Programming Laboratory-I

Assignment No-6

(Stream classes and File handling)

PRN : 2020BTECS00005

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1. Write a program to read a list containing item name, item code, and cost interactively and produce a three column output as shown below.

NAME	CODE	COST
Turbo C++	1001	250.95
C Primer	905	95.70

Note that the name and code are left justified and the cost is right justified with a precision of two digits. Trailing zeros are shown.

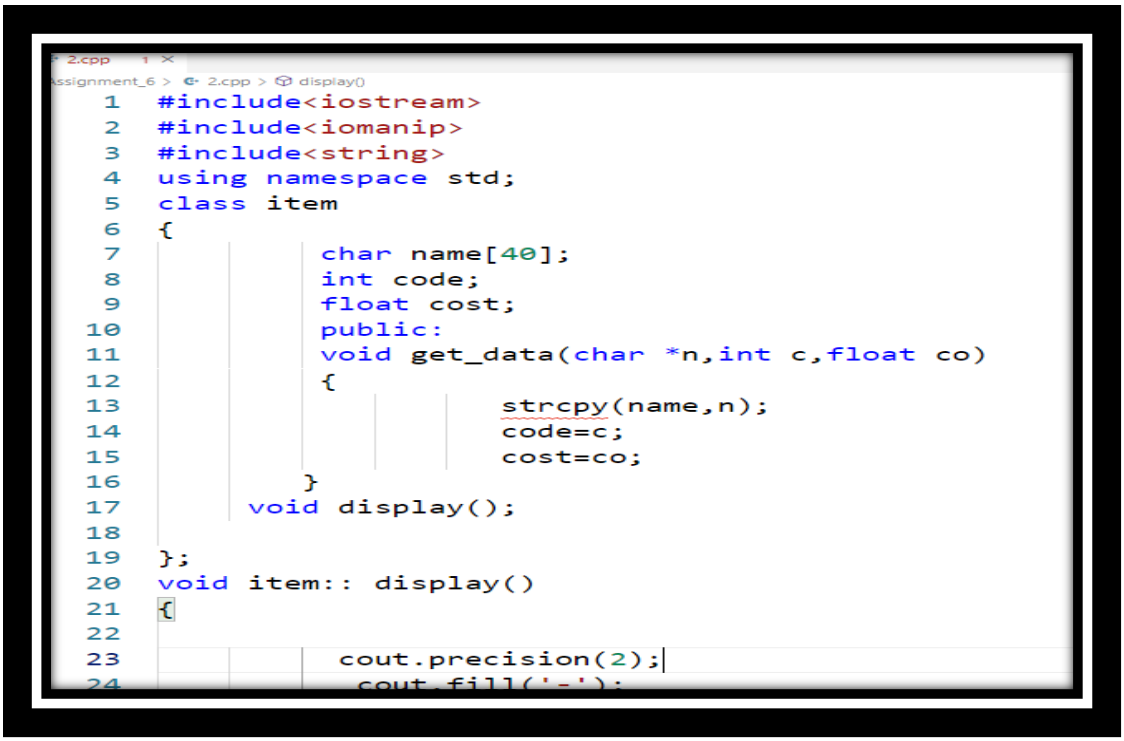
CODE:

```cpp
int main()
{int i;
        item a[5];
        a[0].get_data("Tarbo C++",1001,250.95);
        a[1].get_data("C primer",905,95.7);
        a[2].get_data("algorithm",1111,120.5);
        a[3].get_data("principle of electronics",2220,150.85);
        a[4].get_data("solution of balagurusamy",6666,145.00);
      cout<<setw(10)<<"name"<<setw(34)<<"code"<<setw(15)<<"cost"<<endl;
       for(int i=0;i<60;i++)
        cout<<"-";
        cout<<endl;
        for(i=0;i<5;i++)
        a[i].display();
        return 0;
}
```

OUTPUT:

```
name          code          cost

____________________________________-----

Tarbo C++       1001      250.95
C Primer         905      95.70
Algorithm       1111       120.50
Principle of electronics   2220   150.85
Solution of balaguruswamy   6666   145.00
```

