EXPERIMENT NO. 01

Name - Vaishnavi Deokar
SE IT
Roll No - 11

PCPF

Experiment No. 01

Aim: To write a program to execute encapsulation and abstraction by using C++.

Theory:
Encapsulation is a process of wrapping similar code in one place. It is one of the key features of object oriented programming language which involves the bundling of data members and functions inside a single class.

Data abstraction is the process which provides essential details to the outside world as well as hides internal details from them i.e., it represents only essential details in the program. Basically abstraction is a programming technique which depends upon the seperation of interface and implementation details of program.

Ways to achieve Encapsulation & Data Abstraction
1. Making all data members private.
2. Making use of classes and header files.
3. Creating public setter and getter functions for each data member in such a way that the set function sets the value of data member and function gets the value of data member.

CODE:

```cpp
1    #include <iostream>
2    #include <fstream>
3    #include <string.h>
4
5    using namespace std;
6
7    class customer
8    {
9    public:
10       string name;
11       long long int phone_number;
12       string email_id;
13       string address;
14       string gender;
15       int age;
16       int number_of_people;
17
18       void getdata()
19       {
20           cin.ignore();
21           cout << "Enter your Name:" << endl;
22           getline(cin, name);
23           cout << "Enter your Phone Number:" << endl;
24           cin >> phone_number;
25           cout << "Enter your Email Id:" << endl;
26           cin >> email_id;
27           cin.ignore();
28           cout << "Enter you address:" << endl;
29           getline(cin, address);
30           cout << "Enter your Gender:" << endl;
31           cin >> gender;
32           cout << "Enter your Age:" << endl;
33           cin >> age;
34       };
35       void showdata()
36       {
37           cout << "NAME:" << name << endl;
```

```cpp
38          cout << "PHONE NUMBER:" << phone_number << endl;
39          cout << "EMAIL ID:" << email_id << endl;
40          cout << "ADDRESS:" << address << endl;
41          cout << "GENDER:" << gender << endl;
42          cout << "AGE:" << age << endl;
43      };
44  };
45  class admin
46  {
47  public:
48      int new_trip;
49      string destination;
50      string duration;
51      string price;
52      int code;
53
54      void getdata()
55      {
56          cout << "Enter Trip Code:" << endl;
57          cin >> code;
58          cin.ignore();
59          cout << "Enter Trip Destination:" << endl;
60          getline(cin, destination);
61          cout << "Enter Trip Duration:" << endl;
62          cin >> duration;
63          cout << "Enter Total Price:" << endl;
64          cin >> price;
65      };
66      void showdata()
67      {
68          cout << "DESTINATION:" << destination << endl;
69          cout << "DURATION:" << duration << endl;
70          cout << "PRICE:" << price << endl;
71      }
72  };
73
```

```c
74  int main()
75  {
76      int choice;
77      printf("\n\n**WELCOME TO EXPLORIANA TOURS AND TRAVELS**\n\n");
78      printf("WHAT'S YOUR ROLE:-\n 1)ADMIN\n 2)CUSTOMER\n\n SELECT AN OPTION:-\n");
79      scanf("%d", &choice);
80      switch (choice)
81      {
82      case 1:
83      {
84          int i;
85          admin a[3];
86          for (i = 1; i <= 3; i++)
87          {
88              printf("Trips are:-\n");
89              a[i].getdata();
90              printf("\n");
91          }
92          for (i = 1; i <= 3; i++)
93          {
94              printf("Trips Details:-\n");
95              a[i].showdata();
96              printf("\n");
97          }
98          break;
99      }
100     case 2:
101     {
102         int trip_code;
103         string date[15];
104         cout << "\t\t\t            ********SELECT A TRIP********\t\t\t\n\n";
105         cout << "\tTRIP CODE\t\tDESTINATION\t\tDURATION\t\tPRICE(IN Rs.)\t\n";
106         cout << "\t------------------------------------------------------------------------\t\n";
107         cout << "\t01          \t\tMANALI      \t\t6D/5N   \t\t12,000       \t\n";
108         cout << "\t02          \t\tMATHERAN    \t\t3D/2N   \t\t8,000        \t\n";
109         cout << "\t03          \t\tGOA         \t\t7D/6N   \t\t16,000       \t\n\n";
110             cout << "ENTER THE TRIP CODE YOU WISH TO GO:-\n";
111             scanf("%d", &trip_code);
112             if (trip_code != 01 && trip_code != 02 && trip_code != 03)
113             {
114                 printf("ENTER A VALID CODE!\n");
115                 printf("CODE EXITED!!");
116             }
117
118             else
119             {
120                 printf("WHEN DO YOU WISH TO GO:-\n");
121                 printf("[Enter in \"DD/MM/YYYY\"FORMAT]\n");
122                 scanf("%s", &date);
123
124                 int x, n;
125                 printf("Enter the number of people:\n");
126                 scanf("%d", &n);
127                 customer b[n];
128
129                 for (x = 0; x < n; x++)
130                 {
131                     printf("\nDETAILS OF %d CUSTOMER:-\n", x + 1);
132                     b[x].getdata();
133                 }
134
135                 printf("\n\nTHANK YOU FOR BOOKING WITH EXPLORIANA TOURS AND TRAVELS\n");
136                 printf("\t*****BILLING SUMMMARY*****\t\n");
137                 printf("TOUR IS SCHEDULED FOR %s ", date);
138                 switch (trip_code)
139                 {
140                 case 01:
141                     printf("TO MANALI FOR 6D/5N.\nTotal amount to be paid is %d for %d people", 12000 * n, n);
142                     break;
143                 case 02:
144                     printf("TO MATHERAN FOR 3D/2N.\nTotal amount to be paid is %d for %d people", 8000 * n, n);
145                     break;
```

```
146          case 03:
147              printf("TO GOA FOR 7D/6N.\nTotal amount to be paid is %d for %d people", 16000 * n, n);
148              break;
149          default:
150              printf("ENTER A VALID CODE!!");
151              break;
152          }
153          for (x = 0; x < n; x++)
154          {
155              printf("\nDETAILS OF %d CUSTOMER:-\n", x + 1);
156              b[x].showdata();
157              printf("\n");
158          }
159          printf("\t\t\t----------HAVE A SAFE TRIP---------");
160      }
161  }
162  }
163 }
```

