

Abstract Class

A class derived from **ABC** class which belongs to *abc* module, is known as abstract class in Python.

ABC Class is known as Meta Class which means a class that defines the behavior of other classes. So we can say, Meta Class ABC defines that the class which is derived from it becomes an abstract class.

Abstract Class can have abstract method and concrete methods.

Abstract Class needs to be extended and its method implemented.

PVM can not create objects of an abstract class.

Ex:-

```
from abc import ABC, abstractmethod
```

```
Class Father(ABC):
```

Abstract Method

A abstract method is a method whose action is redefined in the child classes as per the requirement of the object.

We can declare a method as abstract method by using `@abstractmethod` decorator.

Ex:-

```
from abc import ABC, abstractmethod
```

```
Class Father(ABC):
```

```
    @abstractmethod
```

```
    def disp(self):
```

```
        pass
```

Concrete Method

A Concrete method is a method whose action is defined in the abstract class itself.

Ex:-

```
from abc import ABC, abstractmethod
```

```
Class Father(ABC):
```

```
    @abstractmethod
```

```
    def disp(self):
```

```
        pass
```

```
    def show(self):
```

```
        print("Concrete Method")
```



Abstract Method / Method Without Body

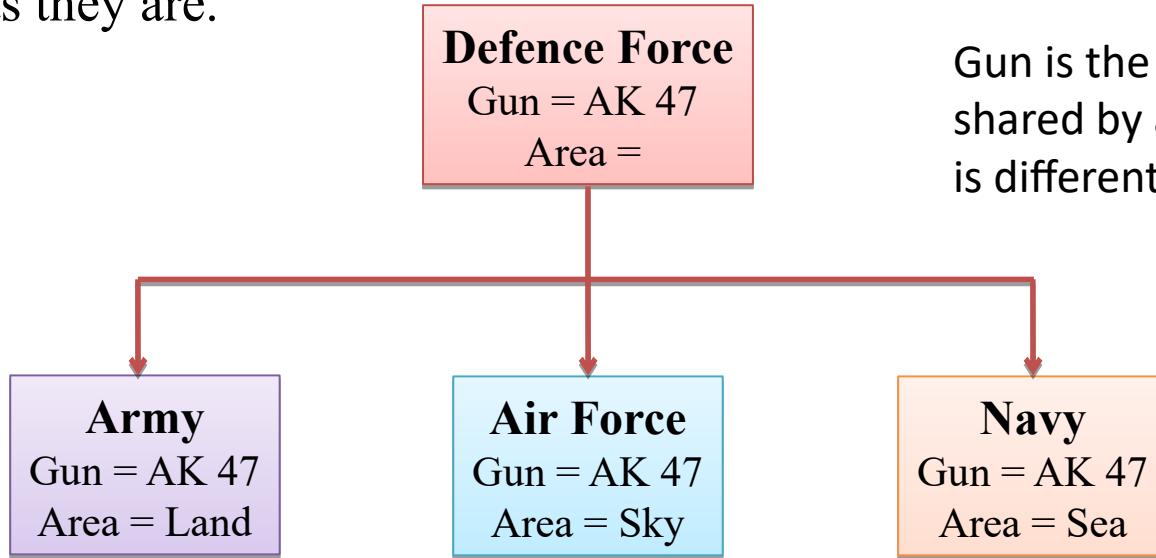
Concrete Method / Method with Body

Rules:

- JVM can not create objects of an abstract class.
- It is not necessary to declare all methods abstract in a abstract class.
- Abstract Class can have abstract method and concrete methods.
- If there is any abstract method in a class, that class must be abstract.
- The abstract methods of an abstract class must be defined in its child class/subclass.
- If you are inheriting any abstract class that have abstract method, you must either provide the implementation of the method or make this class abstract.

When use Abstract Class

We use abstract class when there are some common feature shared by all the objects as they are.



Gun is the common feature shared by all Forces but area is different for them.