2. Modify the above program to fill the unused spaces with hyphens.
   CODE:



```cpp
#include<iostream>
#include<iomanip>
#include<string>
using namespace std;
class item
{
        char name[40];
        int code;
        float cost;
        public:
        void get_data(char *n,int c,float co)
        {
                strcpy(name,n);
                code=c;
                cost=co;
        }
      void display();

};
void item:: display()
{

        cout.precision(2);
        cout.fill('-');
        cout.setf(ios::showpoint);
        cout.setf(ios::left,ios::adjustfield);
        cout<<setw(40)<<name<<code;
       cout.setf(ios::right,ios::adjustfield);
       cout<<setw(15)<<cost<<endl;
}

int main()
{
       item a[5];
        a[0].get_data("Tarbo C++",1001,250.95);
        a[1].get_data("C primer",905,95.7);
    a[2].get_data("algorithm",1111,120.5);
        a[3].get_data("principle of electronics",2220,150.85);
        a[4].get_data("solution of balagurusamy",6666,145.00);
       cout<<setw(10)<<"name"<<setw(34)<<"code"<<setw(15)<<"cost"<<endl
        for(int i=0;i<60;i++)
         cout<<"-";
          cout<<endl;
          int i;
          for(i=0;i<5;i++)
           a[i].display();
      return 0;
}
```

OUTPUT:

```
name        code        cost

_____________________________-

Tarbo C++ ———————- 1001———-250.95
C Primer ————————-905————-95.70
algorithm————————-1111————120.50
Principle of electronics——2220———-150.85
Solution of balaguruswamy-6666——— 145.00
```

3. Write a program which reads a text from the keyboard and displays the following information on the screen in two columns:
   (a) Number of lines
   (b) Number of words
   (c) Number of characters

   Strings should be left-justified and numbers should be right-justified in a suitable field width.

   CODE:

3.cpp 2

Assignment_6 > 3.cpp > main()

```cpp
#include<iostream>
#include<iomanip>
#include<string>
#include<bits/stdc++.h>
using namespace std;
int main()
{
                char line[1000];
                char ch;
                 int c;
                 int word,lines,chr;
                 word=0;
                 lines=0;
                 chr=0;
                 int end=0;
                cout<<" Enter text : \n";
                while(end==0)
                 {
                       c=0;
                                while((ch=getchar())!='\n')
                  line1=ch;
                  line1='\0';
                  if(line[0]=='\0')
                            break;
                            else
```

3.cpp 2

Assignment_6 > 3.cpp > main()

```cpp
                            break;
                            else
                            {
                                      word++;
                                      for(int i=0;line[i]!='\0';i++)
                                  if(line[i]==' ' || line[i]=='\t' || line[i]=='\n')
                                            word++;
                             }
                             lines++;
                        chr+=strlen(line);
                    }

              cout.setf(ios::left,ios::adjustfield);
           cout<<setw(25)<<"Number of lines"<<setw(25)
            <<"Number of words "<<"Number of characters "<<endl;
            cout.setf(ios::right,ios::adjustfield);
            cout<<setw(10)<<lines<<setw(24)<<word<<setw(25)<<chr<<endl<<endl;
    return 0;
}
```

OUTPUT:

```
santo reads a poem.
He is good  person human.
He respects his teachers.
He feels shy when I admire him.
I like his morality.
No. of lines      No.of words       No.of characters

5                       25                      128
```

4. Write a program that reads a text file and creates another file that is identical except that every sequence of consecutive blank spaces is replaced by a single apace.

