



**Sir Syed CASE
Institute of Technology**

OOP Lab #8 Inheritance

SUBMITTED BY:

UBAID AHMAD

ROLL NO:

2410-0011

SUBMITTED TO:

Ma'am Laiba Tanveer

DATE:

02/12/2025

Task 1

Code:

```
#include <iostream>
using namespace std;
class staff{
public:
    int staffID;
    staff(int x){
        staffID=x;
    }
    int getstaffID(){
        return staffID;
    }
};

class professor:public staff{
    string depName;
    int depID;
public:
    professor(string s,int x,int y) :staff(y){
        depName=s;
        depID=x;
        staffID=y;
    }
    string getDepName(){
```

```
        return depName;  
    }  
  
    int getDepID(){  
        return depID;  
    }  
  
};  
  
class visitingProfessor:public professor{  
  
    int courses;  
  
    float salary_per_course;  
  
    float total_salary;  
  
    public:  
  
        visitingProfessor(int c,float s,string n,int dID,int  
stffID):professor(n,dID,stffID){  
  
            courses=c;  
  
            salary_per_course=s;  
        }  
  
        void totalSalary(){  
            total_salary=courses*salary_per_course;  
        }  
  
        void displaySalary(){  
            cout<<"total salary is: "<<total_salary<<endl;  
        }  
};  
  
int main(){
```

```
visitingProfessor p(5,10000.00,"ubaid",11,1210);
p.totalSalary();
p.displaySalary();
return 0;
}
```

```
D:\4th semesteer data\OOP\lab 8 inheretence\multiLevellInheretence.exe
total salary is: 50000
-----
Process exited after 2.304 seconds with return value 0
Press any key to continue . . .
```

Task 2

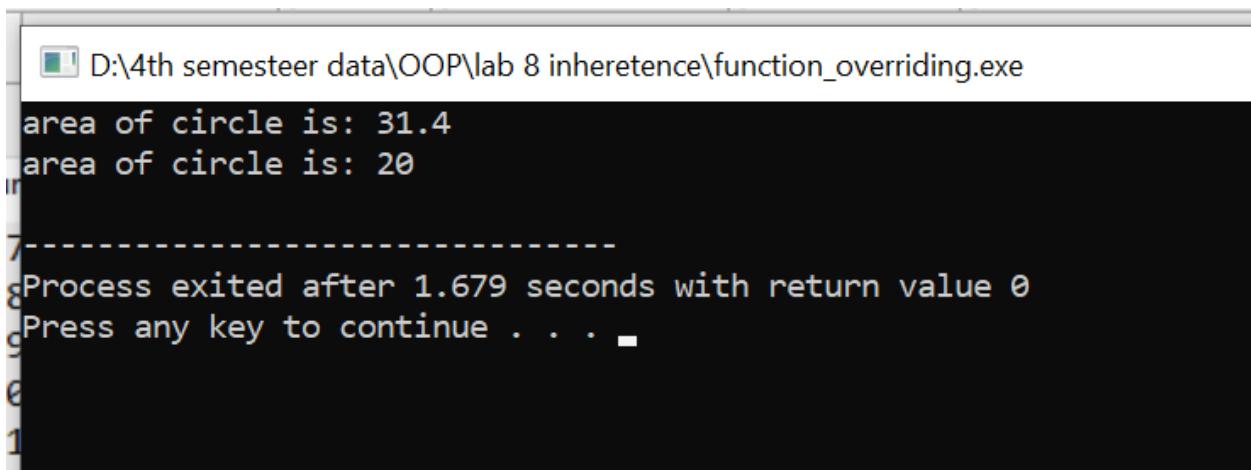
CODE:

```
#include <iostream>
using namespace std;
class shape{
    void calculateArea(){
    };
    void displayArea(){
    };
};
```

```
class circle:public shape{
    int radius;
    double area;
    public:
        circle(int r){
            radius=r;
        }
        void calculateArea(){
            area=2*radius*(3.14);
        }
        void displayArea(){
            cout<<"area of circle is: "<<area<<endl;
        }
};

class rectangle:public shape{
    int length;
    int width;
    double area;
    public:
        rectangle(int l,int w){
            length=l;
            width=w;
        }
        void calculateArea(){
```

```
area=length*width;  
}  
  
void displayArea(){  
    cout<<"area of circle is: "<<area<<endl;  
}  
};  
  
int main(){  
    circle c(5); //radius=5  
    rectangle r(4,5); //length=4,width=5  
    c.calculateArea();  
    r.calculateArea();  
    c.displayArea();  
    r.displayArea();  
  
    return 0;  
}
```



```
D:\4th semesteer data\OOP\lab 8 inheretence\function_overriding.exe  
area of circle is: 31.4  
area of circle is: 20  
-----  
Process exited after 1.679 seconds with return value 0  
Press any key to continue . . .
```

Task 3

CODE:

```
#include <iostream>
using namespace std;
class ride{
public:
};
class CarRide:public ride{
public:
    void startRide(){
        cout<<"starting Car....."<<endl;
    }
    void endRide(){
        cout<<"stoping the car!"<<endl;
    }
};
class BikeRide:public ride{
    bool helmet_verification;
public:
    void startRide(){
        cout<<"starting Bike....."<<endl;
    }
    void checkHelmet(){
        int x;
        cout<<"if driver is wearing helmet enter : 1 ,Else enter :0 ";
    }
};
```

```
    cin>>x;
    helmet_verification=x;
}

void endRide(){
    if(helmet_verification){
        cout<<"ok stop the bike"<<endl;
    }
    else{
        cout<<"wait! wear helmet first"<<endl;
    }
}

};

int main(){
    BikeRide b;
    b.startRide();
    b.checkHelmet();
    b.endRide();

    CarRide c;
    c.startRide();
    c.endRide();
    return 0;
}
```

```
D:\4th semesteer data\OOP\lab 8 inheretence\fun_overriding-2.exe
starting Bike.....
if driver is wearing helmet enter : 1 ,,Else enter :0  1
ok stop the bike
starting Car.....
stoping the car!
-----
Process exited after 4.78 seconds with return value 0
Press any key to continue . . .
```

END: