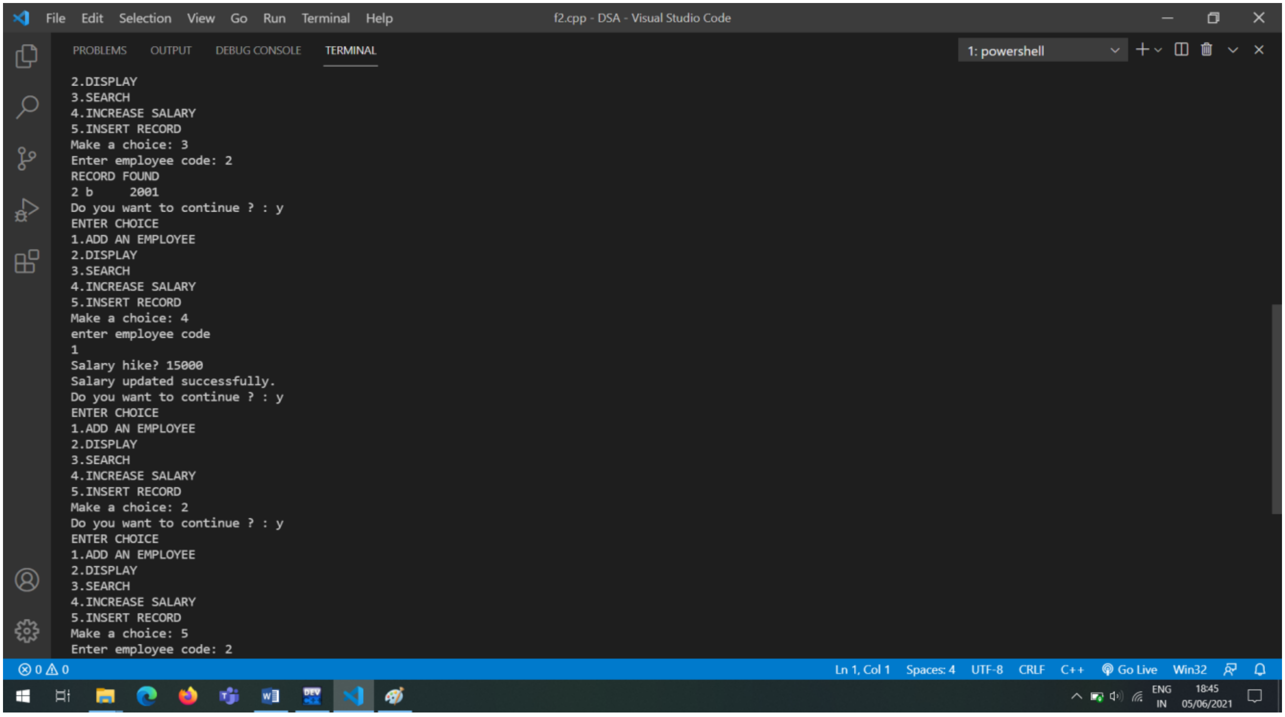
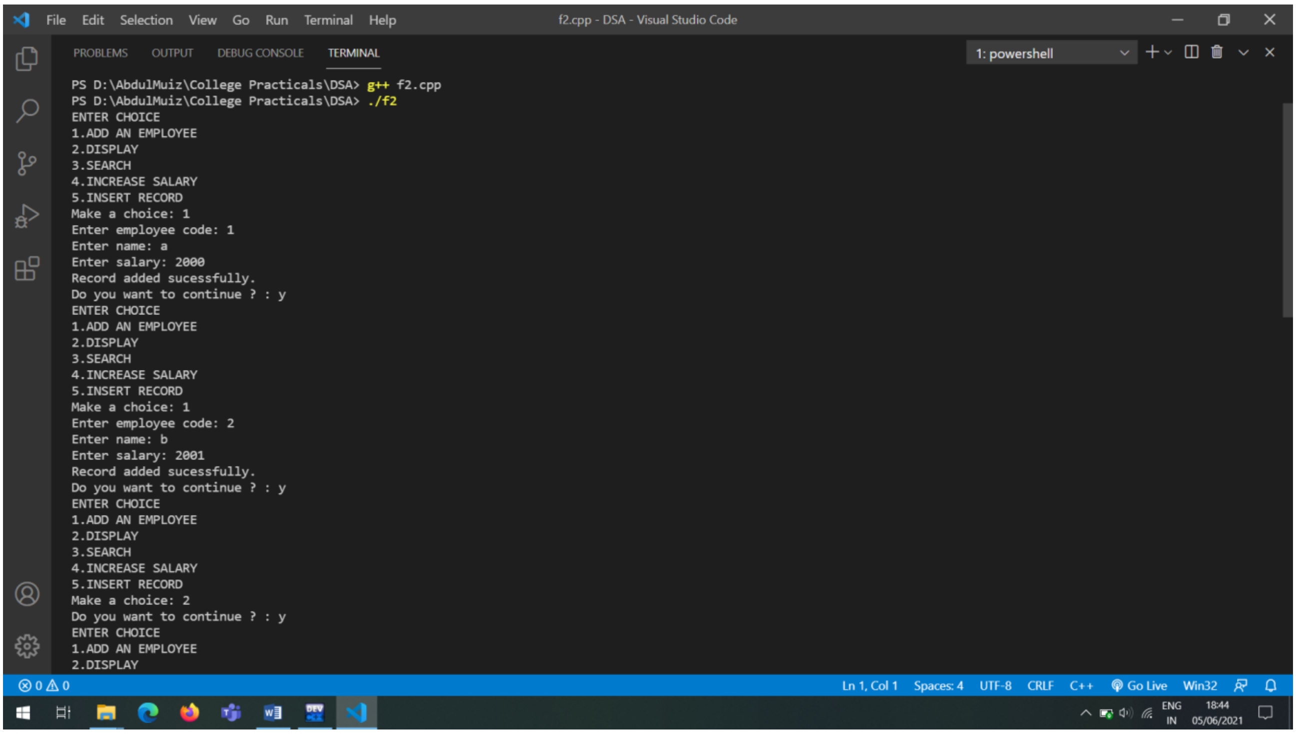
Name: Abdulmuiz Khalid Shaikh
Roll no.:2101062
Subject: Data Structure and Algorithm Laboratory
Assignment No.12

```
#include<iostream>
#include<fstream>
#include<stdio.h>
using namespace std;
//Employee class Declaration
class Employee
{
private:
int code;
char name[20]; float salary;
public:
void read(); void display();
//will return employee code
int getEmpCode()
{
return code;
}
//will return employee salary
int getSalary()
{
return salary;
}
//will update employee salary
void updateSalary(float s)
{
salary=s;
}
};
//Read employee record
void Employee::read(){
cout<<"Enter employee code: ";
cin>>code;
cout<<"Enter name: ";
cin.ignore(1);
cin.getline(name,20);
cout<<"Enter salary: ";
cin>>salary;
}
//Display employee record
void Employee::display()
{
cout<<code<<" "<<name<<"\t"<<salary<<endl;
```

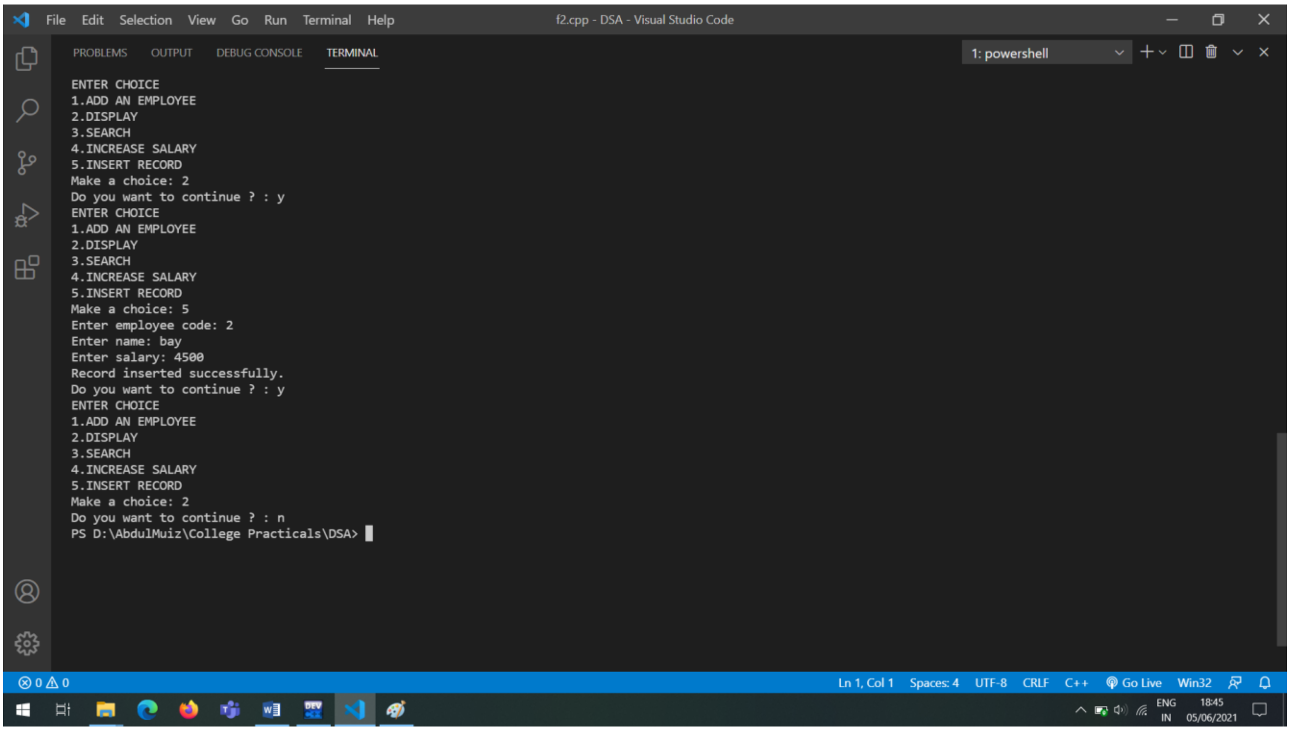
```
}
//global declaration
fstream file;
//Will delete file when program is being executed
//because we are create file in append mode
void deleteExistingFile(){
remove("EMPLOYEE.DAT");
}
//function to append record into file
void appendToFille(){
Employee x;
//Read employee record from user
x.read();
file.open("EMPLOYEE.DAT",ios::binary|ios::app);
if(!file){
cout<<"ERROR IN CREATING FILE\n";
return;
}
//write into file
file.write((char*)&x,sizeof(x));
file.close();
cout<<"Record added sucessfully.\n";
}
