

LAB - 12

virtual function

Create Father class and Son class Son from that Father class. Has same member function activity. Father activity is go to office. Student Task is go to School.

1. Wap to display the only Son task without display the father activity by using virtual function.
2. Wap to display only Father activity without display son activity using virtual function.
3. Wap to display Both father and son activity by using virtual function.

```
Q1. #include <iostream>
using namespace std;
class Father
{
public:
    virtual void
    Activity()
    {
        cout << "Activity Father : Go to Office" <<
        endl;
    }
}
class Son : public Father
{
public:
    void
    Activity()
    {
        cout << "Activity Son class : Go to School" << endl;
    }
}
int main()
{
    Father *bptr;
    Son d;
    bptr = &d;
    bptr->Activity();
}
```

Activity Son class : Go to School

- Q2. Wap to display only Father activity without display son activity using virtual function.

```
#include <iostream>
using namespace std;
class Father
{
public:
    virtual void
    Activity()
    {
        cout << "Activity Father : Go to Office" <<
        endl;
    }
}
class Son : public Father
{
public:
    void
    Activity()
    {
        cout << "Activity Son class : Go to School" << endl;
    }
}
int main()
{
    Father *bptr, d;
    bptr = &d; bptr-
    >Activity();
}
```

Activity Father : Go to Office

- Q3. Wap to display Both father and son activity by using virtual function.

```

#include <iostream>
using namespace std;
class Father
{
public:
    virtual void
    Activity() {
        cout << "Activity Father : Go to Office" <<
        endl; }
}
class Son : public Father
{
public:
    void
    Activity() {
        cout << "Activity Son class : Go to School" << endl;
    }
}
int main()
{
    Father *bptr, *bptr2, d2;
    Son d1;
    bptr = &d1;
    bptr2 = &d2;
    bptr->Activity(); bptr2-
    >Activity();
}

```

```

Activity Son class : Go to School
Activity Father : Go to Office

```

- Q4. Wap to create Shape class. It has two data member function. area() and display(). Area is dummy function. And Display only working. And derived another class Circle. Which also two member function area() display(). By using abstract class display area of circle and as well as display function of Base class.

```

#include <iostream>
#include <math>
#define _USE_MATH_DEFINES
using namespace std; class
Shape
{
public:
    double r;
    void get_data()
    {
        cin >> r;
    }
    virtual void display_area() = 0;
}
class Circle : public Shape
{
public:
    void
    display_area() {
        cout << "Area of Circle " << M_PI * r * r << endl;
    }
}
int main()
{
    Circle t1;
    Shape *s1 = &t1;
    cout << "Enter Radius of Circle: ";
    s1->get_data();
    s1->display_area();
}

```

```

Enter Radius of Circle: 14
Area of Circle 615.752

```