- The **super** keyword is used for differentiating the base class features with derived class features.
- The **super** keyword in java is like a reference variable that is used to refer to parent class objects.
- The **super** keyword is used with the concept of inheritance.

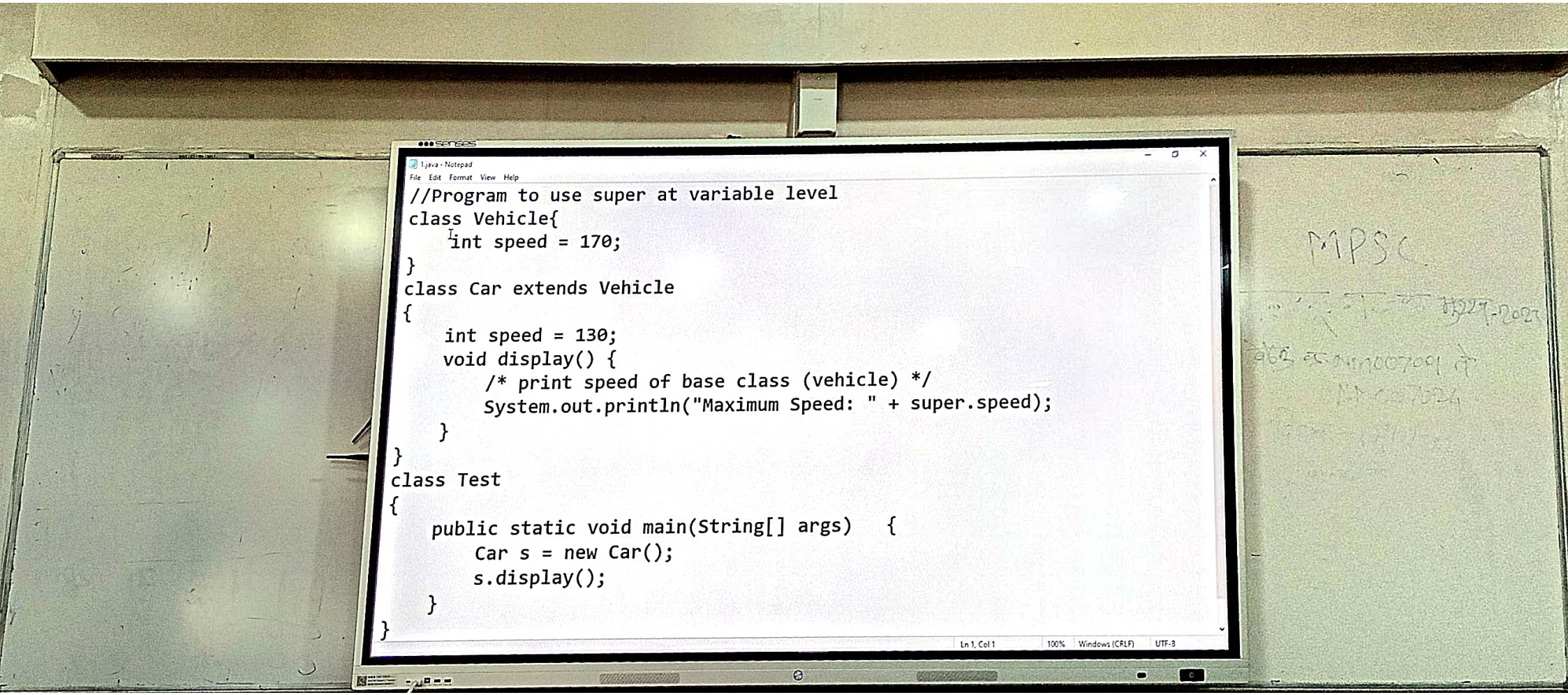
**super is used in the following:**

- **super** at variable level
- **super** at method level
- **super** at constructor level

## super at variable level

- When a derived class and base class has same data members.
- In that case there is a possibility of ambiguity for the JVM in that case we use super with variables.