void displayAll()
{ Employee x;
file.open("EMPLOYEE.DAT",ios::binary|ios::in);
if(!file){
cout<<"ERROR IN OPENING FILE \n";
return;
}
while(file)
{
if(file.read((char*)&x,sizeof(x)))
if(x.getSalary()>=10000 && x.getSalary()<=20000) x.display();
}
file.close();
}
void searchForRecord(){
//read employee id
Employee x;
int c;
int isFound=0;
cout<<"Enter employee code: ";
cin>>c;
file.open("EMPLOYEE.DAT",ios::binary|ios::in);
if(!file){
cout<<"ERROR IN OPENING FILE \n";
return;
}
while(file)
{
if(file.read((char*)&x,sizeof(x))){
if(x.getEmpCode()==c){
cout<<"RECORD FOUND\n";
x.display(); isFound=1; break;
}
}
}
if(isFound==0){
cout<<"Record not found!!!\n";
}
file.close();
}
//Function to increase salary
void increaseSalary(){
//read employee id
Employee x;
int c;
int isFound=0; float sal;
cout<<"enter employee code \n";
cin>>c;
file.open("EMPLOYEE.DAT",ios::binary|ios::in);
if(!file){
cout<<"ERROR IN OPENING FILE \n";
return;
}
while(file){ if(file.read((char*)&x,sizeof(x))){
if(x.getEmpCode()==c){ cout<<"Salary hike? "; cin>>sal;
x.updateSalary(x.getSalary()+sal); isFound=1;
break;
}
}
}
if(isFound==0){
cout<<"Record not found!!!\n";
}
file.close();
cout<<"Salary updated successfully."<<endl;
}
//Insert record by assuming that records are in
//ascending order
void insertRecord(){
//read employee record
Employee x;
Employee newEmp;
//Read record to insert
newEmp.read();
fstream fin;
//read file in input mode
file.open("EMPLOYEE.DAT",ios::binary|ios::in);
