan AA

>listSome "3" "2" "grades.txt"
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB

>listSome "5" "2" "grades.txt"
Anderson Tola CB
Clark Lewis AA
Ali Mert Karanam DD
White Clark BB
Hall Young CC

>listSome "2" "4" "grades.txt"
Clark Lewis AA
Ali Mert Karanam DD

>exit
Program is closing. Goodbye...
Program exited...
emre@emre-GF63-Thin-10SC:~/Desktop/test$ vi logs.txt
emre@emre-GF63-Thin-10SC:~/Desktop/test$
```

Explanation of Tests and Results:

1) Files are cleaned. Program is compiled, and run using make command. It waits for user input.

```
emre@emre-GF63-Thin-10SC:~/Desktop/test$ ll
total 40
drwxrwxr-x 2 emre emre 4096 Mar 20 17:05 ./
drwxr-xr-x 3 emre emre 4096 Mar 20 17:04 ../
-rw-r--r-- 1 emre emre 28155 Mar 20 17:04 main.c
-rw-rw-r-- 1 emre emre 609 Mar 20 17:04 makefile
emre@emre-GF63-Thin-10SC:~/Desktop/test$ make
Removing files...
Compiling all files...
Running the program...
./hw1_enreoytun
Welcome! You can start entering commands. You can enter 'exit' to exit

gtuStudentGrades
```

2) “gtuStudentGrades” command is entered. The usage of all commands are listed.

```
>gtuStudentGrades
#####
WELCOME TO STUDENT GRADE MANAGEMENT SYSTEM
#####

Here is the list of commands you can execute:

1- gtuStudentGrades "filename.txt": Creates a file with given filename. If file already exists, it does not change its content
2- addStudentGrade "Name Surname" "AA" "filename.txt": Adds the given entry to the given file. If file does not exists, then it prints error
3- searchStudent "Name Surname" "filename.txt": Searches for given student name in the given file and prints the name and grade if it is found. If it is not found, then it prints error
4- sortAll "filename.txt" [optional] "name/grade" "asc/desc" : Sorts the entries in the file and prints them. By default it sorts then by name in ascending order. The last two arguments are optional. You can specify the sort by field by giving name or grade and sort order by giving asc or desc. If you enter one optional argument then you have to enter the other one, otherwise it does not accept
5- showAll "filename.txt": Prints all of the entries in the file
6- listGrades "filename.txt": Prints first 5 entries
7- listSome "numofEntries" "pageNumber" "filename.txt": Prints the selected entries according to the numofEntries and pageNumber arguments. Required conditions: numofEntries >= 0 and pageNumber > 0
8- exit: Closes the program
```

3) showAll “grades.txt” command entered but it gives error since the file has not been created. gtuStudentGrades “grades.txt” command is entered and file is created. Then, students are added using addStudentGrade “Name Surname” “Letter” “grades.txt” command.

```
>showAll "grades.txt"
File cannot open. Reason: No such file or directory

>gtuStudentGrades "grades.txt"

>showAll "grades.txt"

>addStudentGrade "Emre Oytun" "AA" "grades.txt"

>addStudentGrade "Anton Jerney" "BB" "grades.txt"

>addStudentGrade "Johnson Smith" "BA" "grades.txt"

>addStudentGrade "Davis Wilson" "CC" "grades.txt"

>showAll "grades.txt"
Emre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC

>addStudentGrade "Thomas Garcia" "FF" "grades.txt"

>addStudentGrade "Anderson Tola" "CB" "grades.txt"

>addStudentGrade "Clark Lewis" "AA" "grades.txt"

>addStudentGrade "Ali Mert Karaman" "grades.txt"
Invalid command: addStudentGrade "Ali Mert Karaman" "grades.txt"

>addStudentGrade "Ali Mert Karaman" "DD" "grades.txt"

>showAll "grades.txt"
Emre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB
Clark Lewis AA
Ali Mert Karaman DD
```

```
>addStudentGrade "White Clark" "grades.txt"
Invalid command: addStudentGrade "White Clark" "grades.txt"

>addStudentGrade "White Clark" "BB" "grades.txt"

>addStudentGrade "Hall Young" "CC" "grades.txt"

>addStudentGrade "Mert Ramazan" "AA" "grades.txt"

>showAll "grades.txt"
Emre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB
Clark Lewis AA
Ali Mert Karaman DD
White Clark BB
Hall Young CC
Mert Ramazan AA
```

4) searchStudent "Name Surname" "grades.txt" commands are entered and results are listed as expected.

