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 D1 - 19BCE245
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Practical 8

Write a shell script for performing basic functions related to DBMS.

CODE :

```

1. while [ true ]
2. do
3.   printf "MENU : \n"
4.   printf "\t[1.] Insert a data\n"
5.   printf "\t[2.] Delete a data\n"
6.   printf "\t[3.] Modify a data\n"
7.   printf "\t[4.] Display data\n"
8.   printf "\t[5.] Exit\n"
9.   printf "Enter Choice : "
10.  read ch
11.  case $ch in
12.    1) printf "Enter roll number : "
13.       read roll_number
14.       printf "Enter name : "
15.       read name
16.       printf "Enter branch : "
17.       read branch
18.      echo "" >> database.txt
19.      echo $roll_number|$name|$branch >>
        database.txt
20.      echo "# Data inserted!"
21.      ;;
22.    2) printf "Enter roll number to delete : "
23.       read roll_number
24.       grep -v $roll_number database.txt >
        temp_database.txt      #grep -v command returns all lines in

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file which do not match given the pattern (here, roll
number)

25.          cat temp_database.txt > database.txt
26.          rm temp_database.txt
27.          echo "# Data deleted!"
28.          ;;
29. 3) printf "\tSUB-MENU : \n"
30.  printf "\t\t[1.] Modify roll number only\n"
31.  printf "\t\t[2.] Modify name only\n"
32.  printf "\t\t[3.] Modify branch only\n"
33.  printf "\t\t[4.] Modify all\n"
34.  printf "\tEnter choice : "
35.  read choice
36.  case $choice in
37.    1) printf "Enter roll number of student you want to
update : "
38.        read old_roll_number
39.        echo "Enter new roll number : "
40.        read roll_number
41.        prev_name=`grep $old_roll_number database.txt |
cut -d "|" -f2`           #extract only useful data.
(here, in line, data is separated by ',' as specified by the
option 'd' which means delimiter. and extracting the field
number-2 as specified by -f2 [which is name of student])
42.        prev_branch=`grep $old_roll_number database.txt
| cut -d "|" -f3`           #extract only useful data. (here, in
line, data is separated by ',' as specified by the option
'd' which means delimiter. and extracting the field number-2
as specified by -f3 [which is branch of student])
43.        grep -v $old_roll_number database.txt >
temp_database.txt
44.        cat temp_database.txt > database.txt
45.        rm temp_database.txt
46.        echo "" >> database.txt
47.        echo $roll_number | "$prev_name" | "$prev_branch"
>> database.txt
48.        echo "# Data Modified!"
49.        ;;
50.    2) printf "Enter roll number of student you want
to update : "
51.        read old_roll_number
52.        echo "Enter new name : "
53.        read name

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54.           prev_roll_number=`grep $old_roll_number
database.txt | cut -d "|" -f1`          #extract only
useful data. (here, in line, data is separated by ',' as
specified by the option 'd' which means delimiter. and
extracting the field number-2 as specified by -f1 [which is
roll number of student])
55.           prev_branch=`grep $old_roll_number database.txt
| cut -d "|" -f3`          #extract only useful data. (here, in
line, data is separated by ',' as specified by the option
'd' which means delimiter. and extracting the field number-2
as specified by -f3 [which is branch of student])
56.           grep -v $old_roll_number database.txt >
temp_database.txt
57.           cat temp_database.txt > database.txt
58.           rm temp_database.txt
59.           echo "" >> database.txt
60.           echo $prev_roll_number|$name|$prev_branch
>> database.txt
61.           echo "# Data Modified!"
62.           ;;
63.       3) printf "Enter roll number of student you want to
update : "
64.           read old_roll_number
65.           echo "Enter new branch : "
66.           read branch
67.           prev_roll_number=`grep $old_roll_number
database.txt | cut -d "|" -f1`          #extract only
useful data. (here, in line, data is separated by ',' as
specified by the option 'd' which means delimiter. and
extracting the field number-2 as specified by -f1 [which is
roll number of student])
68.           prev_name=`grep $old_roll_number database.txt |
cut -d "|" -f2`          #extract only useful data. (here, in
line, data is separated by ',' as specified by the option
'd' which means delimiter. and extracting the field number-2
as specified by -f2 [which is name of student])
69.           grep -v $old_roll_number database.txt >
temp_database.txt
70.           cat temp_database.txt > database.txt
71.           rm temp_database.txt
72.           echo "" >> database.txt
73.           echo $prev_roll_number|$prev_name|$branch
>> database.txt

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74.             echo "# Data Modified!"
75.             ;;
76.         4) printf "Enter roll number of student you want to
    update : "
77.             read roll_number
78.             grep -v $roll_number database.txt >
    temp_database.txt
79.             cat temp_database.txt > database.txt
80.             rm temp_database.txt
81.             echo "Enter new roll number : "
82.             read roll_number
83.             echo "Enter new name : "
84.             read name
85.             echo "Enter new branch : "
86.             read branch
87.             echo "" >> database.txt
88.             echo $roll_number|$name|$branch >>
    database.txt
89.             echo "# Data Modified!"
90.             ;;
91.         *) echo "# Invalid choice!"
92.             ;;
93.         esac ;;
94.     4) echo "DATA : "
95.         ARR1=( 'ROLL NUMBER|NAME|BRANCH' )
    #heading
96.         readarray -t ARR < <(cat database.txt | tr "\n"
    "\n")          # converting database.txt from single string to
    array to overcome 'too long line' error.
97.         ARR=("${ARR1[@]} ${ARR[@]}")
    # concatenating heading with database
98.         printf '%s\n' "${ARR[@]}" | column -t -s '|'
    # printing array as it's values separated from
    ' | ' and tabulizing it via column command.
99.         ;;
100.    5) echo "THANK YOU!"
101.    break
102.    ;;
103. *) echo "# Invalid choice! " ;;
104. esac
105.done

