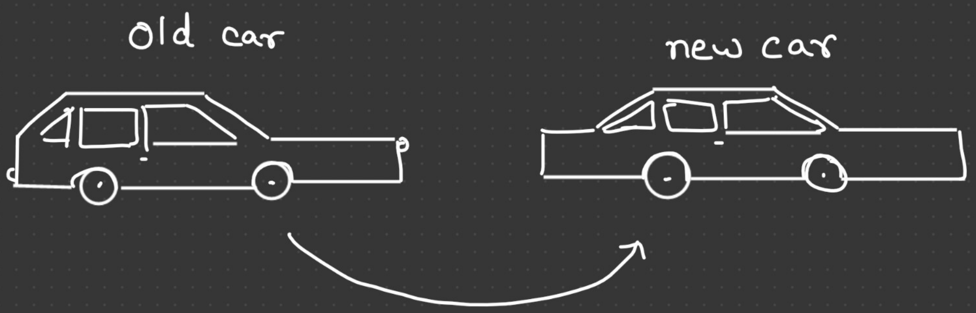
Inheritance

One of the main goal of oop's is to provide reusable code.

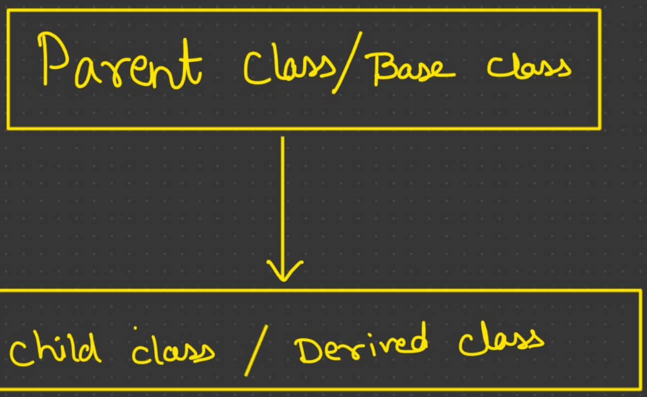


+ engine ↑
+ design ↑
+ new features ↑

+ old functionality

```
Class Calculator
{
      add()
      {

      }
      sub()
      {

      }

};
```

```
Class NewCalculator
{

      add() ✓
      sub() ✓
      mult() +
      divide() +

};
```

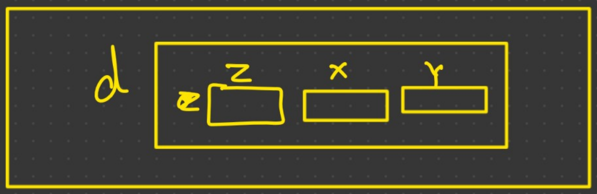

Parent Class/Base class

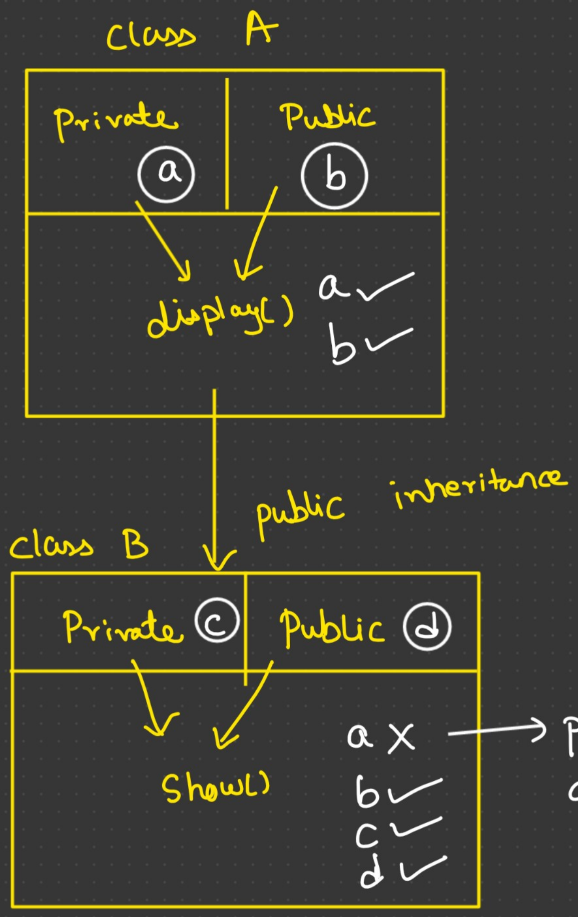
Child class / Derived class

```
class   A                          Class B : public A
{                                  {
    ____                                ____
    ____                                ____
    ____                                ____
    ____                                ____
                                          +
};                                       New

                                    };
```

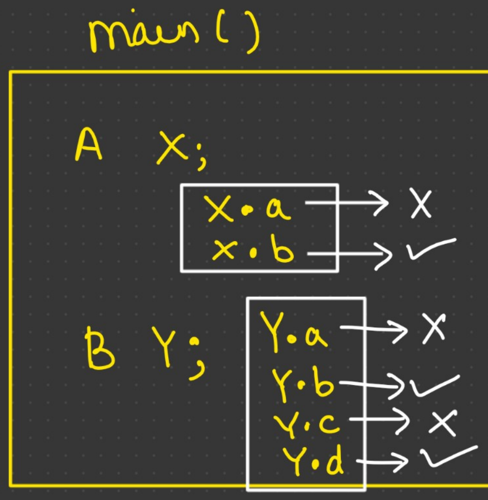
```
Class ABC                          Class  DEF : Public ABC
                                   {
{                                      public :
   public :                                    int z;
         int x, y;

 };                                 };
```

```
int main ()
{
   DEF d;


};
```





private member are not accible Outside the class.



```
Class Parent
{
   public :
        int x, y;

        void display()
        {
          cout<<x<<y;
          }

 };
```

```
Class Child : public Parent
{
    pubuc :
           int z;

        void display()
        {
         cout<<x<<y<<z;
         }

 };
```

```
int main()
{
    Parent a;
    Child  b;

    Parent *p = &a;      }
      p->display();      } ① ⟶ parent class display() called

     Child *c = &b;         }
        c -> display();     } ② ⟶ Child class display() called.
```

```
Parent *p1 = &y;  //1. parent class pointer can point to child class object
p1->display();    //2. Function of pointer type will be called

Child *c1 = &x;  // It is an error Child class pointer cannot point to parent class object
 c1->display();   // error
```

7:30 pm – 10:30pm

Extra class

Tuesday Thursday TT

Wed