```
>searchStudent "Emre Oytun" "grades.txt"
Emre Oytun AA

>searchStudent "White Clark" "grades.txt"
White Clark BB

>searchStudent "Random Name" "grades.txt"
Student not found.
```

5) sortAll "grades.txt" [optional after here] "name" "desc" commands are entered and results are listed as expected.

sortAll "grades.txt": Sorts the file by name in ascending order. It is the default behaviour of sortAll. SortAll "grades.txt" "name/grade" "asc/desc": The user can provide sorting options like that. It should provide both additional two parameters. The first additional parameter is for sorting field, it can be "name" or "grade". The second additional parameter is for sorting order, it can be "asc" for ascending and "desc" for descending.

```
>sortAll "grades.txt"
Ali Mert Karaman DD
Anderson Tola CB
Anton Jerney BB
Clark Lewis AA
Davis Wilson CC
Emre Oytun AA
Hall Young CC
Johnson Smith BA
Mert Ramazan AA
Thomas Garcia FF
White Clark BB

>sortAll "grades.txt" "name" "desc"
White Clark BB
Thomas Garcia FF
Mert Ramazan AA
Johnson Smith BA
Hall Young CC
Emre Oytun AA
Davis Wilson CC
Clark Lewis AA
Anton Jerney BB
Anderson Tola CB
Ali Mert Karaman DD

>sortAll "grades.txt" "grade" "asc"
Emre Oytun AA
Clark Lewis AA
Mert Ramazan AA
Johnson Smith BA
Anton Jerney BB
White Clark BB
Anderson Tola CB
Davis Wilson CC
Hall Young CC
Ali Mert Karaman DD
Thomas Garcia FF

>sortAll "grades.txt" "grade" "desc"
Thomas Garcia FF
Ali Mert Karaman DD
Davis Wilson CC
Hall Young CC
Anderson Tola CB
Anton Jerney BB
White Clark BB
Johnson Smith BA
Emre Oytun AA
Clark Lewis AA
Mert Ramazan AA
```


- 6) listGrades “grades.txt” command is entered. The first 5 entry is listed as expected.

```
>listGrades "grades.txt"
Emre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF

