**LAB# 02**

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**Section: II**

**TASK NO:1**

The contact app on our phone contains a lot of contacts. In ContactApp(class)

perform the following operations:

Display all contact

Search a contact //name -> number

Add a new contact // name, number , pos/index

Update the contact //name1, name2

Delete any contact //

NOTE: Create a 2D array of string type.

**Contact App**

import java.util.Objects;  
import java.util.Scanner;  
  
 class ContactApp {  
  
  
  
 Scanner scan=new Scanner(System.*in*);  
 static int *size*=10;  
 // long[] mobileNo=new long[size];  
 String[][] contacts=new String[*size*][2];  
 static int *index*;  
 void displayAllContacts(){  
 System.*out*.println("Name Mobile Number");  
 for (String[] contact : contacts) {  
 System.*out*.println(contact[0] + " " + contact[1]);  
 }  
 }  
 boolean searchContact(String name){  
 *index*=-1;  
 boolean found=false;  
 for (String[] contact : contacts) {  
 *index*++;  
 if (name.equals(contact[0])) {  
 found = true;  
 break;  
 }  
 }  
 return found;  
 }  
  
 void addNewContact(String name,String mobile){  
 try{  
 for (int i=0;i<contacts.length;i++) {  
 if(contacts[i][0]==null){  
 contacts[i][0]=name;  
 contacts[i][1]=mobile;  
 break;  
 }  
 }  
 }catch (ArrayIndexOutOfBoundsException e){  
 System.*out*.print("Storage is full!");  
 }  
 }  
 void updateContact() {  
 System.*out*.println("Enter name of contact you want to update: ");  
 String name1=scan.nextLine();  
 if(searchContact(name1)){  
 System.*out*.println("1->Change name: \n2->Change mobile number: ");  
 String choice=scan.nextLine();  
 if(choice.equals("1")){  
 System.*out*.print("Enter new name: ");  
 String updatedName=scan.nextLine();  
 contacts[*index*][0]=updatedName;  
 }else if(choice.equals("2")){  
 System.*out*.print("Enter new number: ");  
 String no= scan.nextLine();  
 contacts[*index*][1]=no;  
 }  
 }else System.*out*.println("Contact not found! ");  
  
 }  
  
 void deleteContact(String name){  
 if(searchContact(name)){  
 for(int i=*index*;i>0;i--){  
 contacts[i][0]=contacts[i-1][0];  
 contacts[i][1]=contacts[i-1][1];  
 }  
 contacts[0][0]=null;  
 contacts[0][1]=null;  
 }else System.*out*.println("Contact not found!");  
 }  
}  
  
public class MainApp {  
 public static void main(String[] args) {  
 Scanner scan = new Scanner(System.*in*);  
 ContactApp app = new ContactApp();  
 app.contacts[0][0] = "ABC";  
 app.contacts[0][1] = "03103680643";  
 app.contacts[1][0] = "DEF";  
 app.contacts[1][1] = "03083638394";  
 app.contacts[2][0] = "GHI";  
 app.contacts[2][1] = "03262931264";  
 app.contacts[3][0] = "JKL";  
 app.contacts[3][1] = "03001002001";  
 app.contacts[4][0] = "XYZ";  
 app.contacts[4][1] = "03112233442";  
 String choice;  
 do {  
 System.*out*.println();  
 System.*out*.println("\*\*\*\*\*\*ContactApp\*\*\*\*\*\*");  
 System.*out*.println("1->Display All Contacts");  
 System.*out*.println("2->Search a contact");  
 System.*out*.println("3->Add a new contact");  
 System.*out*.println("4->Update the contact");  
 System.*out*.println("5->Delete any contact");  
 System.*out*.println("0->To exit");  
 choice = scan.nextLine();  
 String name, number;  
 for (int i = 0; i < 30; i++) System.*out*.println();  
 switch (choice) {  
 case "1" -> {  
 app.displayAllContacts();  
 System.*out*.print("Press any key");  
 String temp = scan.nextLine();  
 }  
 case "2" -> {  
 System.*out*.print("Enter name to search: ");  
 name = scan.nextLine();  
 if (app.searchContact(name))  
 System.*out*.println("Contact Found with number " + app.contacts[ContactApp.*index*][1]);  
 else System.*out*.println("Contact not found!");  
 System.*out*.print("Press any key");  
 String temp = scan.nextLine();  
 }  
 case "3" -> {  
 System.*out*.print("Enter number to add: ");  
 number = scan.nextLine();  
 System.*out*.print("Enter name to save this contact: ");  
 name = scan.nextLine();  
 app.addNewContact(name, number);  
 System.*out*.print("Press any key");  
 String temp = scan.nextLine();  
 }  
 case "4" -> {  
 app.updateContact();  
 System.*out*.print("Press any key");  
 String temp = scan.nextLine();  
 }  
 case "5" -> {  
 System.*out*.print("Enter name to delete the contact: ");  
 name = scan.nextLine();  
 app.deleteContact(name);  
 System.*out*.print("Press any key");  
 String temp = scan.nextLine();  
 }  
 }  
 for (int i = 0; i < 50; i++) System.*out*.println();  
 } while (!Objects.*equals*(choice, "0"));  
 }  
}

**Output**

"C:\Program Files\Java\jdk-17.0.4\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2\lib\idea\_rt.jar=52481:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\hp\IdeaProjects\lab3DSA\out\production\lab3DSA MainApp  
  
 \*\*\*\*\*\*ContactApp\*\*\*\*\*\*  
 1->Display All Contacts  
 2->Search a contact  
 3->Add a contact  
 4->Update the contact  
 5->Delete any contact  
 0->To exit

**Task no:02**

The Music app name is FireAir(class) music app which can

perform following functions

print all the array songs/music names one by one.