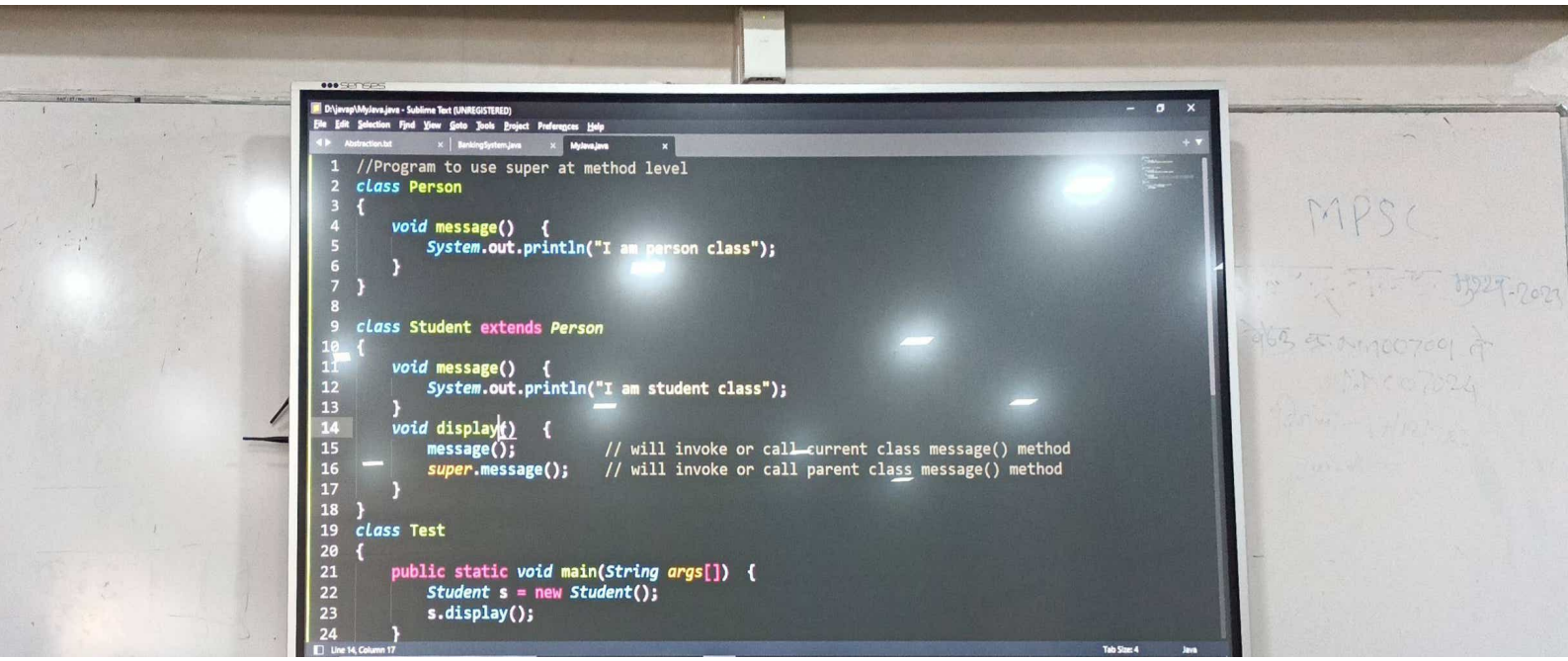
**Ex**


1.java - Notepad
File Edit Format View Help
//Program to use super at variable level
class Vehicle{
int speed = 170;
}
class Car extends Vehicle
{
int speed = 130;
void display() {
/* print speed of base class (vehicle) */
System.out.println("Maximum Speed: " + super.speed);
}
}
class Test
{
public static void main(String[] args) {
Car s = new Car();
s.display();
}
}
Ln 1, Col 1
100%
Windows (CRLF)
UTF-8

## super at method level

- When we want to call parent class method in child class and whenever a parent class and child class have same named methods then to resolve this ambiguity we use super keyword.