CODE:

```
gnment_6 > C++ 4.cpp > ...
 1  #include <bits/stdc++.h>
 2  using namespace std;
 3
 4  int main()
 5  {
 6      char ch;
 7      int count = 0;
 8      ifstream in_stream;
 9      ofstream out_stream;
10
11      in_stream.open("A.txt");
12      out_stream.open("B.txt");
13      while (!in_stream.eof())
14      {
15          ch = (char)in_stream.get();
16          if (isspace(ch))
17              count++;
18          if (count >= 2){
19              ch = ' ';
20              count = 0;}
21          else
22          {
23              out_stream << ch; }}
24  }
```

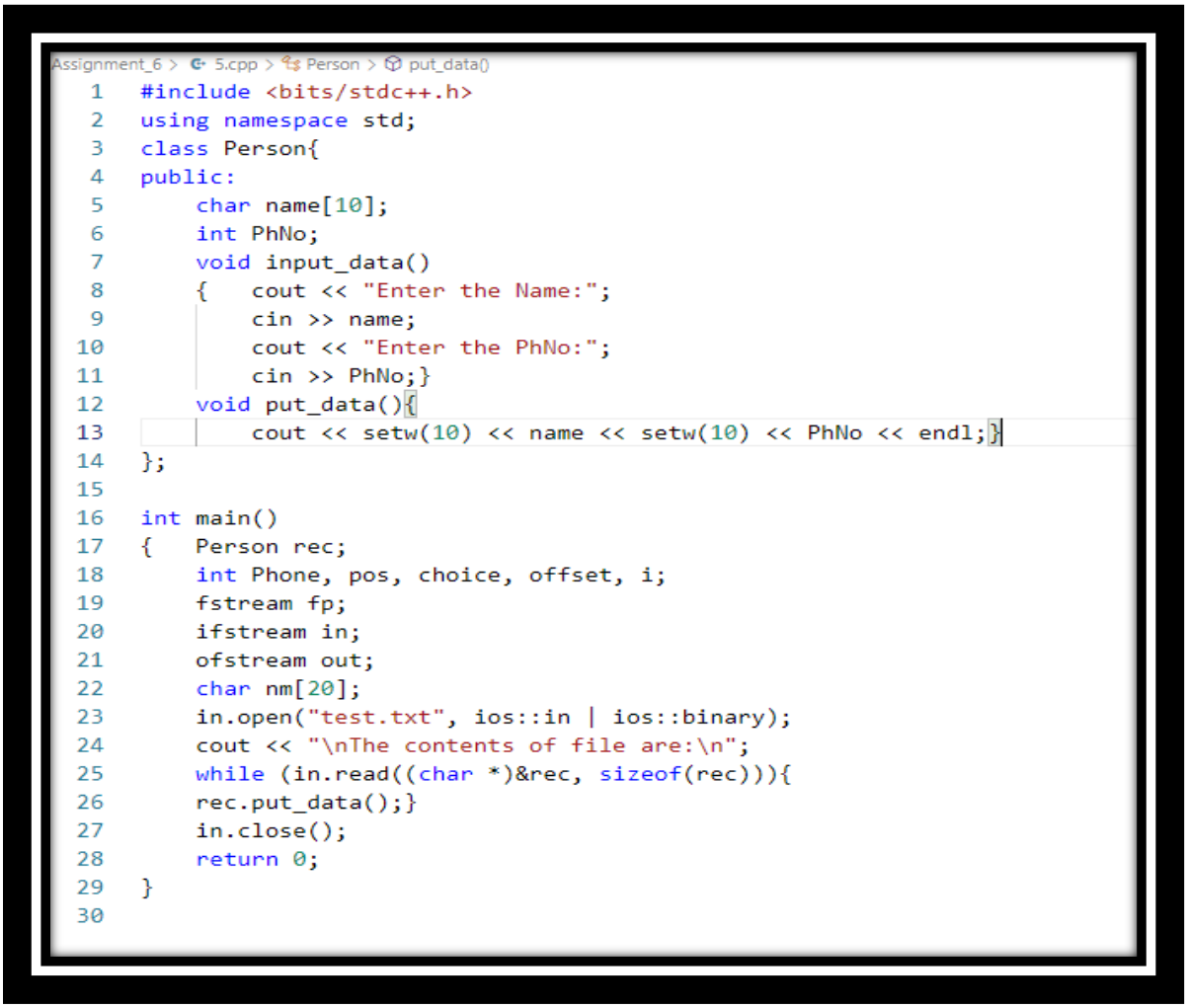
OUTPUT:

```
The New file is been created and data updated successfully .
```

5. A file contains a list of telephone numbers in the following form

   John 23456
   Ahmed 9976
   The names contain only one word and the names and telephone numbers are separated by white spaces.
   Write a program to read the file and output the list in two columns. The names should be left-justified and the numbers right-justified.

