"abstract" Keyword

The abstract keyword is used to achieve abstraction in Java.

Syntax:

> *abstract class Class_name*
>
> *{*
>
> *abstract type method_name();*
>
> *}*

Rules with the abstract keyword

- An abstract keyword cannot be used with variables and constructors. Only with classes and methods.
- abstract classes cannot be instantiated (cannot create objects).
- Any class that contains one or more abstract method must also be declared as abstract.
- No method body is present with the abstract methods.
- abstract keyword cannot be used with the "final" or "private" or "static" keywords.
- Any sub class of an abstract class must either implement all of the abstract methods in the super class or be itself declared as abstract.
- Abstract class can be declared without any abstract methods. This is basically to avoid the object creation of the class.

Exercise 01:

```java
1    abstract class A
2    {
3        abstract void method();
4
5        void print()
6        {
7            System.out.println("Hi");
8        }
9    }
10
11   abstract class B extends A
12   {
13       void Hello()
14       {
15           System.out.println("Hello");
16       }
17   }
18
19   class C extends B
20   {
21       void method()
22       {
23           System.out.println("Impelmented the abstract method");
24       }
25   }
26   class AbstractClasses
27   {
28       public static void main(String args[])
29       {
30           //A ob1=new A() //error
31           C ob2=new C();
32           ob2.method();
33       }
34   }
```

Exercise 02:

```
1    abstract class A
2    {
3        void print()
4        {
5            System.out.println("Hi");
6        }
7    }
8    class B extends A
9    {
10       void Hello()
11       {
12           System.out.println("Hello");
13       }
14   }
15   class AbstractClasses2
16   {
17       public static void main(String args[])
18       {
19           //A ob1=new A(); //error
20           B ob2=new B();
21       }
22   }
```