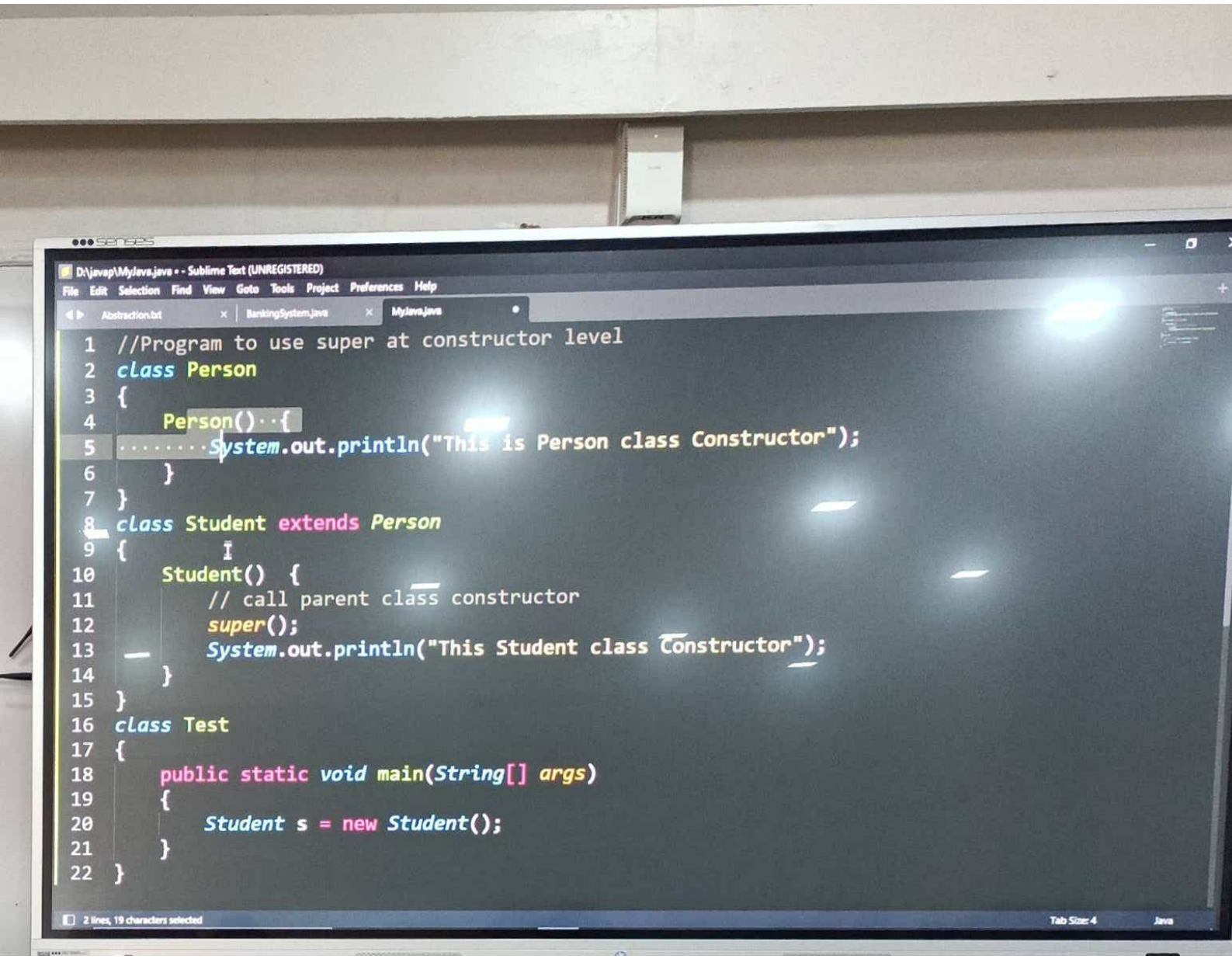
**Ex**

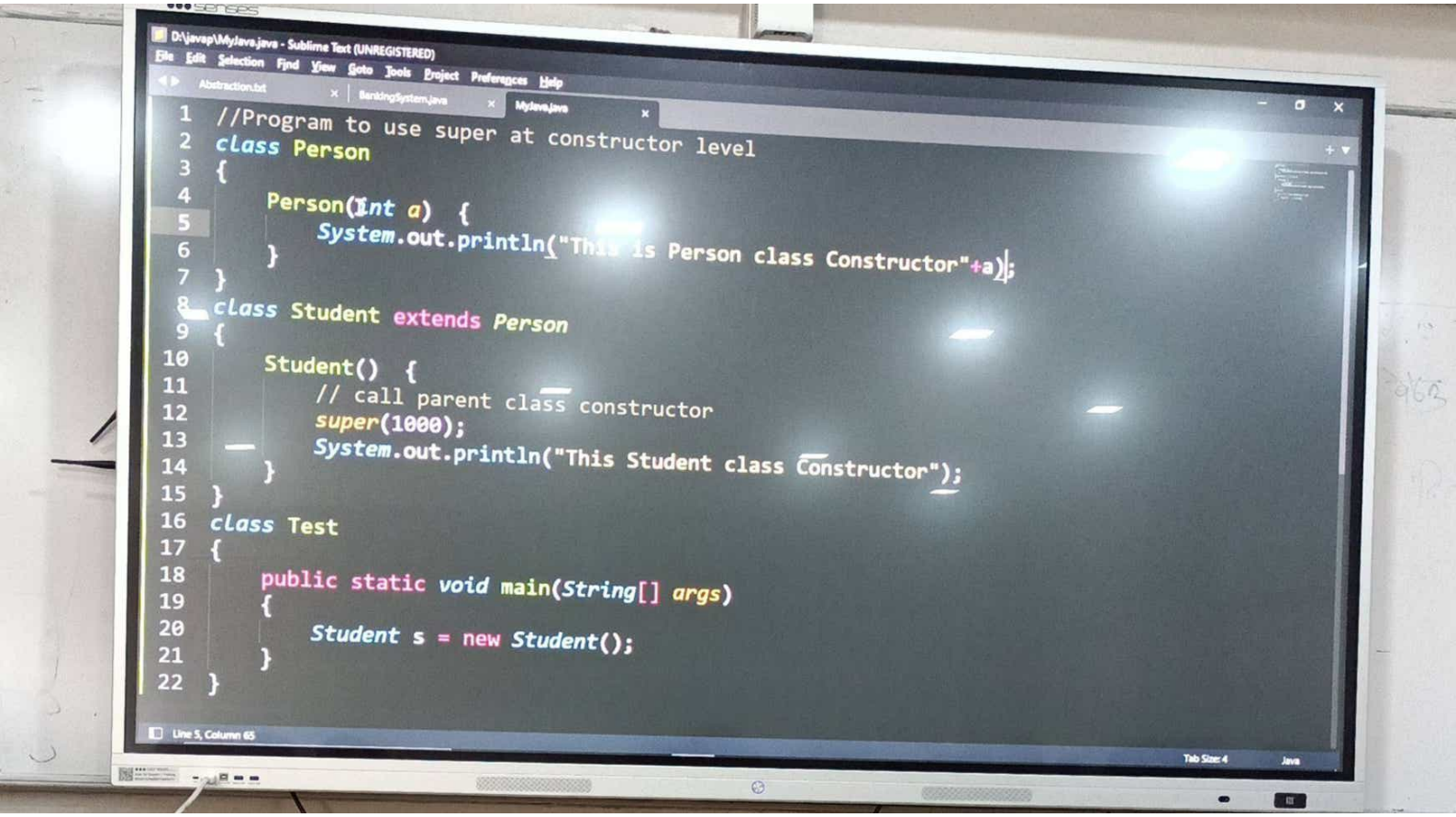

D:\javap\Mydava.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
Abstraction.txt
BankingSystem.java
Mydava.java
1 //Program to use super at method level
2 class Person
3 {
4 void message() {
5 System.out.println("I am person class");
6 }
7 }
8
9 class Student extends Person
10 {
11 void message() {
12 System.out.println("I am student class");
13 }
14 void display() {
15 message(); // will invoke or call current class message() method
16 super.message(); // will invoke or call parent class message() method
17 }
18 }
19 class Test
20 {
21 public static void main(String args[]) {
22 Student s = new Student();
23 s.display();
24 }
Line 14, Column 17
Tab Size: 4
Java