   CODE:



   OUTPUT:

```
Contents of File are:
Ahmed  3456353456
John   2385939326
```

6. Write a program that will create a data file containing the First of telephone numbers given in above example- Use a class object to store each set of data.

CODE:

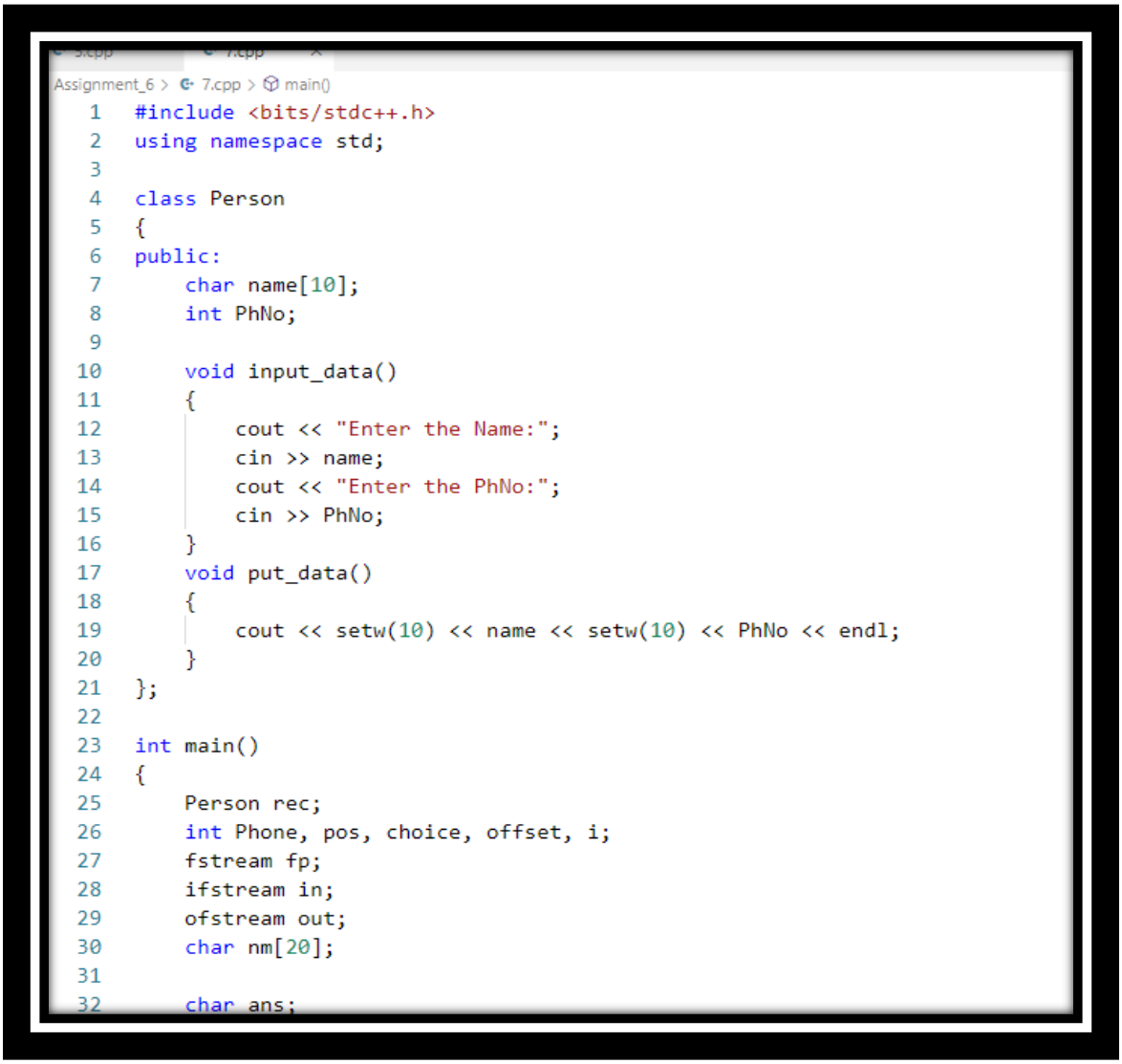
```cpp
#include <bits/stdc++.h>
using namespace std;

class Person{
public:
    char name[10];
    int PhNo;

    void input_data(){
        cout << "Enter the Name:";
        cin >> name;
        cout << "Enter the PhNo:";
        cin >> PhNo;}
    void put_data(){
        cout << setw(10) << name << setw(10) << PhNo << endl; }
};

int main()
{   Person rec;
    int Phone, pos, choice, offset, i;
    fstream fp;
    ifstream in;
    ofstream out;
    char nm[20];
    rec.input_data();
    char ch;
    cin.get(ch);
    out.open("test.txt", ios::out | ios::app | ios::binary);
    out.write((char *)&rec, sizeof(rec));
    out.close();
    return 0;
}
```

