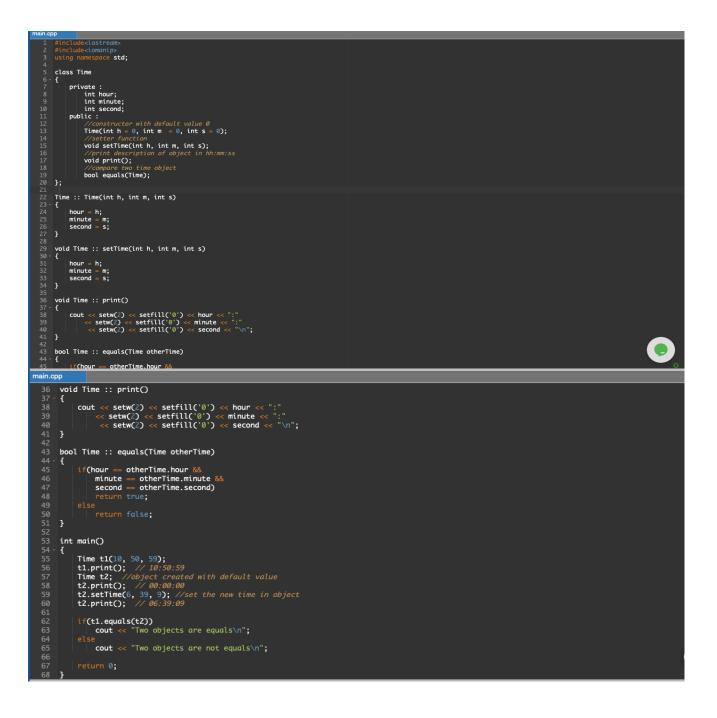Name =Rajdeep Jaiswal.   UID = 20BCS2761
Group = 26 B   BRANCH = Btech (CSE)
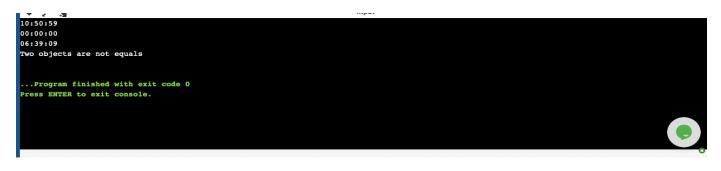Semester=2nd
Sub=c++ Lab MST

Question-1
Define a class named Time with Hours,minutes and Seconds data members as its data members
declared in private sections of the class. Define the following -
    1. Parameterized Constructor that takes time in seconds as its only arguments and initialize the
       hours,minutes and seconds data members with appropriate values.

       CODE in compiler

```cpp
main.cpp
1   #include<iostream>
2   #include<iomanip>
3   using namespace std;
4
5   class Time
6 - {
7       private :
8           int hour;
9           int minute;
10          int second;
11      public :
12          //constructor with default value 0
13          Time(int h = 0, int m = 0, int s = 0);
14          //setter function
15          void setTime(int h, int m, int s);
16          //print description of object in hh:mm:ss
17          void print();
18          //compare two time object
19          bool equals(Time);
20  };
21
22  Time :: Time(int h, int m, int s)
23 - {
24      hour = h;
25      minute = m;
26      second = s;
27  }
28
29  void Time :: setTime(int h, int m, int s)
30 - {
31      hour = h;
32      minute = m;
33      second = s;
34  }
35
36  void Time :: print()
37 - {
38      cout << setw(2) << setfill('0') << hour << ":"
39          << setw(2) << setfill('0') << minute << ":"
40          << setw(2) << setfill('0') << second << "\n";
41  }
42
43  bool Time :: equals(Time otherTime)
44 - {
45      if(hour == otherTime.hour &&
```

```cpp
main.cpp
36  void Time :: print()
37 - {
38      cout << setw(2) << setfill('0') << hour << ":"
39          << setw(2) << setfill('0') << minute << ":"
40          << setw(2) << setfill('0') << second << "\n";
41  }
42
43  bool Time :: equals(Time otherTime)
44 - {
45      if(hour == otherTime.hour &&
46          minute == otherTime.minute &&
47          second == otherTime.second)
48          return true;
49      else
50          return false;
51  }
52
53  int main()
54 - {
55      Time t1(10, 50, 59);
56      t1.print();  // 10:50:59
57      Time t2;  //object created with default value
58      t2.print();  // 00:00:00
59      t2.setTime(6, 39, 9); //set the new time in object
60      t2.print();  // 06:39:09
61
62      if(t1.equals(t2))
63          cout << "Two objects are equals\n";
64      else
65          cout << "Two objects are not equals\n";
66
67      return 0;
68  }
```

OUTPUT-

```
10:50:59
00:00:00
06:39:09
Two objects are not equals


...Program finished with exit code 0
Press ENTER to exit console.
```

2   Copy Constructors.

Code in compiler

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

class Point
{
private:
    int x, y;
public:
    Point(int x1, int y1) { x = x1; y = y1; }

    // Copy constructor
    Point(const Point &p1) {x = p1.x; y = p1.y; }

    int getX()              {  return x; }
    int getY()              {  return y; }
};

int main()
{
    Point p1(10, 15); // Normal constructor is called here
    Point p2 = p1; // Copy constructor is called here

    // Let us access values assigned by constructors
    cout << "p1.x = " << p1.getX() << ", p1.y = " << p1.getY();
    cout << "\np2.x = " << p2.getX() << ", p2.y = " << p2.getY();

    return 0;
}
```

Output-

```
p1.x = 10, p1.y = 15
p2.x = 10, p2.y = 15

...Program finished with exit code 0
Press ENTER to exit console.
```