# Static and Final

TestLeaf

Welcome to

## TestLeaf

# Agenda - What We'll Cover Today

▶ What is static keyword

▶ Unique feature about static

▶ Few example about static usage in real time

# Static

Are you ready to
**Get going?**

When a variable is declared with the keyword "**static**", its called a "class variable". All instances share the same copy of the variable. A class variable can be accessed directly with the class, without the need to create a instance

*Use this font color to pin point something important*

- Static can be used in method e.g. public static void method() { ..  }

- Static can be used to declare variable e.g. static String name ="Hi";

# Static keyword applicable

Analogy
Static Member Variables

ObjectA of Class
Variable1
Variable2

share

Static Variable / Functions

ObjectB of Class
Variable1
Variable2
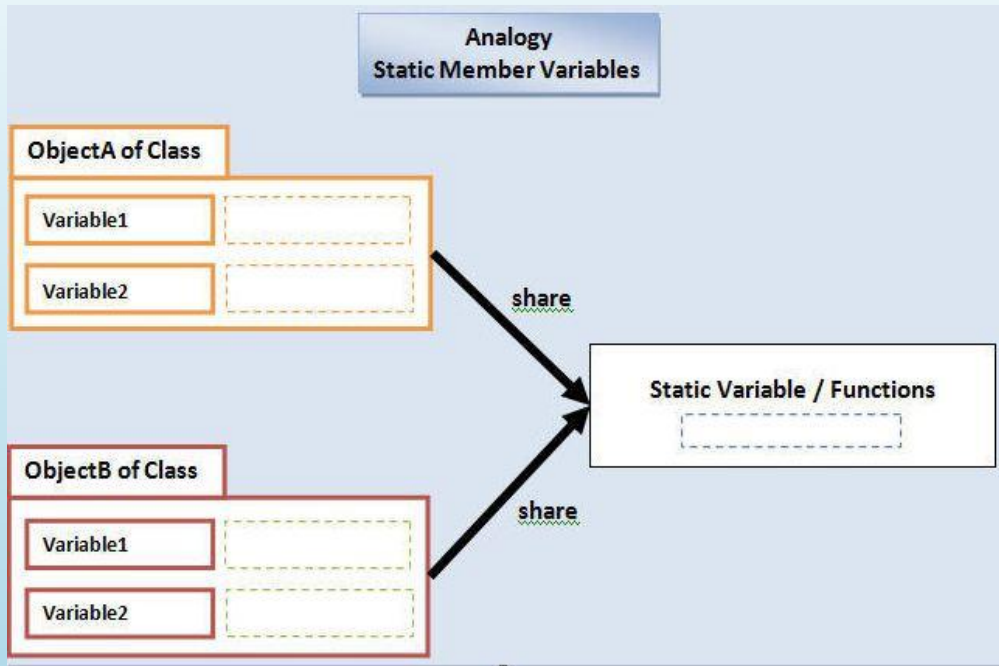
share

Java *static property is shared to all objects*

We can apply java static keyword with variables, methods, blocks and nested class

```java
public class CrunchifyStaticDeclaration {

    // 1st static block
    static {
        System.out.println("\nI'm static block 1..");
        setTestString("This is static block's String");
        setTestValue(2);
    }

    // 2nd static blocks in same class
    static {
        System.out.println("\nI'm static block 2..");
    }

    // static variable example
    private static int testValue; // kept private to control it's value through setter

    public int getTestValue() {
        return testValue;
    }

    // static method example
    public static void setTestValue(int testValue) {
        if (testValue > 0)
            CrunchifyStaticDeclaration.testValue = testValue;
        System.out.println("setTestValue method: " + testValue);
    }
}
```

*Where ever static is applicable*

# Quiz

Are you ready to
**Get going?**

1.  what is static in java?
2.  Why we use static keyword in java?
3.  What is static variable in java?
4.  what is static method in java with example
5.  what is static block in java?
6.  What is the need of static block?
7.  Why main method is static in java?
8.  Can we overload static methods in java?
9.  Can we override static methods in java?
10. Can we write static public void main(String [] args)?