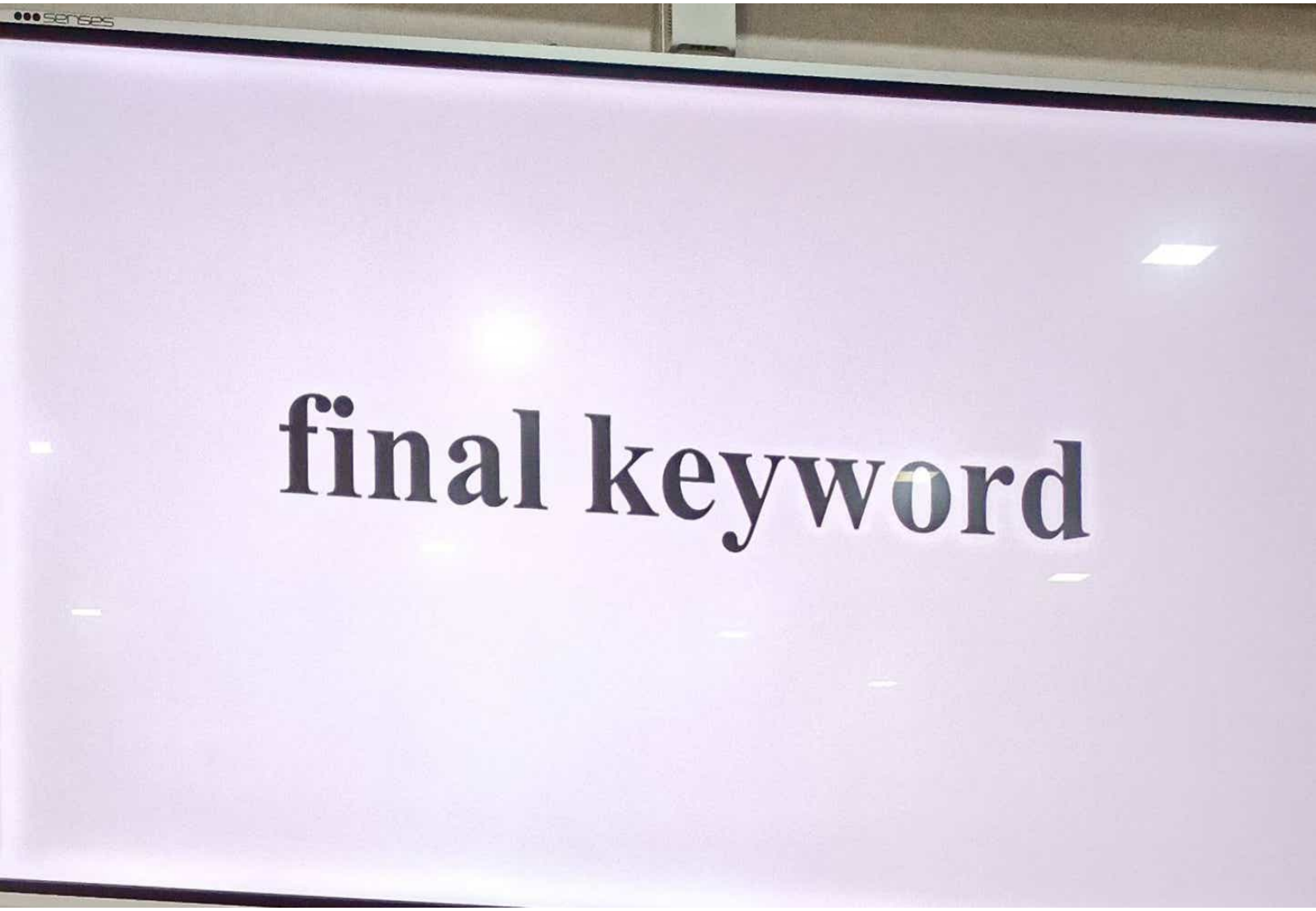
## super at constructor level

- super keyword is used to access the parent class constructor. super can also call both parametric as well as default constructors depending upon the situation.

**Ex**


D:\javap\MyJava.java • - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
Abstraction.txt
BankingSystem.java
MyJava.java
//Program to use super at constructor level
class Person
{
Person() {
System.out.println("This is Person class Constructor");
}
}
class Student extends Person
{
Student() {
// call parent class constructor
super();
System.out.println("This Student class Constructor");
}
}
class Test
{
public static void main(String[] args)
{
Student s = new Student();
}
}
2 lines, 19 characters selected
Tab Size: 4
Java


D:\javap\Mylave.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
