Abstract Class

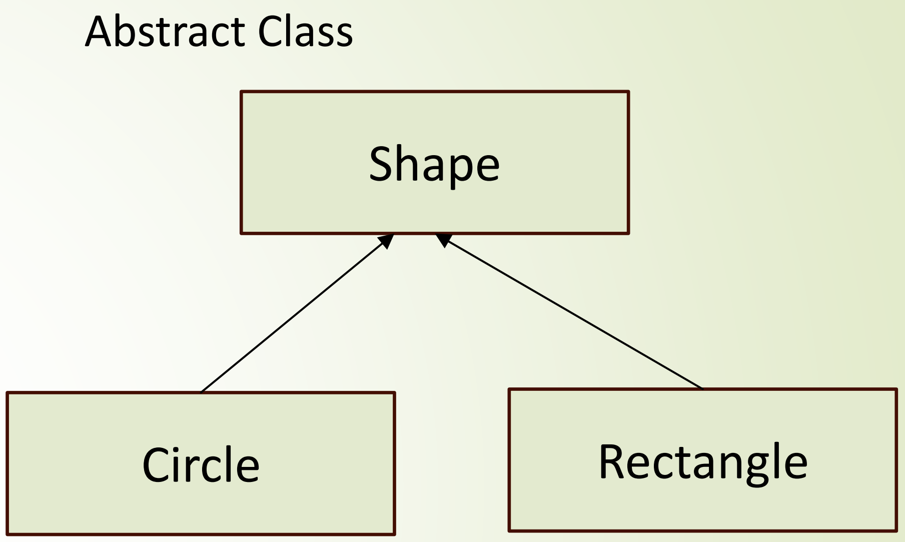
Abstract Methods and Abstract Class

- A method that is declared without an implementation.
- A class that contains abstract methods is called abstract class.
- Object of abstract class can not be created.

```
abstract void fun(int);


abstract class A{
      abstract void fun();
      void run(){SOP("Hi");}
}
```

- When an abstract class is sub-classed, the subclass usually provides implementation for all the methods.
- Else, it must be declared as abstract.
- It is possible to create reference of an abstract class and equate with an object of a concrete class.
- It is not possible to create an object of an abstract class.



Shape s=new Shape(); (Not allowed)

Circle c=new Circle() (Allowed)

Shape s=new Circle() (?)

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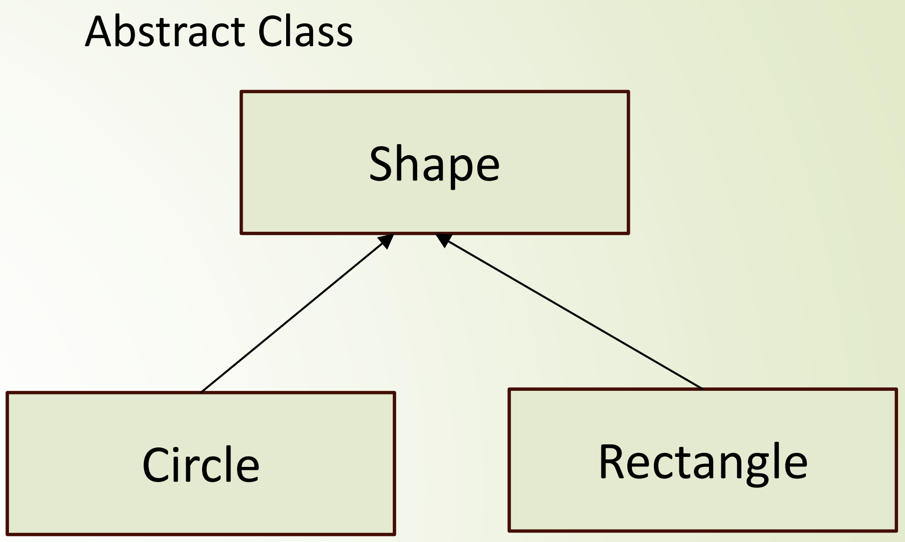

- Shape s=new Shape(); (Not allowed)
- Circle c=new Circle() (Allowed)
- Shape s=new Circle() (Allowed, demonstrated Runtime Polymorphism)

Some Information

- Abstract modifier is applicable to classes and methods only.
- We can have an abstract class without having any abstract methods.
  - This allows us to create classes that can not be instantiated but only be inherited.
- Abstract classes can have final and static methods.
- Final methods can not be abstract.