Question related to static

# Final keyword in java

Are you ready to
**Get going?**
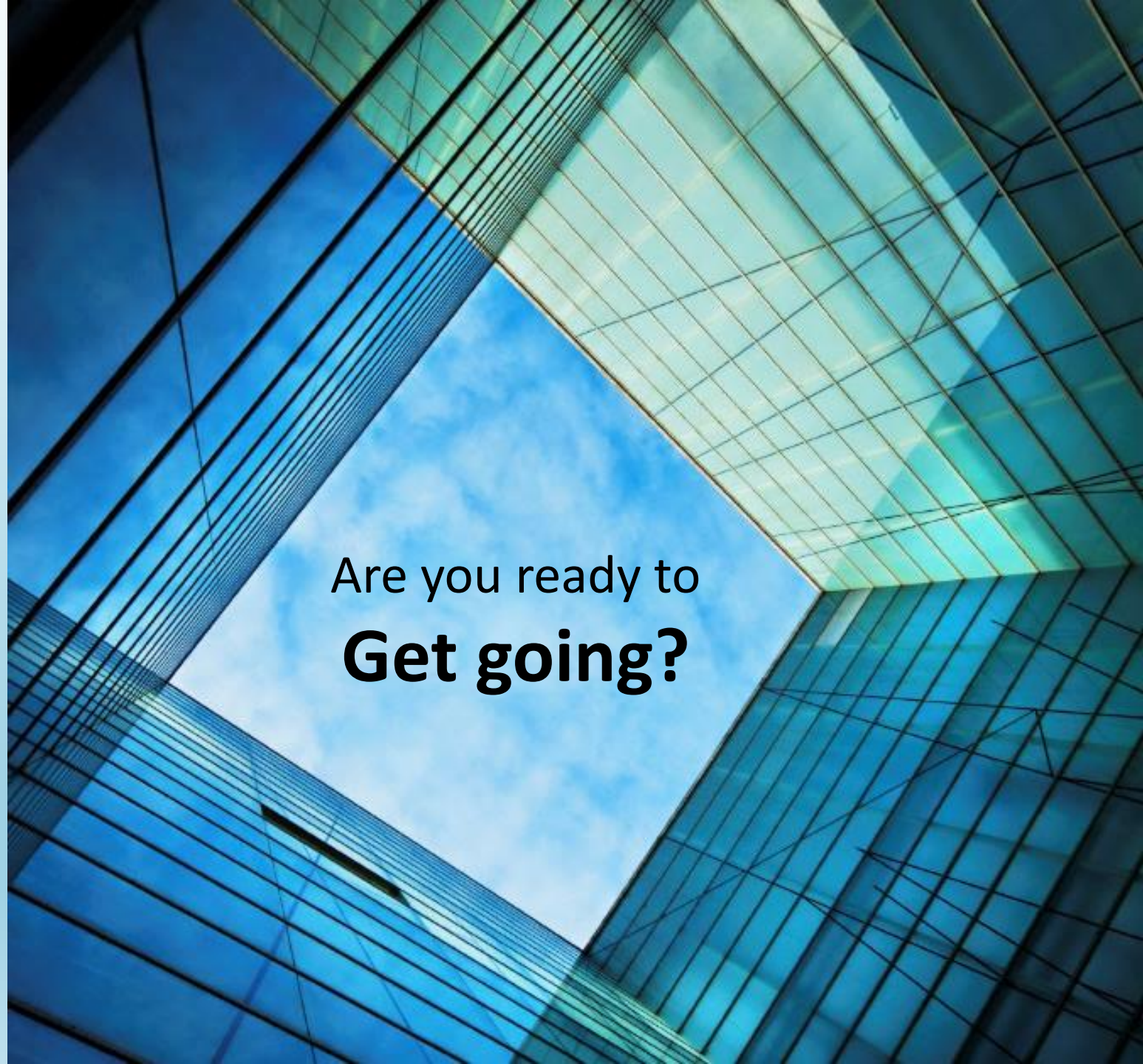
*Once a final variable has been assigned, it always contains the same value.*

**Example :**

Can we change our spouse name or marital status ?

Can we allow anyone to override / change PAN number

*Few* example *about Final*

**Final Keyword**

* Restrict changing value of variable

* Restrict method overriding

* Restrict inheritance

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*Final Class*

❌ extend

*Class*

**final**

- final keyword is used declare **constants** which can not change its **value** of **definition**.

- **final Variables** can not change its value.

- **final Methods** can not be Overridden or Over Loaded

- **final Classes** can not be extended or inherited

- Final can be used in class e.g public final class myClass { … }

- Final can be used in method e.g. public final void myMethod() { ..  }

- Final can be used to declare variable e.g. final String name ="Test";

# Final keyword applicable

| Static | Final |
|---|---|
| Applicable to method and variable | Applicable to class, method and variable |
| It always holds last updated values | Values can't be update / override |
| Static block are available and used to load before the object creation / constructor invoke | There is no concept called final block in java |
| No need of instance / object to call method and variable | There is object / instance required to call method or variable |
| Variables can be initialized anywhere in the class | Variables can be initialized only in constructors |

# Difference between Static and Final

# Quiz

Are you ready to
**Get going?**

1. What is the use of final keyword in java?
2. What is the blank final field?
3. What is the use of final class?
4. Where all we can initialize a final non-static global variable if it is not initialized at the time of declaration?
5. What are final class, final method and final variable?
6. Can we declare constructors as final?

Question related to static

# Recap

Are you ready to
**Get going?**

- Static

  ✓ Static keyword can be used only in methods and variable NOT for Classes
  ✓ Object is not needed to call static methods and variables
  ✓ Static block will be invoked even before the constructors and normal methods
  ✓ Static variables can be override but methods can't be override
  ✓ Static always refer last updated values

- Final

  ✓ Final keyword can be used in methods, variable and for Classes also
  ✓ Final methods , variables can't be override
  ✓ There is no empty final block like static block
  ✓ Object is needed to invoke final method and variables

# Summary

# Q&A

# Thank you

Hope you had a
**Great Learning!**