>showAll "grades.txt"
Emre Oytun AA
Anton Jerney BB
Johnson Smith BA
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB
Clark Lewis AA
Ali Mert Karaman DD
White Clark BB
Hall Young CC
Mert Ramazan AA
```

- 7) listSome “numofEntries” “pageNumber” “filename.txt” commands are entered. The results are listed as expected.

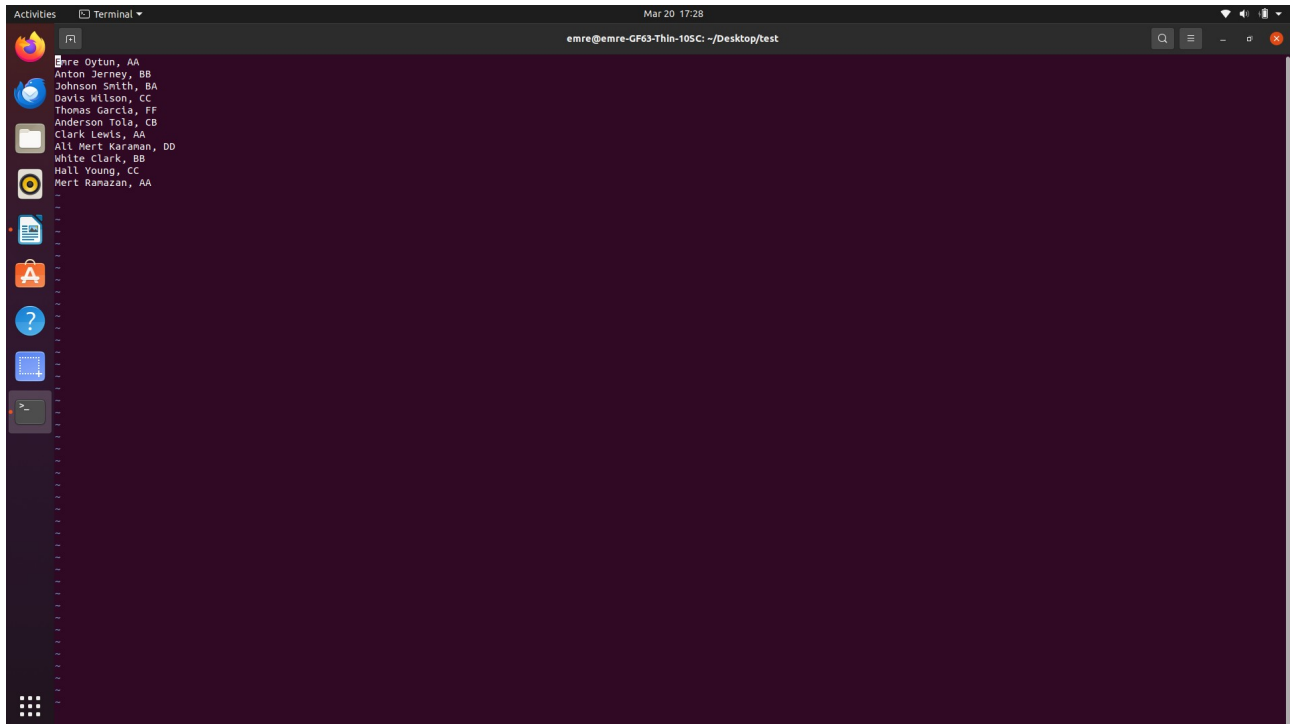
```
>listSome "3" "2" "grades.txt"
Davis Wilson CC
Thomas Garcia FF
Anderson Tola CB

>listSome "5" "2" "grades.txt"
Anderson Tola CB
Clark Lewis AA
Ali Mert Karaman DD
White Clark BB
Hall Young CC

>listSome "2" "4" "grades.txt"
Clark Lewis AA
Ali Mert Karaman DD

>exit
Program is closing. Goodbye...
=====
Program exited....
```

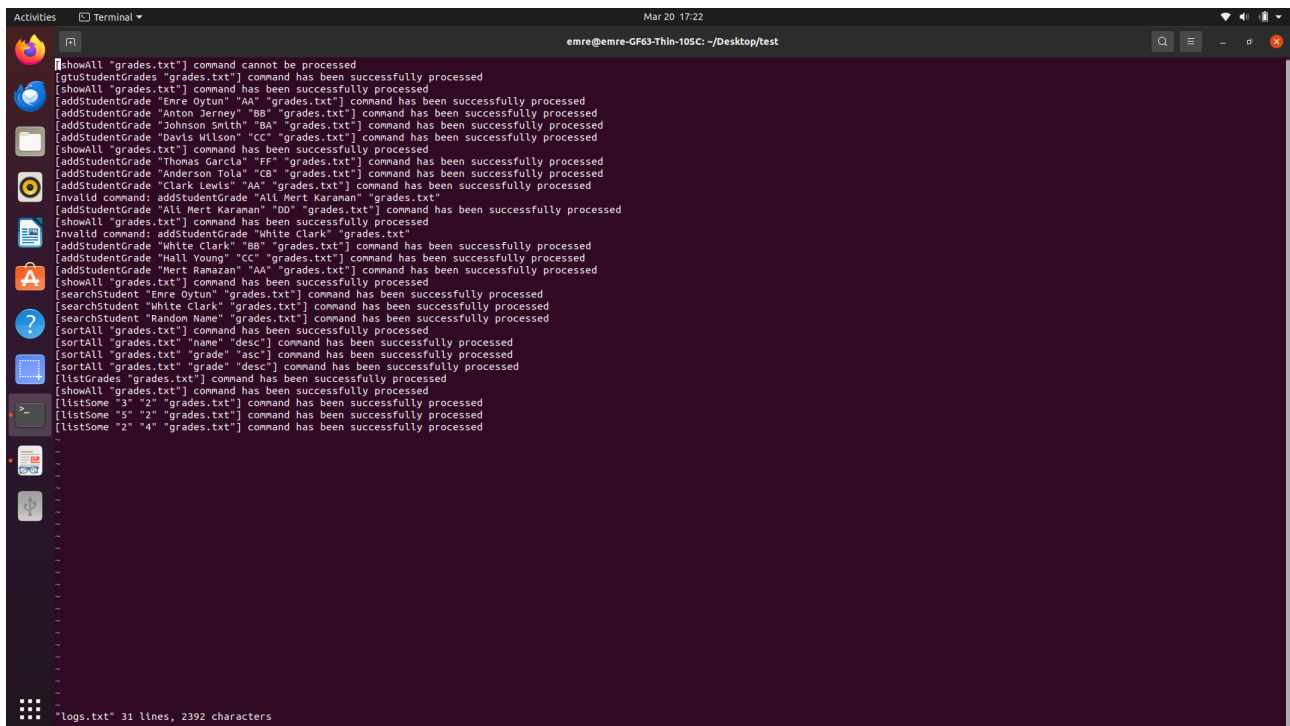

8) The last form of “grades.txt” can be seen in the screenshot below.



A terminal window titled "Terminal" with the user "emre" and host "emre@emre-CF63-Thin-10SC". The terminal displays the contents of a file named "grades.txt". The file contains a list of student names and their corresponding grades, separated by commas. The list is as follows:

