21163

Page No.
Date: / /

Assignment 10

* Title:
Student database using file handling

* Problem Statement:
Department maintains student information. The file contains roll number, name, division & address. Allow user to add delete information of student. Display information of particular student. If record of student does not exist, an appropriate message is displayed. Use sequential file to maintain the data.

* Objective:
1) To understand file handling
2) To understand hashing.

* Outcomes:
I will be able to create student database using concepts of file handling & hashing.

* Requirements:
1) 64 bit operating system
2) Editor, compiler (g++), linker, loader.
3) CPU, RAM

Page No.
Date: / /

✱ Theory

1. File is a stream of bytes. Size of file is expressed in terms of number of bytes.
2. A text file has visible characters whereas binary file consists of different combitions of a byte.

Sequential file:- Records are added in order of arrival.

Random file :- Records can be inserted & retrieved from any position.

✱ Algorithm

1. Write to File:

```
write (int roll, char name, int div) {
        Student s = new student (roll, name, div)
        file. seekp (0, ios::end)
        file. write ((char*) &s, sizeof(s))
}
```

2. Display:

```
display() {
        Student s;
        file. seekg (0, ios::beg)
        while (file. read ((char*)&s, sizeof(s))
                s. displayStudentData();
}
```

Page No.
Date: / /

3. Delete:

```
deleteRecord ( int roll) {
        ofstream newfile ("new.txt" , ios::bin);
        file. seekg (0, ios::beg)
        bool flag = false;
        Student s;
        while (we do not reach eof) {
                if(s.roll = roll){
                        flag = treue
                        continue;
                }
                newfile.write((char*)&s , sizeof(s))
        }
}
```

* Test Cases

	Input	Expected o/p	Actual o/p
	Roll Name Div		
1)	1 Aditya 2	1, Aditya, 2	
	15 Riya 3	15, Riye, 3	Yes
	29 Abhi 4	29, Abhi, 4	
2)	Search 29	29 Abhi 4	Yes
3)	delete 1	15 Riya 3	Yes
		29 Abhi 4	

* Conclusion: We successfully implemented file handling operation using sequential file.