```
#include <iostream>
using std::cout;
using std::endl;

class CDemo
{
    int iNo;
    float fNo;
    double dNo;
    char chChar;

    int *pPtr1;
    int *pPtr2;

public:
    CDemo()
    {
        iNo = 0;
        fNo = 0.0f;
        dNo = 0.0;
        chChar = '\0';

        pPtr1 = NULL;

        pPtr2 = new int[3];
        if(NULL == pPtr2)
        {
            cout << "Memory allocation FAILED";
            return;
        }

        /*
        for(int iCounter = 0; iCounter < 3; iCounter++)
            pPtr2[iCounter] = 0;
        */

        memset(pPtr2, 0, 3 * sizeof(int));
    }

    void Set(int iParam, float fParam, double dParam, char chParam)
    {
        iNo = iParam;
        fNo = fParam;
        dNo = dParam;
        chChar = chParam;

        pPtr1 = &iNo;

        for(int iCounter = 0; iCounter < 3; iCounter++)
            pPtr2[iCounter] = iParam + iCounter + 1;
    }

    void Get()
    {
        cout << "iNo is " << iNo << endl;
        cout << "fNo is " << fNo << endl;
        cout << "dNo is " << dNo << endl;
        cout << "chChar is " << chChar << endl;

        cout << "&iNo is " << &iNo << endl;
        cout << "pPtr1 is " << pPtr1 << endl;
        if(pPtr1 != NULL)
            cout << "*pPtr1 is " << *pPtr1 << endl;

        cout << "pPtr2 is " << pPtr2 << endl;
        cout << "pPtr2 values are:\t";
        for(int iCounter = 0; iCounter < 3; iCounter++)
```

```
68              cout << "pPtr2[" << iCounter << "] = " << pPtr2[iCounter] << "\t";
69
70          cout << endl;
71      }
72
73      CDemo(CDemo &refObj)
74      {
75          cout << "\nIn copy contructor\n";
76
77          iNo = refObj.iNo;
78          fNo = refObj.fNo;
79          dNo = refObj.dNo;
80          chChar = refObj.chChar;
81
82          pPtr1 = &iNo;
83          pPtr2 = new int[3];
84          if(NULL == pPtr2)
85          {
86              cout << "Memory allocation FAILED\n";
87              return;
88          }
89
90          /*
91          for(int iCounter = 0; iCounter < 3; iCounter++)
92              pPtr2[iCounter] = refObj.pPtr2[iCounter];
93          */
94
95          memcpy(pPtr2, refObj.pPtr2, 3 * sizeof(int));
96      }
97
98      CDemo& operator =(CDemo &refOperand2)
99      {
100         cout << "\nIn assignment operator\n";
101
102         iNo = refOperand2.iNo;
103         fNo = refOperand2.fNo;
104         dNo = refOperand2.dNo;
105         chChar = refOperand2.chChar;
106
107         pPtr1 = &iNo;
108
109         if(NULL == pPtr2)   // In our case, pPtr2 surely NOT NULL
110         {
111             pPtr2 = new int[3];
112             if(NULL == pPtr2)
113             {
114                 cout << "Memory allocation FAILED\n";
115                 return *this;
116             }
117         }
118         /*
119         for(int iCounter = 0; iCounter < 3; iCounter++)
120             pPtr2[iCounter] = refObj.pPtr2[iCounter];
121         */
122
123         memcpy(pPtr2, refOperand2.pPtr2, 3 * sizeof(int));
124
125         return *this;
126     }
127
128     ~CDemo()
129     {
130         iNo = 0;
131         fNo = 0.0f;
132         dNo = 0.0;
133         chChar = '\0';
134
```

```
135          pPtr1 = NULL;
136
137          if(pPtr2 != NULL)
138          {
139              delete pPtr2;
140              pPtr2 = NULL;
141          }
142      }
143
144  };
145
146  int main(void)
147  {
148      CDemo obj1;
149
150      cout << "OBJ1 values are:\n";
151      obj1.Get();
152
153      obj1.Set(10, 57.33f, 69.33, 'A');
154      cout << "\nOBJ1 values are:\n";
155      obj1.Get();
156
157      CDemo obj2 = obj1;
158      cout << "\nOBJ2 values are:\n";
159      obj2.Get();
160
161      CDemo obj3;
162      obj3 = obj1;
163      cout << "\nOBJ3 values are:\n";
164      obj3.Get();
165
166      return 0;
167  }
168
```