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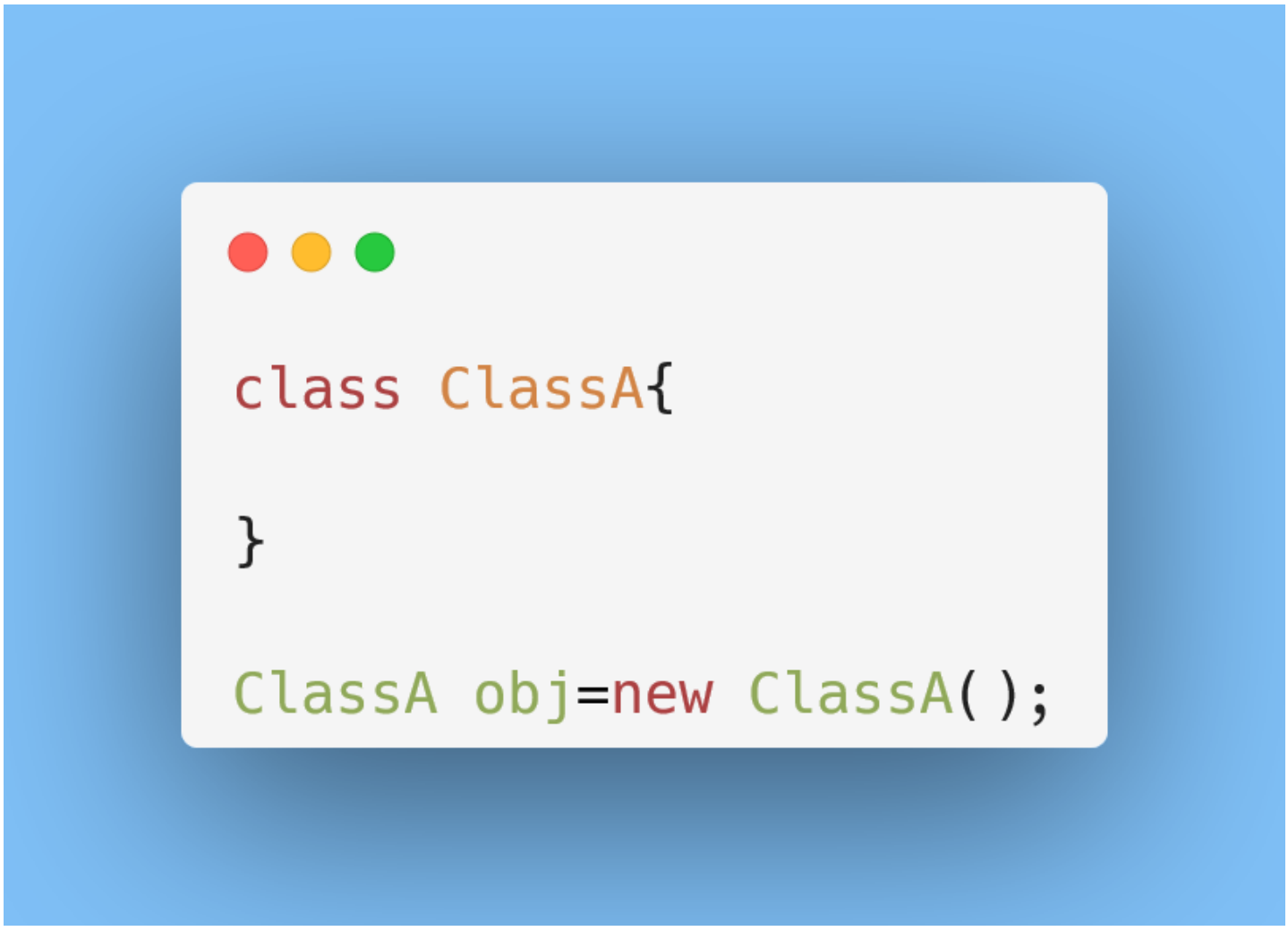
Five Different Ways to Create Objects in Java

a thread...

1. Using a new keyword.

It's the most popular one. We create an object by using a new operator followed by a constructor call.

Eg:



2. Using the newInstance() method of class "Class":

Eg:

```
class ClassA{

}

ClassA obj = ClassA.class.newInstance();
```

3■. Using the newInstance() method in class "Constructor":

Eg:

```
class ClassA{

}

Constructor<ClassA> obj =
  ClassA.class.getConstructor().newInstance();
```

Note:

Both the above ways (Shown in 2 and 3),

are known as reflective ways of creating objects.

Fun-fact:

Class's newInstance() method internally uses Constructor's newInstance() method.

4■. Using "Object" class clone() method

The clone() method creates a copy of an existing object.

The clone() method is part of the "Object" class which returns a clone object.

Eg:

```
public class ClassA implements Cloneable {
  protected Object clone() throws CloneNotSupportedException {
    //...
  }
}

ClassA obj1 = new ClassA();
ClassA obj2 = (ClassA) obj1.clone();
```

When using the clone() method:

Always Remember,

1. The "Cloneable" interface is implemented.
2. The clone() method must be overridden with other classes.
3. Inside the clone() method, the class must call super.clone().

5■. Using Deserialization:

When we deserialize any object then JVM creates a new object internally.

For this, we need to implement the Serializable interface.

Eg:

```java
public class ClassA implements Serializable {
    //...
}

//  Serialization
ClassA classA;
try (ObjectOutputStream out = new ObjectOutputStream(
  new FileOutputStream("classA.obj"))) {
    out.writeObject(classA);
}

//  Deserialization
ClassA deserialClassA;
try (ObjectInputStream in = new ObjectInputStream(
  new FileInputStream("classA.obj"))) {
    deserialClassA = (ClassA) in.readObject();
}

// deserialClassA Object will be created after de-
serialization process
```

Conclusion:

We've seen all five ways to create Objects in Java:

1. Using a new keyword.
2. Using Class.newInstance() method
3■. Using Constructor.newInstance() method
4■. Using Object.clone() method
5■. Using Deserialization

Thanks for reading!