OOP-LAB Task 8

Roll No: 24P-0706 **Dept: BS-CS**

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QNS-1:

```
#include<iostream>
using namespace std;
class time{
   int hours , minutes , seconds;
   public:
   time(){
      hours = 0;
      minutes = 0;
      seconds = 0;
   };
   time(int h, int m, int s){
      hours = h;
      minutes = m;
      seconds = s;
   };
   void display(){
      cout<<hours<<":"<<minutes<<":"<<seconds<<endl;
   };
   time operator+(time t){
      time temp;
      temp.seconds = seconds + t.seconds;
      temp.minutes = minutes + t.minutes + (temp.seconds / 60);
```

```
        temp.hours = hours + t.hours + (temp.minutes / 60);
        temp.seconds %= 60;
        temp.minutes %= 60;
        return temp;
    };
};
int main(){
    time t1(2, 30, 45);
    time t2(1, 45, 50);
    time t3 = t1 + t2;
    cout<<"Time 1: ";
    t1.display();
    cout<<"Time 2: ";
    t2.display();
    cout<<"Sum of (Time 1 and Time 2 ): ";
    t3.display();
    return 0;
}
```

Output:

```
PS C:\Users\Azan Noor\OneDrive\Desktop\Lab Task Opp\labtask-8> ./output
Time 1: 2:30:45
Time 2: 1:45:50
Sum of (Time 1 and Time 2 ): 4:16:35
PS C:\Users\Azan Noor\OneDrive\Desktop\Lab Task Opp\labtask-8>
```

QNS-2:

Code:

```
#include<iostream>
using namespace std;
class matrix{
  public:
  int mat[2][2];
  matrix(int a, int b, int c, int d){
    mat[0][0] = a;
    mat[0][1] = b;
    mat[1][0] = c;
    mat[1][1] = d;
  };

  matrix operator+(matrix m){
    matrix temp(0, 0, 0, 0);
    for (int i=0;i<2;i++){
      for (int j=0;j<2;j++){
        temp.mat[i][j] = mat[i][j] + m.mat[i][j];
      }
    }
    return temp;
  }

  matrix operator*(matrix m){
    matrix temp(0, 0, 0, 0);
    for (int i=0;i<2;i++){
      for (int j=0;j<2;j++){
          temp.mat[i][j] = mat[i][j] * m.mat[i][j];
```

```
        }
      }
      return temp;
   }

   bool operator==(matrix m){
      for (int i=0;i<2;i++){
         for (int j=0;j<2;j++){
            if (mat[i][j] != m.mat[i][j]){
               return false;
            }
         }
      }
      return true;
   }


};

int main(){
   matrix m1(1, 2, 3, 4);
   matrix m2(1, 2, 3, 4);
   matrix m3 = m1 + m2;
   matrix m4 = m1 * m2;
   bool m5 = m1 == m2;
   cout<<"Sum of Matrix 1 and Matrix 2: "<<endl;
   for (int i=0;i<2;i++){
      for (int j=0;j<2;j++){
         cout<<m3.mat[i][j]<<" ";
```

```
    }
  }
  cout<<endl;
  cout<<"Product of Matrix 1 and Matrix 2: "<<endl;
  for (int i=0;i<2;i++){
    for (int j=0;j<2;j++){
      cout<<m4.mat[i][j]<<" ";
    }
  }
  cout<<endl;
  cout<<"Matrix 1 and Matrix 2 are equal: "<<endl;
  if (m5){
    cout<<"Yes Equal"<<endl;
  }

  else{
    cout<<"Not Equal"<<endl;
  }
  return 0;
}
```

Output:

```
PS C:\Users\Azan Noor\OneDrive\Desktop\Lab Task Opp\labtask-8> g++ -g qns2.cpp -o ./o
utput.exe
PS C:\Users\Azan Noor\OneDrive\Desktop\Lab Task Opp\labtask-8> ./output
Sum of Matrix 1 and Matrix 2:
2 4 6 8
Product of Matrix 1 and Matrix 2:
1 4 9 16
Matrix 1 and Matrix 2 are equal:
Yes Equal
PS C:\Users\Azan Noor\OneDrive\Desktop\Lab Task Opp\labtask-8>
```