Abstraction.txt
BankingSystem.java
Mylave.java
//Program to use super at constructor level
class Person
{
Person(int a) {
System.out.println("This is Person class Constructor"+a);
}
}
class Student extends Person
{
Student() {
// call parent class constructor
super(1000);
System.out.println("This Student class Constructor");
}
}
class Test
{
public static void main(String[] args)
{
Student s = new Student();
}
}
Line 5, Column 65
Tab Size: 4
Java


final keyword

The **final** keyword in java is used to restrict the user.

**The final keyword can be:**

- **final** variable
- **final** method
- **final** class

**final variable**

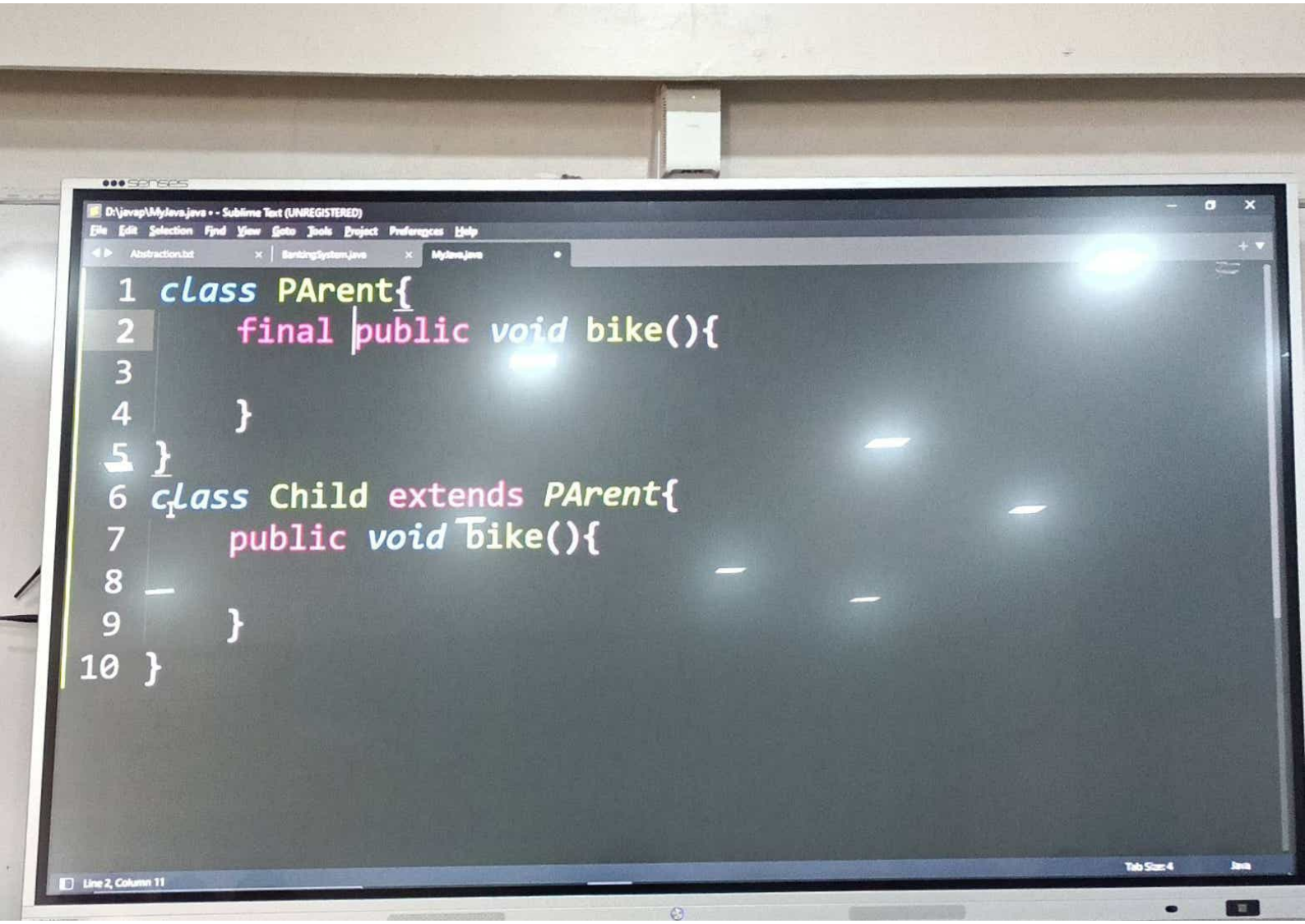
**final** variables are the constants which cannot change the value of a **final** variable once it is initialized.