OUTPUT:

```
*WELCOME TO EXPLORIANA TOURS AND TRAVELS*

WHAT'S YOUR ROLE:-
 1)ADMIN
 2)CUSTOMER

 SELECT AN OPTION:-
1
```

```
Trips are:-
Enter Trip Code:
01
Enter Trip Destination:
MANALI
Enter Trip Duration:
6D/5N
Enter Total Price:
12,000

Trips are:-
Enter Trip Code:
02
Enter Trip Destination:
MATHERAN
Enter Trip Duration:
3D/2N
Enter Total Price:
8,000
```

```
Trips are:-
Enter Trip Code:
03
Enter Trip Destination:
GOA
Enter Trip Duration:
7D/6N
Enter Total Price:
16,000
```

```
Trips Details:-
DESTINATION:MANALI
DURATION:6D/7N
PRICE:12,000

Trips Details:-
DESTINATION:MATHERAN
DURATION:3D/2N
PRICE:8,000

Trips Details:-
DESTINATION:GOA
DURATION:7D/6N
PRICE:16,000
```

2ND OUTPUT:

```
*WELCOME TO EXPLORIANA TOURS AND TRAVELS*

WHAT'S YOUR ROLE:-
  1)ADMIN
  2)CUSTOMER


  SELECT AN OPTION:-
2
```

```
                        ***SELECT A TRIP***

        TRIP CODE           DESTINATION        DURATION           PRICE(IN Rs.)
        -----------------------------------------------------------------------------
        01                  MANALI             6D/5N              12,000
        02                  MATHERAN           3D/2N              8,000
        03                  GOA                7D/6N              16,000
ENTER THE TRIP CODE YOU WISH TO GO:-
01
WHEN DO YOU WISH TO GO:-
[Enter in "DD/MM/YYYY"FORMAT]
09/12/2021
Enter the number of people:
2
```

```
DETAILS OF 1 CUSTOMER:-
Enter your Name:
ROHAN RAUT
Enter your Phone Number:
9898987700
Enter your Email Id:
rohanraut@gmail.com
Enter you address:
BANDRA MUMBAI
Enter your Gender:
MALE
Enter your Age:
25
```

```
DETAILS OF 2 CUSTOMER:-
Enter your Name:
JYOTI PATIL
Enter your Phone Number:
979797800
Enter your Email Id:
patiljyoti@gmail.com
Enter you address:
MIRA ROAD
Enter your Gender:
FEMALE
Enter your Age:
22
```

```
THANK YOU FOR BOOKING WITH EXPLORIANA TOURS AND TRAVELS
        **BILLING SUMMMARY**
TOUR IS SCHEDULED FOR 09/12/2021 TO MANALI FOR 6D/5N.
Total amount to be paid is 24000 for 2 people
DETAILS OF 1 CUSTOMER:-
NAME:ROHAN RAUT
PHONE NUMBER:9898987700
EMAIL ID:rohanraut@gmail.com
ADDRESS:BANDRA MUMBAI
GENDER:MALE
AGE:25

                    ----------HAVE A SAFE TRIP----------
DETAILS OF 2 CUSTOMER:-
NAME:JYOTI PATIL
PHONE NUMBER:979797800
EMAIL ID:patiljyoti@gmail.com
ADDRESS:MIRA ROAD
GENDER:FEMALE
AGE:22

                    ----------HAVE A SAFE TRIP----------
```

CONCLUSION:

Conclusion: We have successfully executed operations like encapsulation and abstraction by using C++