OUTPUT:

```
John   2385939326
Ahmed  7829377458
Mayur  2893050346
```

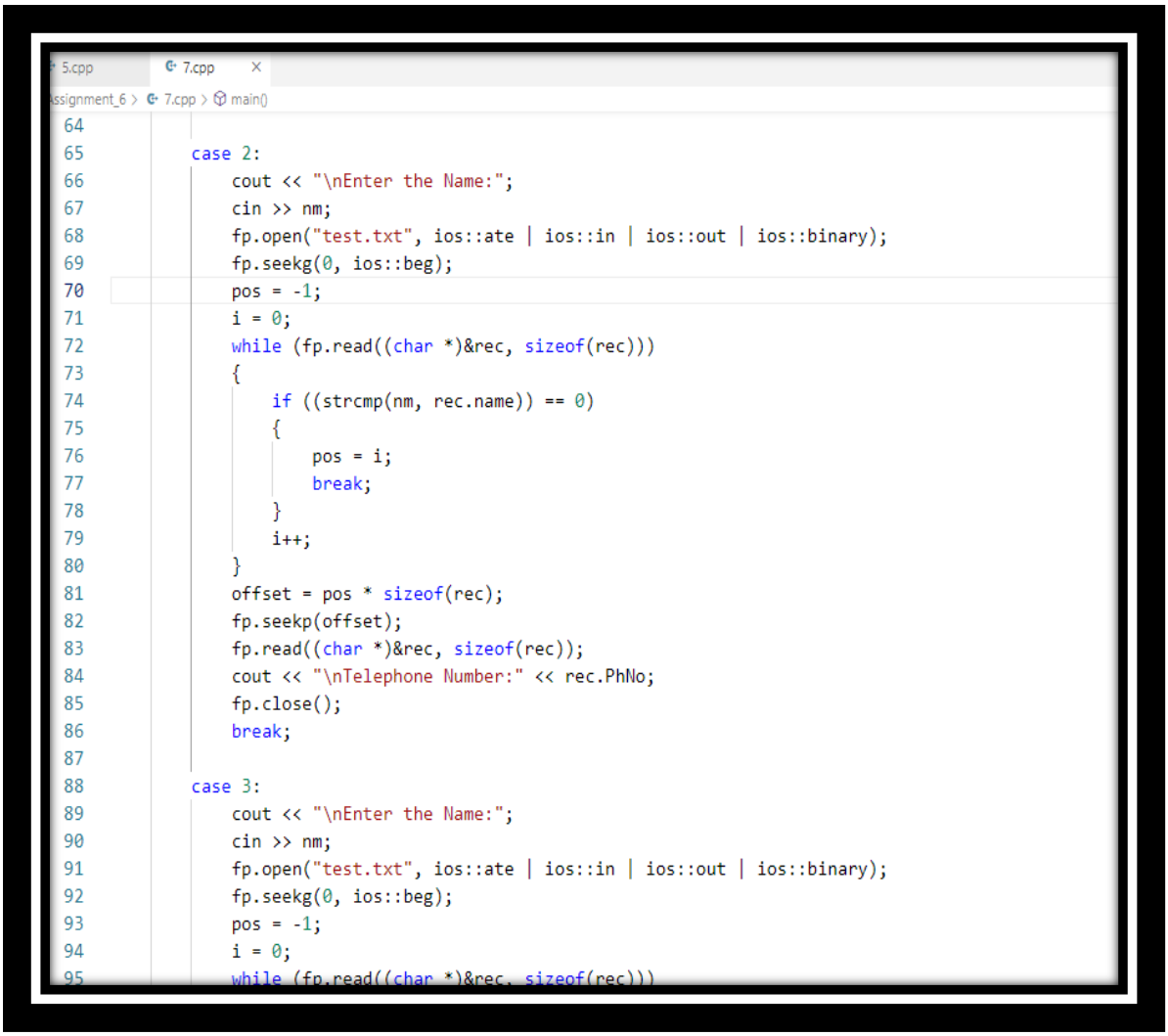
7. Write an interactive, menu-driven program that will access the file created above example and implement the following tasks.
   (a) Determine the telephone number of the specified person.
   (b) Determine the name if a telephone number is known.
   (c) Update the telephone number, whenever there is a change