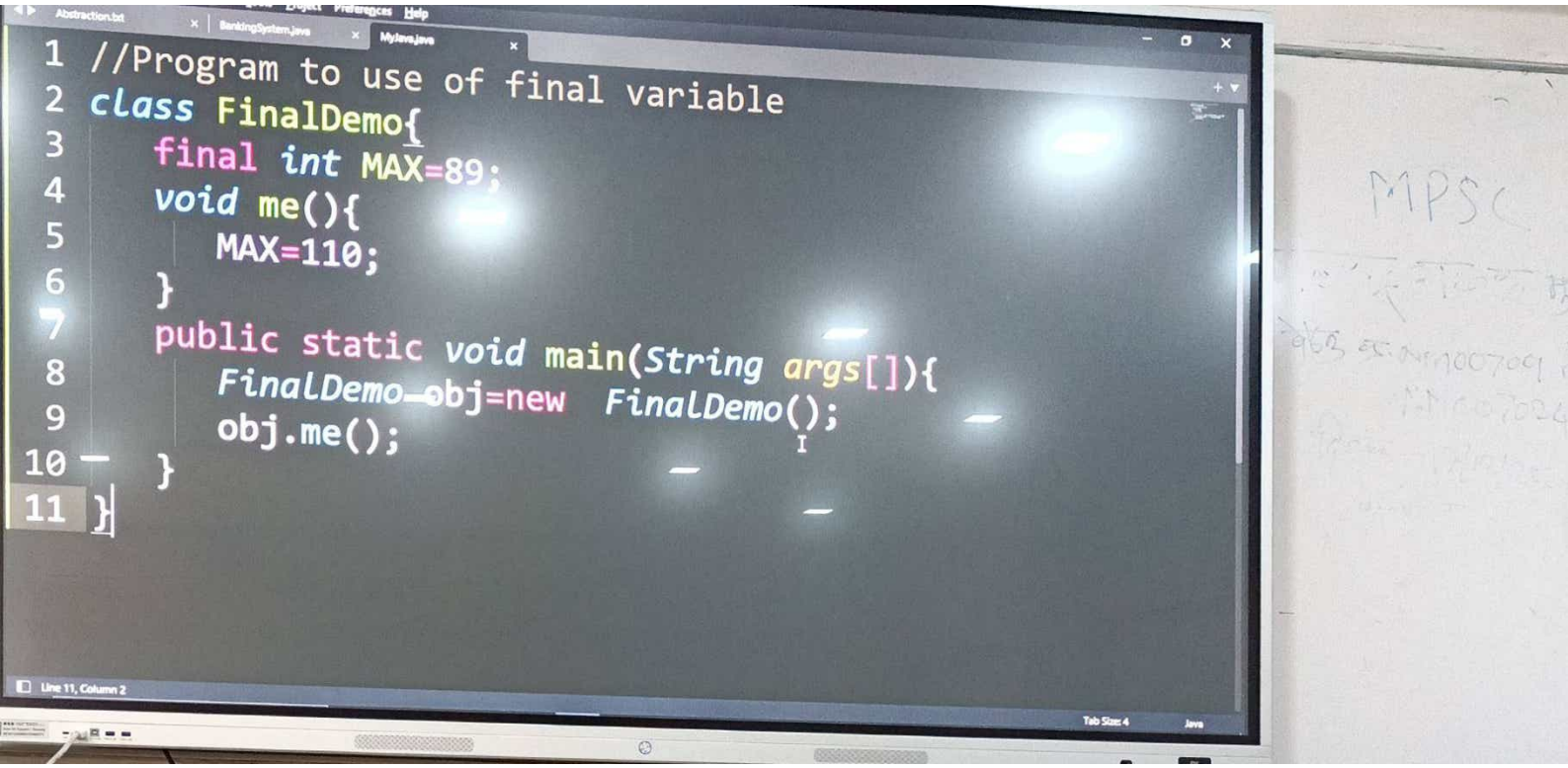
**final method**

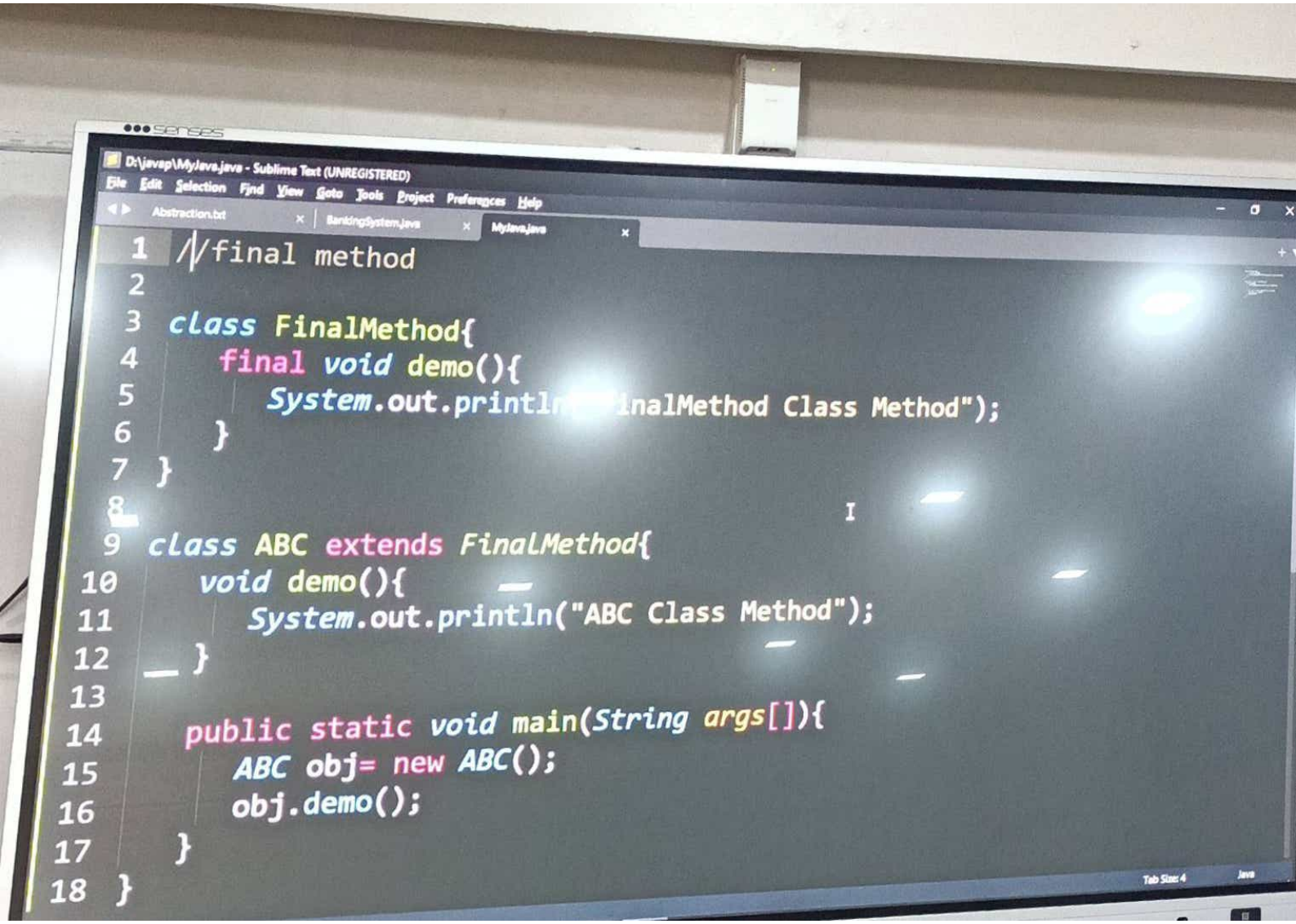
A **final** method cannot be overridden which means even though a subclass can call the final method of parent class but we cannot override it.

