

## Assignment 1-B

### Shell Programming

#### Student Database: -

Create, Insert, Search, Display, Delete, Update

#### Code: -

```
#!/bin/bash
```

```
while true; do
    echo "1.CREATE DATABASE"
    echo "2.INSERT"
    echo "3.SEARCH"
    echo "4.DISPLAY"
    echo "5.DELETE"
    echo "6.UPDATE"
    echo "7.EXIT"
    echo "Enter your choice:"
    read d
    case $d in
        1)
            echo "Enter the name of the database:"
            read db
            if [ -f "$db" ]; then          #-f:- wheteher the file exists
                echo "$db exists"
            else
                touch $db
                echo "File created successfully!:"
            fi
            ;;
        2)
            echo "Enter the name of the database in which you have to insert:"
            read db
            echo "Enter the student id:"
            read sd
            echo "Enter the student name:"
            read na
            echo "Enter the student department:"
            read dp

            while true; do
                echo "Enter the student phone number:"
                read ph
                if [[ ! "$ph" =~ ^[0-9]{10}$ ]]; then
```

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        echo "Invalid phone number. Please enter 10 digits."
    else
        break
    fi
done

echo "Enter the student email address:"
read em

record="$sd $na $dp $ph $em"
echo $record >> $db
echo "Data Inserted!"
;;
3)
echo "Enter the name of the database in which you want to search:"
read db
echo "Enter the student id to search:"
read search_id
if [ -f "$db" ]; then          #-f:- wheteher the file exists
    data=$(grep "^$search_id " $db)
    if [ -z "$data" ]; then    #-z:- checks whether the string is empty
        echo "Record not found."
    else
        echo "Record found:"
        echo "Student ID | Name | Department | Phone | Email"
        echo "$data"
    fi
else
    echo "$db does not exist."
fi
;;
4)
echo "Enter the name of the database to display:"
read db
if [ -f "$db" ]; then          #-f:- wheteher the file exists
    cat $db
else
    echo "$db does not exist."
fi
;;
5)
echo "Enter the name of the database from which you want to delete a record:"
read db
echo "Enter the student id to delete:"
read delete_id
if [ -f "$db" ]; then          #-f:- wheteher the file exists
    if grep -q "^$delete_id " "$db"; then    #-q:- it is quit mode or silent mode, it does
not return any output so here it only check it exists or not
        grep -v "^$delete_id " "$db" > temp_db && mv temp_db "$db"      #invert
match, except that lines it select other lines

```

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        echo "Record with Student ID $delete_id has been deleted."
    else
        echo "Record not found."
    fi
else
    echo "$db does not exist."
fi
;;
6)
    echo "Enter the name of the database in which you want to update a record:"
read db
echo "Enter the student id to update:"
read update_id
if [ -f "$db" ]; then          #-f:- wheteher the file exists
    if grep -q "^$update_id " "$db"; then          #-
        echo -e "Record found. Enter the field you want to
update:\nName\nDepartment\nPhone\nEmail\n"
        read field

        case "$field" in
            name)
                echo "Enter the new student name:"
                read na
                sed -i "s/^$update_id [^ ]*/$update_id $na/" "$db"      #-i:- make changes in the file
            directly
                echo "Student name has been updated."
                ;;
            department)
                echo "Enter the new student department:"
                read dp
                sed -i "s/^$update_id [^ ]* [^ ]*/$update_id $dp/" "$db"      #-i:- make changes in the file
            directly
                echo "Student department has been updated."
                ;;
            phone)
                while true; do
                    echo "Enter the new student phone number:"
                    read ph
                    if [[ ! "$ph" =~ ^[0-9]{10}$ ]]; then
                        echo "Invalid phone number. Please enter 10 digits."
                    else
                        sed -i "s/^$update_id [^ ]* [^ ]* [^ ]*/$update_id $ph/" "$db"      #-i:- make
changes in the file directly
                        echo "Student phone number has been updated."
                        break
                    fi
                done
                ;;
            email)
                echo "Enter the new student email address:"

```

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        read em
        sed -i "s/^$update_id [^ ]* [^ ]* [^ ]* [^ ]*/$update_id $em/" "$db"    #-i:- make
changes in the file directly
        echo "Student email address has been updated."
        ;;
    *)
        echo "Invalid field. No updates performed."
        ;;
esac
else
echo "Record not found."
fi
else
echo "$db does not exist."
fi
;;

7)
    echo "Exiting..."
    exit 0
    ;;
esac
done

```

## Output: -

```

sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ ./student.sh
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
1
Enter the name of the database:
md.txt
File created successfully!:
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
2
Enter the name of the database in which you have to insert:
md.txt
Enter the student id:
101
Enter the student name:
sahil
Enter the student department:
IT
Enter the student phone number:
9999999999
Invalid phone number. Please enter 10 digits.
Enter the student phone number:
9999999999
Enter the student email address:
sa@gmail.com

```

```
Data Inserted!
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
2
Enter the name of the database in which you have to insert:
md.txt
Enter the student id:
102
Enter the student name:
soham
Enter the student department:
COMP
Enter the student phone number:
8888888888
Enter the student email address:
so@gmail.com
Data Inserted!
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
3
Enter the name of the database in which you want to search:
md.txt
Enter the student id to search:
102
Record found:
Student ID | Name | Department | Phone | Email
102 soham COMP 8888888888 so@gmail.com
```

```
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
4
Enter the name of the database to display:
md.txt
101 sahil IT 9999999999 sa@gmail.com
102 soham COMP 8888888888 so@gmail.com
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
6
Enter the name of the database in which you want to update a record:
md.txt
Enter the student id to update:
102
Record found. Enter the field you want to update:
Name
Department
Phone
Email

name
Enter the new student name:
chinmay
Student name has been updated.
```

```
Enter your choice:
4
Enter the name of the database to display:
md.txt
101 sahil IT 9999999999 sa@gmail.com
102 chinmay COMP 8888888888 so@gmail.com
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
5
Enter the name of the database from which you want to delete a record:
md.txt
Enter the student id to delete:
102
Record with Student ID 102 has been deleted.
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
4
Enter the name of the database to display:
md.txt
101 sahil IT 9999999999 sa@gmail.com
1.CREATE DATABASE
2.INSERT
3.SEARCH
4.DISPLAY
5.DELETE
6.UPDATE
7.EXIT
Enter your choice:
7
Exiting...
sahil@sahil-Lenovo-IdeaPad-S145-15IWL:~/Desktop/OS PRACTICALS SEM 5$ █
```