```

OUTPUT:

Main Menu

```
MENU :
[1.] Insert a data
[2.] Delete a data
[3.] Modify a data
[4.] Display data
[5.] Exit
Enter Choice : |
```

Symbol ◊ | Tabs: 4 ◊ | Line 20, Column 51

Insertion operation

*Console output :**File generated :*

```
Enter Choice : 1
Enter roll number : 1
Enter name : Aayush
Enter branch : Computer
# Data inserted!
```

Running... | CPU 0% | Memory 1.1M

Symbol ◊ | Tabs: 4 ◊ | Line 20, Column 51

database.txt
1|Aayush|Computer

After several insertion

database.txt
1|Aayush|Computer
2|Ross|paleontology
3|Chandler|stats
4|Joey|drama
5|Monica|Chef

Display operation

ROLL NUMBER	NAME	BRANCH
1	Aayush	Computer
2	Ross	paleontology
3	Chandler	stats
4	Joey	drama
5	Monica	Chef

Run Succeeded | Time 49 ms | Peak Memory 7.2M

Symbol ◊ | Tabs: 4 ◊ | Line 9, Column 29

Modification operation

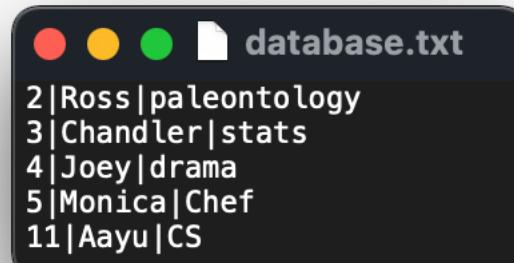
```

MENU :
[1.] Insert a data
[2.] Delete a data
[3.] Modify a data
[4.] Display data
[5.] Exit
Enter Choice : 3
SUB-MENU :
[1.] Modify roll number only
[2.] Modify name only
[3.] Modify branch only
[4.] Modify all
Enter choice : 4
Enter roll number of student you want to update : 1
Enter new roll number :
11
Enter new name :
Aayu
Enter new branch :
CS
# Data Modified!

```

Running... | CPU 0% | Memory 1.2M Symbol ◊ | Tabs: 4 ◊ | Line 74, Column 60

Modified file :



Deletion Operation

```

Enter Choice : 2
Enter roll number to delete : 11
# Data deleted!

```

Running... | CPU 0% | Memory 1.2M Symbol ◊ | Tabs: 4 ◊ | Line 74, Column 60

Modified file:



Exit :

```

Enter Choice : 5
THANK YOU!

```

Run Succeeded | Time 39 ms | Peak Memory 1.2M Symbol ◊ | Tabs: 4 ◊ | Line 74, Column 60