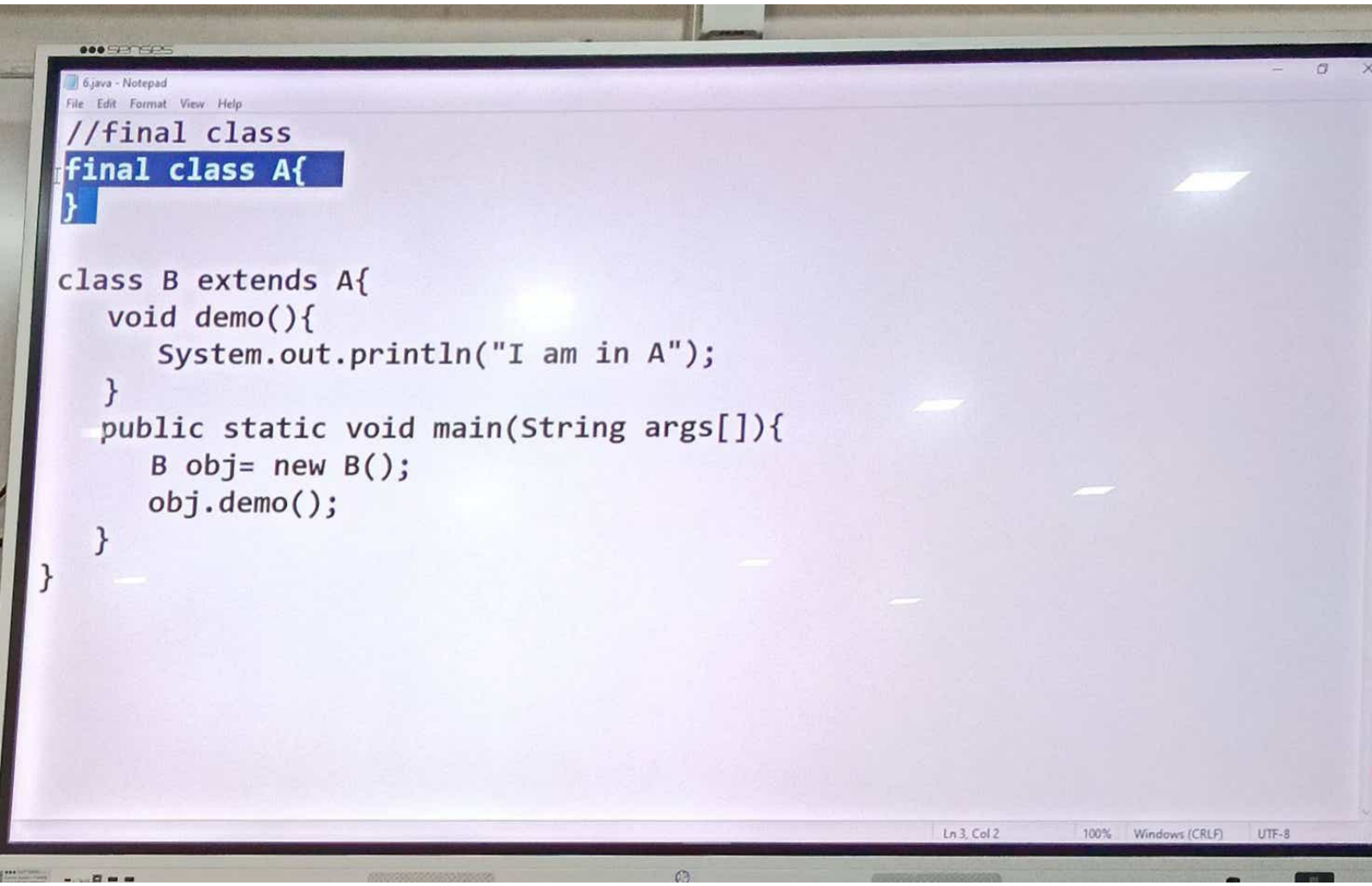
**final class**

A class is declared as **final** then this class cannot be inherited.


D:\javap\Myjava.java • - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
Abstraction.txt
BankingSystem.java
Myjava.java
1 class PArent{
2 final public void bike(){
3
4 }
5 }
6 class Child extends PArent{
7 public void bike(){
8
9 }
10 }
Line 2, Column 11
Tab Size: 4
Java


Abstraction.txt
BankingSystem.java
MyJava.java
1 //Program to use of final variable
2 class FinalDemo{
3 final int MAX=89;
4 void me(){
5 MAX=110;
6 }
7 public static void main(String args[]){
8 FinalDemo obj=new FinalDemo();
9 obj.me();
10 }
11 }
Line 11, Column 2
Tab Size: 4
Java


D:\javap\MyJava.java - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help
Abstraction.txt
BankingSystem.java
MyJava.java
//final method
class FinalMethod{
final void demo(){
System.out.println("FinalMethod Class Method");
}
}
class ABC extends FinalMethod{
void demo(){
System.out.println("ABC Class Method");
}
public static void main(String args[]){
ABC obj= new ABC();
obj.demo();
}
}
Tab Size: 4
Java


6.java - Notepad
File Edit Format View Help
//final class
final class A{
}
class B extends A{
void demo(){
System.out.println("I am in A");
}
public static void main(String args[]){
B obj= new B();
obj.demo();
}
}
Ln 3, Col 2
100%
Windows (CRLF)
UTF-8