Adds new songs/music.

Deletes a song/music using the number.

Searches song/music using a number or by the name.

Update song/music (index, value)

**FireAir(class) music app**

import java.util.Objects;  
 import java.util.Scanner;  
  
 class FireAir {  
 Scanner scan=new Scanner(System.*in*);  
 int size=10;  
 static int *index*;  
 String[][] songs;  
 public void printAllSongs(){  
 System.*out*.println("Song# song\n");  
 for (String[] song:songs) {  
 System.*out*.println(song[0]+" "+song[1]);  
 }  
 }  
 public void addNewSong(String song){  
 for (int i=0;i< songs.length;i++){  
 if(songs[i][0]==null){  
 songs[i][0]=String.*valueOf*(i+1);  
 songs[i][1]=song;  
 break;  
 }  
 }  
 }  
 public void deleteSong(int number){  
 for (int i=number-1;i<songs.length;i++){  
 if (songs[i][0]!=null){  
 songs[i][0]=songs[i+1][0];  
 songs[i][1]=songs[i+1][1];  
 }  
 }  
 }  
 public boolean searchSong(String song){  
 *index*=-1;  
 for (String[] strings : songs){  
 *index*++;  
 if (song.equals(strings[1]) || song.equals(strings[0])) return true;  
 }  
 return false;  
 }  
 public void updateSong(String song){  
 if(searchSong(song)){  
 System.*out*.println("1->Update serial number\n2->Update name");  
 String update=scan.nextLine();  
 if(update.equals("1")){  
 System.*out*.print("Enter new number to change the previous number: ");  
 update=scan.nextLine();  
 songs[*index*][0]=update;  
 } else if (update.equals("2")) {  
  
 System.*out*.print("Enter new name to change the previous name: ");  
 update=scan.nextLine();  
 songs[*index*][1]=update;  
 }  
 System.*out*.println("Song updates successfully.");  
 }  
 else System.*out*.println("Song not found!");  
 }  
}  
  
  
  
  
public class MainSongs {  
 public static void main(String[] args) {  
 FireAir obj=new FireAir();  
 obj.songs=new String[obj.size][2];  
 obj.songs[0][0]="1";  
 obj.songs[0][1]="Song1";  
 obj.songs[1][0]="2";  
 obj.songs[1][1]="Song2";  
 obj.songs[2][0]="3";  
 obj.songs[2][1]="Song3";  
 obj.songs[3][0]="4";  
 obj.songs[3][1]="Song4";  
 obj.songs[4][0]="5";  
 obj.songs[4][1]="Song5";  
  
 Scanner scan=new Scanner(System.*in*);  
 String choice;  
 do {  
 System.*out*.println("\*\*\* Music Player \*\*\*\n");  
 System.*out*.println("1->Display All Songs");  
 System.*out*.println("2->Add a new song");  
 System.*out*.println("3->Delete a song");  
 System.*out*.println("4->Searching a song");  
 System.*out*.println("5->Update a song");  
 System.*out*.println("0->To exit");  
 choice = scan.nextLine();  
 String name, number;  
 for(int i=0;i<30;i++) System.*out*.println();  
 switch (choice) {  
 case "1" -> {  
 obj.printAllSongs();  
 System.*out*.print("Press any key");  
 String temp=scan.nextLine();  
 }  
 case "2" -> {  
 System.*out*.print("Enter song name to add: ");  
 name=scan.nextLine();  
 obj.addNewSong(name);  
 System.*out*.println("New song added successfully.");  
 System.*out*.print("Press any key");  
 String temp=scan.nextLine();  
 }  
 case "3" -> {  
 System.*out*.print("Enter serial number of the song to delete: ");  
 name = scan.nextLine();  
 obj.deleteSong(Integer.*parseInt*(name));  
 System.*out*.println("Song with Serial number "+name+" deleted successfully.");  
 System.*out*.print("Press any key");  
 String temp=scan.nextLine();  
 }  
 case "4" -> {  
 System.*out*.print("1->Search by serial number: \n2->Search by song name: \n");  
 number = scan.nextLine();  
 if (number.equals("1")) {  
 System.*out*.print("Enter serial number: ");  
 name = scan.nextLine();  
 if (obj.searchSong(name))  
 System.*out*.println("Song with serial number " + name + " is " + obj.songs[FireAir.*index*][1]);  
 else System.*out*.println("Song not found!");  
 } else if (number.equals("2")) {  
 System.*out*.print("Enter name of the song: ");  
 name = scan.nextLine();  
 if (obj.searchSong(name))  
 System.*out*.println("Song with name " + name + " is found Its serial number is " + obj.songs[FireAir.*index*][0]);  
 else System.*out*.println("Song not found!");  
 }  
 System.*out*.print("Press any key");  
 String temp = scan.nextLine();  
 }  
 case "5" -> {  
 System.*out*.print("Enter serial number or name of the song to update : ");  
 name = scan.nextLine();  
 obj.updateSong(name);  
 System.*out*.print("Press any key");  
 String temp = scan.nextLine();  
 }  
 }  
 for (int i=0;i<50;i++) System.*out*.println();  
 }while (!Objects.*equals*(choice, "0"));  
 }  
  
}

**Output**

"C:\Program Files\Java\jdk-17.0.4\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2\lib\idea\_rt.jar=52513:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\hp\IdeaProjects\lab3DSA\out\production\lab3DSA MainSongs  
 \*\*\* Music Player \*\*\*  
 1->Display All Songs  
 2->Add a new song  
 3->Delete a song  
 4->Searching a song  
 5->Update a song  
 0->To exit