

LINUX PROJECT

SCHOOL MANAGEMENT SYSTEM

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INTRODUCTION

PROBLEM STATEMENT :-

A School Management System is important for managing various academic tasks in an educational institution .

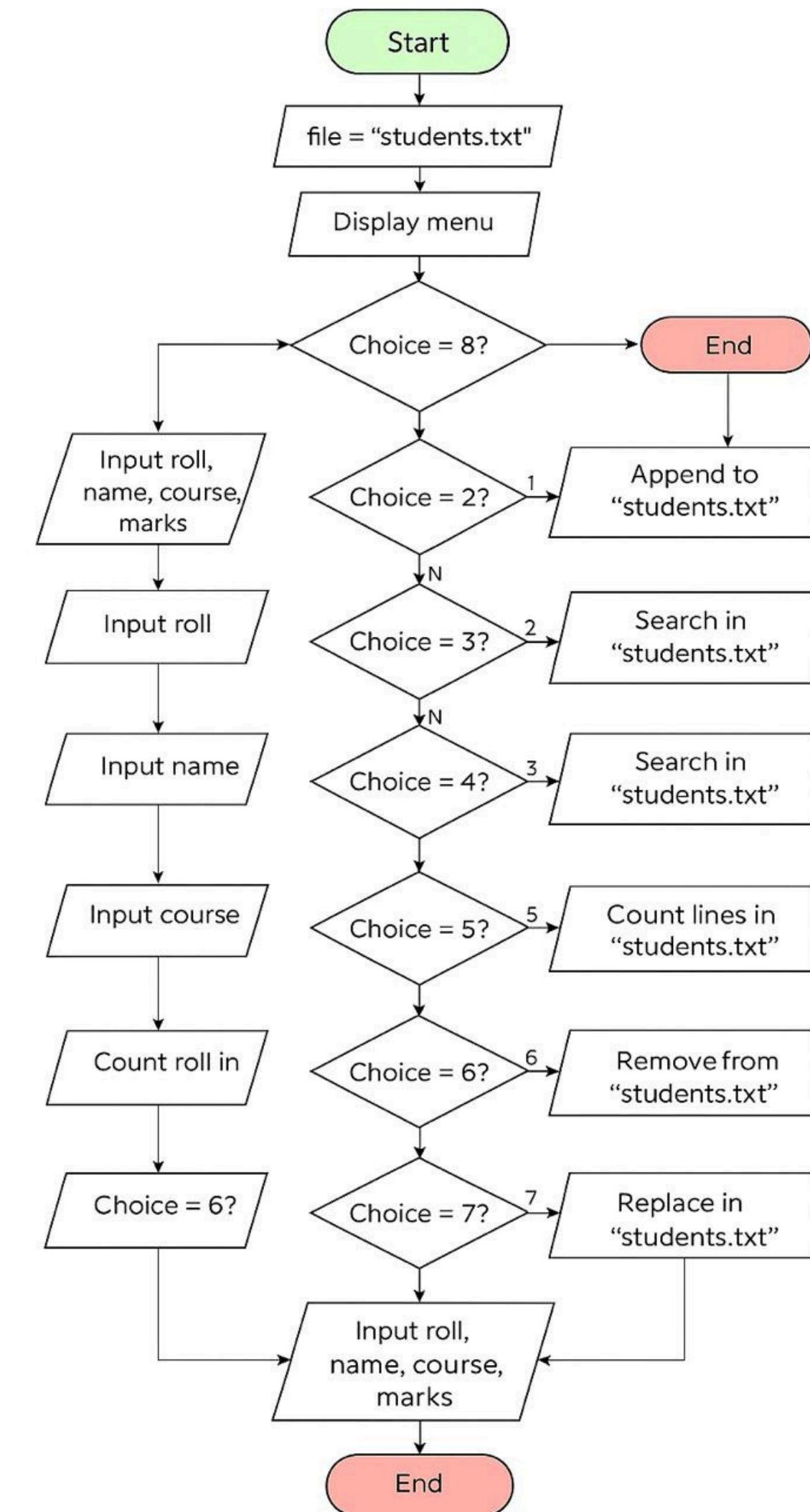
The system allows :-

- > To add new students saving their details such as name , roll no , course and marks
 - > To search for existing students using their roll number and name
 - > To count the total no of students or students in a particular course
 - > To update student details and also delete a student .