CODE:



```
Assignment_6 > 7.cpp > main()
#include <bits/stdc++.h>
using namespace std;

class Person
{
public:
    char name[10];
    int PhNo;

    void input_data()
    {
        cout << "Enter the Name:";
        cin >> name;
        cout << "Enter the PhNo:";
        cin >> PhNo;
    }
    void put_data()
    {
        cout << setw(10) << name << setw(10) << PhNo << endl;
    }
};

int main()
{
    Person rec;
    int Phone, pos, choice, offset, i;
    fstream fp;
    ifstream in;
    ofstream out;
    char nm[20];

    char ans;
```


Assignment_6 > 7.cpp > main()
31
32 char ans;
33 do
34 {
35 cout << "\n1.Determine Name if telephone number is specified";
36 cout << "\n2.Determine telephone if name is specifeied";
37 cout << "\n3.Update telephone number";
38 cout << "\nEnter the choice:";
39 cin >> choice;
40 switch (choice)
41 {
42 case 1:
43 cout << "\nEnter the phone No:";
44 cin >> Phone;
45 fp.open("test.txt", ios::ate | ios::in | ios::out | ios::binary);
46 fp.seekg(0, ios::beg);
47 pos = -1;
48 i = 0;
49 while (fp.read((char *)&rec, sizeof(rec)))
50 {
51 if (Phone == rec.PhNo)
52 {
53 pos = i;
54 break;
55 }
56 i++;
57 }
58 offset = pos * sizeof(rec);
59 fp.seekp(offset);
60 fp.read((char *)&rec, sizeof(rec));
61 cout << "\nName:" << rec.name;
62 fp.close();


5.cpp
7.cpp
Assignment_6 > 7.cpp > main()
64
65 case 2:
66 cout << "\nEnter the Name:";
67 cin >> nm;
68 fp.open("test.txt", ios::ate | ios::in | ios::out | ios::binary);
69 fp.seekg(0, ios::beg);
70 pos = -1;
71 i = 0;
72 while (fp.read((char *)&rec, sizeof(rec)))
73 {
74 if ((strcmp(nm, rec.name)) == 0)
75 {
76 pos = i;
77 break;
78 }
79 i++;
80 }
81 offset = pos * sizeof(rec);
82 fp.seekp(offset);
83 fp.read((char *)&rec, sizeof(rec));
84 cout << "\nTelephone Number:" << rec.PhNo;
85 fp.close();
86 break;
87
88 case 3:
89 cout << "\nEnter the Name:";
90 cin >> nm;
91 fp.open("test.txt", ios::ate | ios::in | ios::out | ios::binary);
92 fp.seekg(0, ios::beg);
93 pos = -1;
94 i = 0;
95 while (fp.read((char *)&rec, sizeof(rec)))

OUTPUT:

```
1
John: 2385939326
2
2385939326
The Name of the Contact is John
3
John 2345901829
The phone directory is successfully updated.
```