

## PPS15

### Aim:

**Q1:** Write a C++ program to create an employee database using class. Each employee should have name, emp\_id and salary. Use getdata() and putdata() member functions to read and print the details of employees.

**Q2:** For the above database perform Linear searching and print a specific employee detail.

### Procedure:

#### **Input:**

Number of employees, n

Employee details

Employee ID of employee whose specific employee detail is required

#### **Output:**

Employee details of the employee whose ID is entered

### **Algorithm:**

#### Class Employee:

Step 1: Create a class Employee

Step 2: Add private data members: Name, ID and Salary

Step 3: Add public member function

1. **getdata():** Input user data for employee details
2. **putdata():** Output user data for employee details

Step 4: Add **Friend** member function

1. **linearSearch(int x, Employee array[]):** Find the details of employee having user input employee id

#### Main Function:

Step 1: Read number of employees n

Step 2: Create an Employee class array with n elements, database[n]

Step 3: Using for loop input data for all employees using 'getdata' function

Step 4: Input ID of employee whose details are required, x

Step 5: Call 'linearSearch' friend function with inputs as 'x' and 'database'

Step 6: Return 0

### LinearSearch Friend Function:

Step 1: Use for loop to iterate through each object in the array

Step 2: Compare employee ID of each object to the ID entered

Step 3: If IDs match then print the employee details using 'putdata' function

### Code:

```
#include <iostream>
using namespace std;
int n;
class Employee {
    char name[30];
    int emp_id, salary;

public:
    void getdata () {
        cout<<"\n\nEmployee ID: ";
        cin>>emp_id;
        cout<<"Employee Name: ";
        cin>>name;
        cout<<"Salary: ";
        cin>>salary;
    }
    void putdata () {
        cout<<"Employee ID: "<<emp_id<<"\n";
        cout<<"Employee Name: "<<name<<"\n";
        cout<<"Salary: "<<salary<<"\n";
    }
    friend void linearSearch (int x, Employee array[]);
};

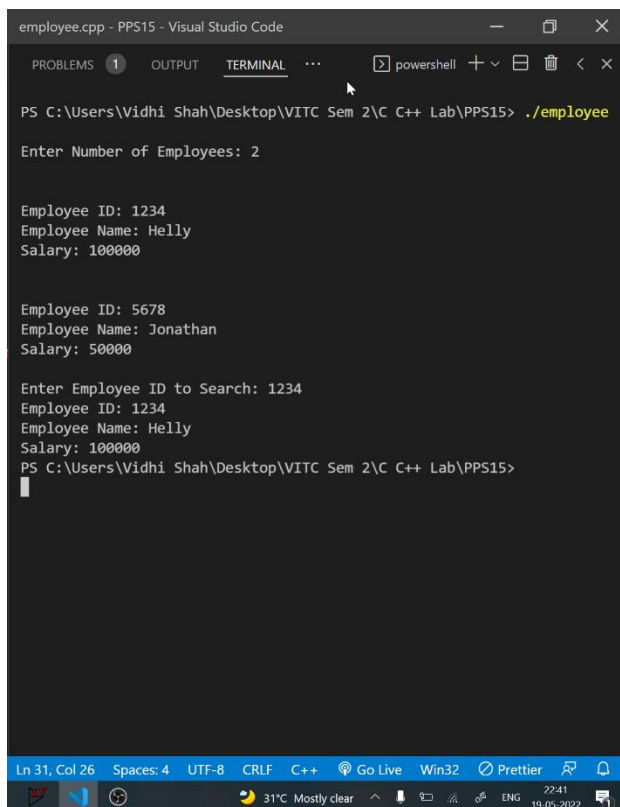
int main() {
    int i, x;
    cout<<"Enter Number of Employees: ";
    cin>>n;
    Employee database[n];

    for (i = 0; i < n; i++) {
        database[i].getdata();
    }

    cout<<"\nEnter Employee ID to Search: ";
    cin>>x;
    linearSearch(x,database);
    return 0;
}
```

```
void linearSearch (int x, Employee array[]) {  
    int i, id;  
    for (i = 0; i < n; i++) {  
        id = array[i].emp_id;  
        if (x == id) {  
            array[i].putdata();  
        }  
    }  
}
```

## Output:



```
employee.cpp - PPS15 - Visual Studio Code  
PROBLEMS 1 OUTPUT TERMINAL ... powershell + - [ ] [ ] [ ]  
PS C:\Users\Vidhi Shah\Desktop\VITC Sem 2\C++ Lab\PPS15> ./employee  
  
Enter Number of Employees: 2  
  
Employee ID: 1234  
Employee Name: Helly  
Salary: 100000  
  
Employee ID: 5678  
Employee Name: Jonathan  
Salary: 50000  
  
Enter Employee ID to Search: 1234  
Employee ID: 1234  
Employee Name: Helly  
Salary: 100000  
PS C:\Users\Vidhi Shah\Desktop\VITC Sem 2\C++ Lab\PPS15>
```

### Q3

#### **Aim:**

Program to create a class ACCOUNTS with function read() to input sales and purchase details. Create a Friend function to print total tax to pay. Assume 4% of profit is tax.