A School Management System is necessary to simplify these operations by digitally managing student information. It is menu-driven interface which eliminates the need for maintaining handwritten documents. The students record are stored easily in a simple formatted way .

In real life it helps to digitize student information for better accessibility , reduce human errors during record keeping , and save time .

FLOWCHART:-



ALGORITHM:-

STEP 1 = Start the program

STEP 2 = set a variable file to "students.txt"

STEP3 = start an infinite while loop:while [1]

STEP4 = print “ Welcome to School Management System! 1. TO add student 2. TO find by roll no 3. TO find by name 4. TO find students in a course 5. TO count students 6. TO delete student 7. TO update student 8. To quit TYPE 1,2,3,.... your choice ”

STEP5 = read the user's menu choice into variable ch

STEP 6 = start if condition and check if ch equals 1

STEP 7 = if TRUE then ,print " enter a 5 digit roll no: " , and read in variable r

STEP 8 = " print enter name:" and read in variable n

STEP 9 = " print enter course:" and read in variable c

STEP 10 = " print enter marks:" and read in variable m

STEP 11 = append r, n,c,m in the file students.txt and , print " Student added "

STEP 12 = check if ch equals 2

STEP 13 = if TRUE then ,print " enter the roll no " and read in r variable

STEP 14 = find for student if roll no matches using grep in students.txt

STEP 15 = check if ch equals 3

STEP 16 = if TRUE then , print " enter the name " and read in n variable

STEP 17 = find for student if name matches using grep in students.txt

STEP 18 = check if ch equals 4

STEP 19 = if TRUE then , print " enter the course " and read in c variable

STEP 20 = find for student if course matches using grep in students.txt

STEP 21 = check if ch equals 5

STEP 22 = if TRUE then ,count the number of lines in the file using wc -l, and print them

STEP 23 = check if ch equals 6

STEP 24 = if TRUE then , print " enter the roll no to delete " and read in r variable

STEP 25 = make temporary file temp.txt that has all lines from students.txt except those that start with r (use grep to find), and replace the original file with the temp file , print “Deleted”.

STEP 26 = check if ch equals 7

STEP 27 = if TRUE then , print " enter roll no to update " and read in r variable.

STEP 28 = search for roll no using grep in students.txt , then using a temporary file text.txt
delete all details of the student.

STEP 29 = take new details of roll no , name , course and marks. and append in file students.txt

STEP 30 = check if ch equals 8

STEP 31 = if TRUE then , print " Thank you for using the student management system. "

STEP 32 = exit the program

STEP 33 = check for invalid condition.

STEP 34 = End the Program.

PROBLEMS FACED DURING THE PROJECT:-

- > To handle file logic , as shell scripting does not support structured databases. so we had to manually store data in students.txt and use commands like grep, wc, and mv to simulate database operations, and avoid overwriting or corrupting the file.
- > To update student record as shell scripts cannot directly modify a specific line inside a file, so we had to remove old record by finding it using grep -v , while storing the rest of the data in a temporary file and adding the updated record again.
- > To decide the Data Storage Method as shell scripting does not provide arrays or database systems , so we had to choose a simple method to store data like a text file (students.txt) to save student records line by line and manage data through file manipulation.
- >To ensure the working of the project that , the programs runs smoothly without any bugs or errors.

