Objectives:

1. To know the basic structure of object-oriented programming language.
2. To know more about class and objects.
3. To find the errors in the program.
4. To learn about the types of access specifier.
5. To learn about the types of member functions.

Code:

All the codes have been compiled in DevC++

Task 1:

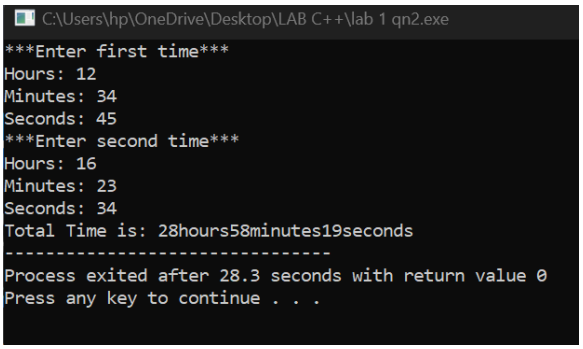
```
#include<iostream>
using namespace std;
int main(){
int hour1,minute1,second1;
int hour2,minute2,second2;
int hour,minute,second;

cout<<"***Enter first time***"<<endl;
cout<<"Hours: ";
cin>>hour1;
cout<<"Minutes: ";
cin>>minute1;
cout<<"Seconds: ";
cin>>second1;

cout<<"***Enter second time***"<<endl;
cout<<"Hours: ";
cin>>hour2;
cout<<"Minutes: ";
cin>>minute2;
cout<<"Seconds: ";
cin>>second2;
second=second1+second2;

minute=minute1+minute2+(second/60);
hour=hour1+hour2+(minute/60);
minute=minute%60;
second=second%60;
cout<<"Total Time "<<hour<<"hours"<<minute<<"minutes" <<second<<"seconds";
}
```

1. Include the iostream header to use its functions.
2. Include the std namespace in the code to use the classes without calling it.
3. Declare the required variables i.e., hour1, minute1, second1, hour2, minute2, second2, hour, minute, second.
4. Call the main() function. The program logic should be added within its body.

Errors:

- Line 2- The word 'namesquace' should be replaced with suitable keyword i.e., namespace.
- Line 4- Use of . (dot) instead of , (comma).
- Line 5- The variable hour.2 should be replaced with hour2.
- Line 6- Use of float variable instead of int. The : (colon) should be replaced with ; (semicolon).
- Line 7- End1 was used instead of Endl
- Line 14- Use of >> instead of << with the keyword cout.
- Line 19- There should be cout<< instead of count<. Also, the variable second3 should be replaced with the declared variable i.e., second2.

Output:



Task 2:

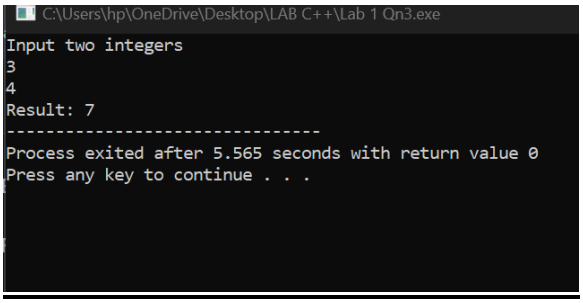
```
#include<iostream>
using namespace std;
class Mathematics{
        int x,y;
        public:
                void input();
                void add();
};
void Mathematics::input(){
                        cout<<"Input       two
integers\n";
                        cin>>x>>y;
                }

void Mathematics::add(){
                        cout<<"Result:
"<<x+y;
                }
int main(){
        Mathematics m;
        m.input();
        m.add();
        return 0;
}
```

1. Include the iostream header file to use its functions.
2. Include the std namespace in the code to use its class without calling it.
3. Declare a class Mathematics.
4. Declare variables x and y.
5. Using the public access modifier to make the variables publicly accessible.
6. Declare the member functions input() and add() inside the class.
7. Write the code for the member functions input and add separately.
8. Call the main function. The program logic should be added within its body.
9. Create an object name m of type math. This is called instantiation.
10. Access the member function using the object m.

Errors:

There is no error in the code.

Output:



Task 3:

```
#include<iostream>
using namespace std;
class simp{
        int p,t,r,si;
        public:
                void read(){
                cout<<"enter
principle,time,rate";
                cin>>p>>t>>r;
                };
                void cal(){
                        si=p*t*r/100;
                };
                void print(){
```

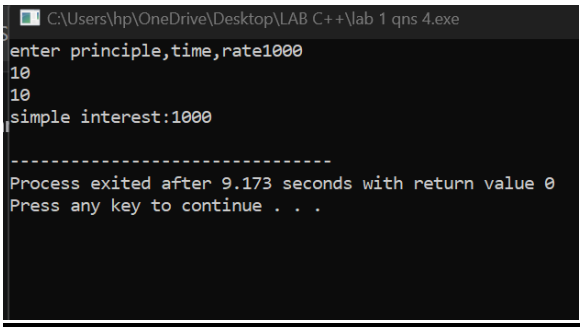
```
                    cout<<"simple
interest:"<<si<<endl;
                };

};
int main(){
        simp e;
        e.read();
        e.cal();
        e.print();
}
```

1. Include the iostream header files in our code to use its functions.
2. Include the std namespace to use its classes without calling it.
3. Declare a class name simp.
4. Declare the variables p, t, r and si.
5. Use the public access modifier to mark the variables so they are publicly accessible.
6. Declare the member functions i.e., read(), cal() and print() in this case, with the appropriate code within the member functions.
7. Call the main() function and add the logic within its body.
8. Create an object (e in this case).
9. Call the required member function using the object e in the main() function

Errors:

The error is code free.

Output:



Discussion and Conclusion:

Through this lab work, we were able to learn about the basic structure of object-oriented programming language (C++). We also were able to learn about classes, objects and member functions. Not only that, we also learnt about the types of classes i.e., according to the member functions. We also learnt the use of (::) scope resolution operator for declaring the member functions outside the class. We also were able to not only find a lots of errors in some codes but also able to solve the errors. We also learnt about creating an object and how to implement it in the main() function to call the member functions. We have also become much familiar with many keywords like cout<<, cin>>, class, namespace, etc. Above all, we were able to learn the very basic structure to write any program in object-oriented programming language.