```
Enre Oytun, AA
Anton Jerney, BB
Johnson Smith, BA
Davis Wilson, CC
Thomas Garcia, FF
Anderson Tola, CB
Clark Lewis, AA
Ali Mert Karahan, DD
White Clark, BB
Hall Young, CC
Mert Ramazan, AA
```

9) The last form of log file “logs.txt” can be seen in the screenshot below.



A terminal window titled "Terminal" with the user "emre" and host "emre@emre-CF63-Thin-10SC". The terminal displays the contents of a file named "logs.txt". The file contains a log of commands and their execution status. The log is as follows:

```
[showAll "grades.txt"] command cannot be processed
[getStudentGrades "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[addStudentGrade "Enre Oytun" "AA" "grades.txt"] command has been successfully processed
[addStudentGrade "Anton Jerney" "BB" "grades.txt"] command has been successfully processed
[addStudentGrade "Johnson Smith" "BA" "grades.txt"] command has been successfully processed
[addStudentGrade "Davis Wilson" "CC" "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[addStudentGrade "Thomas Garcia" "FF" "grades.txt"] command has been successfully processed
[addStudentGrade "Anderson Tola" "CB" "grades.txt"] command has been successfully processed
[addStudentGrade "Clark Lewis" "AA" "grades.txt"] command has been successfully processed
Invalid command: addStudentGrade "Ali Mert Karahan" "grades.txt"
[addStudentGrade "Ali Mert Karahan" "DD" "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
Invalid command: addStudentGrade "White Clark" "grades.txt"
[addStudentGrade "White Clark" "BB" "grades.txt"] command has been successfully processed
[addStudentGrade "Hall Young" "CC" "grades.txt"] command has been successfully processed
[addStudentGrade "Mert Ramazan" "AA" "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[searchStudent "Enre Oytun" "grades.txt"] command has been successfully processed
[searchStudent "White Clark" "grades.txt"] command has been successfully processed
[searchStudent "Random Name" "grades.txt"] command has been successfully processed
[sortAll "grades.txt"] command has been successfully processed
[sortAll "grades.txt" "name" "desc"] command has been successfully processed
[sortAll "grades.txt" "grade" "asc"] command has been successfully processed
[sortAll "grades.txt" "grade" "desc"] command has been successfully processed
[listGrades "grades.txt"] command has been successfully processed
[showAll "grades.txt"] command has been successfully processed
[listSome "3" "2" "grades.txt"] command has been successfully processed
[listSome "5" "2" "grades.txt"] command has been successfully processed
[listSome "2" "4" "grades.txt"] command has been successfully processed
```

The terminal also shows the file size and character count of "logs.txt" at the bottom:

```
"logs.txt" 31 lines, 2392 characters
```