//open file in write mode
fin.open("TEMP.DAT",ios::binary|ios::out);
if(!file){
cout<<"Error in opening EMPLOYEE.DAT file!!!\n"; return;
}
if(!fin){
cout<<"Error in opening TEMP.DAT file!!!\n"; return;
}
while(file){ if(file.read((char*)&x,sizeof(x))){
if(x.getEmpCode()>newEmp.getEmpCode()){
fin.write((char*)&newEmp, sizeof(newEmp));
}
//no need to use else
fin.write((char*)&x, sizeof(x));
}
}
fin.close();
file.close();
rename("TEMP.DAT","EMPLOYEE.DAT");
remove("TEMP.DAT");
cout<<"Record inserted successfully."<<endl;
}
int main()
{
char ch;
//if required then only remove the file
deleteExistingFile();
do{ int n;
cout<<"ENTER CHOICE\n"<<"1.ADD AN
EMPLOYEE\n"<<"2.DISPLAY\n"<<"3.SEARCH\n"<<"4.INCREASE SALARY\n"<<"5.INSERT
RECORD\n";
cout<<"Make a choice: "; cin>>n;
switch(n){ case 1:
appendToFille(); break;
case 2 :
displayAll(); break;
case 3: searchForRecord(); break;
case 4:
increaseSalary(); break;
case 5:
insertRecord(); break;
default :
cout<<"Invalid Choice\n";
}
cout<<"Do you want to continue ? : "; cin>>ch;
}while(ch=='Y'||ch=='y');
return 0;
}
```


File Edit Selection View Go Run Terminal Help
f2.cpp - DSA - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF C++ Go Live Win32
ENG IN 18:45 05/06/2021

```
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 3
Enter employee code: 2
RECORD FOUND
2 b     2001
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 4
enter employee code
1
Salary hike? 15000
Salary updated successfully.
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 2
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 5
Enter employee code: 2
```


File Edit Selection View Go Run Terminal Help
f2.cpp - DSA - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF C++ Go Live Win32
ENG IN 18:44 05/06/2021

```
PS D:\AbdulMuiz\College Practicals\DSA> g++ f2.cpp
PS D:\AbdulMuiz\College Practicals\DSA> ./f2
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 1
Enter employee code: 1
Enter name: a
Enter salary: 2000
Record added sucessfully.
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 1
Enter employee code: 2
Enter name: b
Enter salary: 2001
Record added sucessfully.
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 2
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
```



File Edit Selection View Go Run Terminal Help
f2.cpp - DSA - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: powershell
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF C++ Go Live Win32
ENG IN 18:45 05/06/2021

```
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 2
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 5
Enter employee code: 2
Enter name: bay
Enter salary: 4500
Record inserted successfully.
Do you want to continue ? : y
ENTER CHOICE
1.ADD AN EMPLOYEE
2.DISPLAY
3.SEARCH
4.INCREASE SALARY
5.INSERT RECORD
Make a choice: 2
Do you want to continue ? : n
PS D:\AbdulMuiz\College Practicals\DSA> 
```