OUTPUT SCREENSHOTS

SNIP OF CODE

```
Vrinda@Ubuntu:~
```

```
file="students.txt"
while [ 1 ]
do
echo "-----"
echo " Welcome to School Management System! "
echo " 1. TO add student "
echo " 2. TO find by roll no "
echo " 3. TO find by name "
echo " 4. TO find students in a course "
echo " 5. TO count students "
echo " 6. TO delete student "
echo " 7. TO update student "
echo " 8. To quit "
echo " TYPE 1,2,3, .... your choice "

read ch
if [ "$ch" -eq 1 ]
then
echo " enter a 5 digit roll no: "
read r
echo " enter name: "
read n
echo " enter course: "
read c
echo " enter marks: "
read m
echo "$r $n $c $m" >> $file
"project.sh" 90 lines, 1513 bytes
```

```
Vrinda@Ubuntu:~
```

```
echo " enter marks:"
read m
echo "$r $n $c $m" >> $file
echo " Student added "

elif [ "$ch" -eq 2 ]
then
echo " enter the roll no "
read r
grep "^\$r" $file

elif [ "$ch" -eq 3 ]
then
echo " enter the name "
read n
grep " \$n" $file

elif [ "$ch" -eq 4 ]
then
echo " enter the course "
read c
grep " \$c" $file

elif [ "$ch" -eq 5 ]
then
echo " no of students= $(wc -l < $file) "

elif [ "$ch" -eq 6 ]
then
echo " enter the roll no to delete "
```

```
Vrinda@Ubuntu:~
```

```
elif [ "$ch" -eq 6 ]
then
echo " enter the roll no to delete "
read r
grep -v "^$r" $file > temp.txt
mv temp.txt $file
echo " Deleted "

elif [ "$ch" -eq 7 ]
then
echo " enter roll no to update "
read r
grep -v "^$r" $file > temp.txt
mv temp.txt $file

echo " enter details to update "
echo " enter roll no "
read nr
echo " enter the name "
read nn
echo " enter the course "
read nc
echo " enter the marks "
read nm
echo "$nr $nn $nc $nm" >> $file
echo " Updated "

elif [ "$ch" -eq 8 ]
then
```

```
elif [ "$ch" -eq 8 ]
then
echo " Thank you for using the student management system. "
exit

else
echo " wrong choice "
fi
done
```

OUTPUT

```
Vrinda@Ubuntu:~$ vi project.sh
Vrinda@Ubuntu:~$ chmod +x project.sh
Vrinda@Ubuntu:~$ ./project.sh
-----
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, .... your choice
1
enter a 5 digit roll no:
20250
enter name:
linux
enter course:
btech csc
enter marks:
50
Student added
-----
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
```

```
Vrinda@Ubuntu:~$ ./project.sh
-----
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, .... your choice
2
enter the roll no
20250
20250 linux btech csc 50
-----
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, .... your choice
3
enter the name
lily
12031 lily maths 88
-----
```

```
Vrinda@Ubuntu:~
```

```
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, .... your choice
4
enter the course
btech csc
10523 lavender btech csc 80
42013 abc btech csc 60
20250 linux btech csc 50
-----
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, .... your choice
5
no of students= 5
-----
```

```
Vrinda@Ubuntu:~
```

```
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, .... your choice
6
enter the roll no to delete
42013
Deleted
-----
Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, .... your choice
7
enter roll no to update
10523
enter details to update
enter roll no
10523
-----
```

```
Vrinda@Ubuntu:~
```

6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, your choice
7
enter roll no to update
10523
enter details to update
enter roll no
10023
enter the name
rose
enter the course
btech csc
enter the marks
90
Updated

Welcome to School Management System!
1. TO add student
2. TO find by roll no
3. TO find by name
4. TO find students in a course
5. TO count students
6. TO delete student
7. TO update student
8. To quit
TYPE 1,2,3, your choice
8
Thank you for using the student management system.
Vrinda@Ubuntu:~\$



THANK YOU