

Open Ended Lab

Course Title: Computer Programming Lab
Course Code: CSL-113
Class: BS (CS)-1B
Lab Instructor: Ms. Fatima Bashir

Date: 14-Jun -23
Max Time: 60 minutes
Marks: 06

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NOTE: For the completion of open ended lab task, students are instructed to utilize their computing knowledge which you have gained in lab experimentation and theory as well. Formulate a clear and concise objective that is defined in the tasks. Prepare a well-structured report that summarizes your problem, approach and implementation.

Instructions

- ✓ Create word file with your name and enrollment # having code and screenshots of output.
- ✓ Upload your Solution on LMS.
- ✓ Cell phones/USB or other electronic devices are not allowed. In case of finding such devices, exam will be cancelled and marked zero.
- ✓ In Case of Cheating/Coping, exam will be marked zero.

Task

[CLO 2, PLO3, P3]

The 911 emergency call service is an emergency telephone number that connects individuals in need to emergency services, such as police, fire departments, or medical assistance. When someone dials 911, it provides a direct line to emergency dispatchers who are trained to handle urgent situations and coordinate appropriate emergency responses. Suppose the emergency service needs software that can store and manage data associated with calls. The following functionalities should be part of the software.

- Emergency call data management - Caller's name, caller id, location, and type of emergency Data should be managed and stored permanently.
- Maintain the call history so it becomes easy to search for any caller.
- Must be easy to read all details of callers in one place.
- Code should be clean and easy to understand.

The Emergency Call service is a software application designed to efficiently manage and store the caller's details and provide a simple, easy-to-remember emergency number that people can call to request immediate assistance in life-threatening or critical situations.



Build a C++ Program by applying appropriate computer programming concepts to manage a call service system that will be able to develop software and provide efficient solutions to the emergency service company.

Evaluation

Problem Solving Capability/Knowledge and Understanding	Appropriate Idea/Critical Thinking	Testing and Debugging/Troub leshooting	Functionality	Technical Competence	Report

Code:

```
#include <iostream>

#include <fstream>

#include <string>

using namespace std;

char emergencyChoice, loopChoice, mainChoice;

string searchName;

ifstream filein;

ofstream fileout;

int i = 0;

struct caller{

    string callerName, callerLocation, emergencyType;

    int callerId;

};

caller callerObj[100];

void reportingEmergency(){

    cout << "Enter your name" << endl;    //storing data in structure

    cin.ignore();

    getline(cin, callerObj[i].callerName);

    cout << "Enter your id" << endl;

    cin >> callerObj[i].callerId;

    cout << "Enter your location" << endl;

    cin.ignore();
```

```
getline(cin, callerObj[i].callerLocation);

cout << "Select the emergency service you want to report" << endl

    << "1. Police" << endl

    << "2. Fire Department" << endl

    << "3. Medical Assistant" << endl;

cin >> emergencyChoice;

if (emergencyChoice == '1'){

    callerObj[i].emergencyType = "Police";

}

else if (emergencyChoice == '2'){

    callerObj[i].emergencyType = "Fire Department ";

}

else if (emergencyChoice == '3'){

    callerObj[i].emergencyType = "Medical Assistant ";

}

cout << "Data recorded successfully" << endl;

//storing data in file

filein.open("caller data.txt");

fileout.open("caller data.txt", ios::app);

fileout << "Name of the caller : " << callerObj[i].callerName << endl;
```



```
fileout << "ID of the caller: " << callerObj[i].callerId << endl;

fileout << "location of the caller: " << callerObj[i].callerLocation << endl;

fileout << "emergency service of the caller: " << callerObj[i].callerId << endl;


fileout.close();


i = i + 1;
}

void callerSearch(){

    bool flag = false;

    cout << "Enter the name of the caller you want to search for" << endl;

    cin >> searchName;

    for (int j = 0; j < i; j++){

        if (callerObj[j].callerName == searchName){

            flag = true;

            cout << "Data found!" << endl;

            cout << "Name of the caller : " << callerObj[j].callerName << endl;


            cout << "ID of the caller: " << callerObj[j].callerId << endl;

            cout << "location of the caller: " << callerObj[j].callerLocation << endl;

            cout << "emergency service of the caller: " << callerObj[j].callerId << endl;

        }

    }

    if (flag == false){

        cout << "The caller you searched for doesn't exist" << endl;

    }

}
```



```
    }  
}  
  
void allData(){  
    string line;  
    while (getline(filein, line)){  
        cout << line << endl;  
    }  
}  
  
int main(){  
  
    cout << "=====" << endl  
        << "      Welcome to 911" << endl  
        << "=====" << endl;  
    do{  
        cout << "1. report an emergency" << endl      //main menu  
            << "2. search for a caller" << endl  
            << "3. Show all callers data" << endl;  
        cin >> mainChoice;  
  
        if (mainChoice == '1'){  
            //reporting an emergency  
            reportingEmergency();  
        }  
    }  
}
```

```

    }

    else if (mainChoice == '2'){

        //search for a caller

        callerSearch();

    }

    else if (mainChoice == '3'){

        //showing all data from file

        allData();

    }

}

cout << "Press y to continue or any other key to exit" << endl;

cin >> loopChoice;

} while (loopChoice == 'y');

system("pause");

return 0;

}

```



Output:

1. Entering the caller record

```
=====
                        Welcome to 911
=====
1. report an emergency
2. search for a caller
3. Show all callers data
1
Enter your name
raza
Enter your id
1234
Enter your location
karsaz
Select the emergency service you want to report
1. Police
2. Fire Department
3. Medical Assistant
1
Data recorded successfully
Press y to continue or any other key to exit
y
```

```
1. report an emergency
2. search for a caller
3. Show all callers data
1
Enter your name
hamza
Enter your id
5678
Enter your location
malir
Select the emergency service you want to report
1. Police
2. Fire Department
3. Medical Assistant
2
Data recorded successfully
Press y to continue or any other key to exit
y
```




2. Searching the data

```
y
1. report an emergency
2. search for a caller
3. Show all callers data
2
Enter the name of the caller you want to search for
raza
Data found!
Name of the caller : raza
ID of the caller: 1234
location of the caller: karsaz
emergency service of the caller: 1234
Press y to continue or any other key to exit
y
1. report an emergency
2. search for a caller
3. Show all callers data
2
Enter the name of the caller you want to search for
hamza
Data found!
Name of the caller : hamza
ID of the caller: 5678
location of the caller: malir
emergency service of the caller: 5678
Press y to continue or any other key to exit
y
```

3 . Showing all data from file (on the console)

```
Press y to continue or any other key to exit
y
1. report an emergency
2. search for a caller
3. Show all callers data
3
Name of the caller : raza
ID of the caller: 1234
location of the caller: karsaz
emergency service of the caller: 1234
=====
Name of the caller : hamza
ID of the caller: 5678
location of the caller: malir
emergency service of the caller: 5678
=====
Press y to continue or any other key to exit
```

3 . Showing all data from file (in the file)

```
Name of the caller : raza
ID of the caller: 1234
location of the caller: karsaz
emergency service of the caller: 1234
=====
Name of the caller : hamza
ID of the caller: 5678
location of the caller: malir
emergency service of the caller: 5678
=====
```