#### **Procedure:**

##### **Input:**

Number of items, n

Purchase price for 'n' items

Sales price for 'n' items

##### **Output:**

Total tax

##### **Algorithm:**

##### **Class Accounts:**

Step 1: Create a class Accounts

Step 2: Add private data members: purchase, sales

Step 3: Add public member function

##### **1. read():**

a. Enter number of items, n

b. Using for loop enter purchase and sales price for n items

Step 4: Add **Friend** member function

##### **1. tax(Accounts object):** Calculate profit and tax

##### **Main Function:**

Step 1: Create an Accounts object, 'company'

Step 2: Call read function

Step 3: Call 'tax' friend function with inputs as 'company'

Step 4: Return 0

##### **Tax Friend Function:**

Step 1: profit = sales - purchase

Step 2: If profit > 0, then tax = 0.04 \* profit, print tax

Step 3: Else print "Company in Loss"

## Code:

```
#include <iostream>
using namespace std;

class Accounts {
    int purchase, sales;

public:
    void read() {
        int i, n;
        cout<<"\nEnter Number of Items: ";
        cin>>n;

        int p[n], s[n];
        purchase = 0;
        cout<<"\nEnter Purchase Price of each Item: \n";
        for (i = 0; i < n; i++) {
            cout<<"Item "<<i+1<<" : ";
            cin>>p[i];
            purchase += p[i];
        }
        sales = 0;
        cout<<"\nEnter Sales Price of each Item: \n";
        for (i = 0; i < n; i++) {
            cout<<"Item "<<i+1<<" : ";
            cin>>s[i];
            sales += s[i];
        }
    }

    friend void tax (Accounts company);
};

int main() {

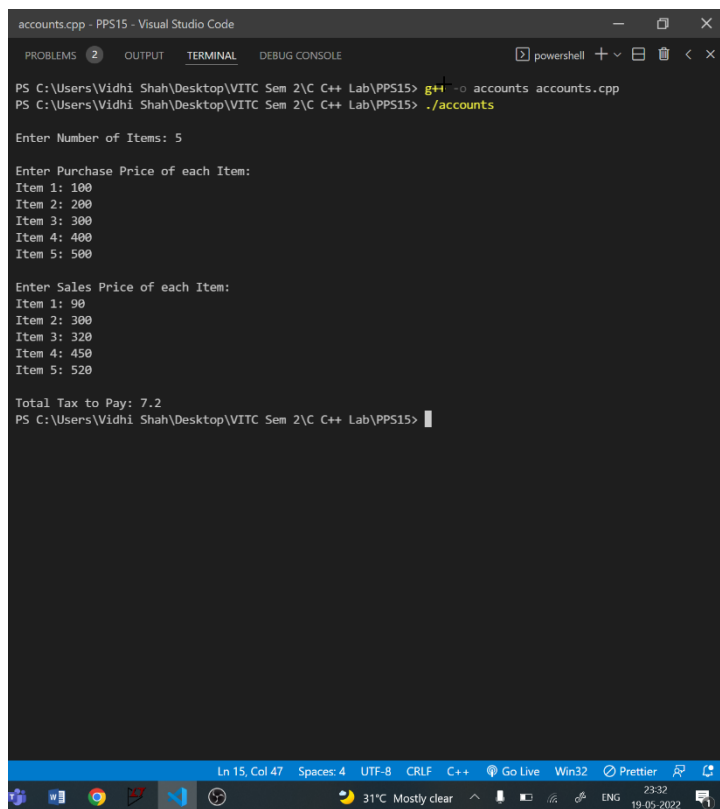
    Accounts company;
    company.read();
    tax(company);
    return 0;
}

void tax (Accounts company) {
    int profit;
    float tax;

    profit = company.sales - company.purchase;
```

```
if (profit > 0) {  
    tax = 0.04 * profit;  
    cout<<"\nTotal Tax to Pay: "<<tax;  
}  
else {  
    cout<<"Company in Loss";  
}  
}
```

## Output:



The screenshot shows a Visual Studio Code window with a terminal open. The terminal output is as follows:

```
accounts.cpp - PPS15 - Visual Studio Code  
PROBLEMS 2 OUTPUT TERMINAL DEBUG CONSOLE  
PS C:\Users\Vidhi Shah\Desktop\VITC Sem 2\C++ Lab\PPS15> g++ -o accounts accounts.cpp  
PS C:\Users\Vidhi Shah\Desktop\VITC Sem 2\C++ Lab\PPS15> ./accounts  
  
Enter Number of Items: 5  
  
Enter Purchase Price of each Item:  
Item 1: 100  
Item 2: 200  
Item 3: 300  
Item 4: 400  
Item 5: 500  
  
Enter Sales Price of each Item:  
Item 1: 90  
Item 2: 300  
Item 3: 320  
Item 4: 450  
Item 5: 520  
  
Total Tax to Pay: 7.2  
PS C:\Users\Vidhi Shah\Desktop\VITC Sem 2\C++ Lab\PPS15> |
```

The status bar at the bottom indicates: Ln 15, Col 47, Spaces: 4, UTF-8, CRLF, C++, Go Live, Win32, Prettier, 31°C Mostly clear, 23:32, 19-05-2022.