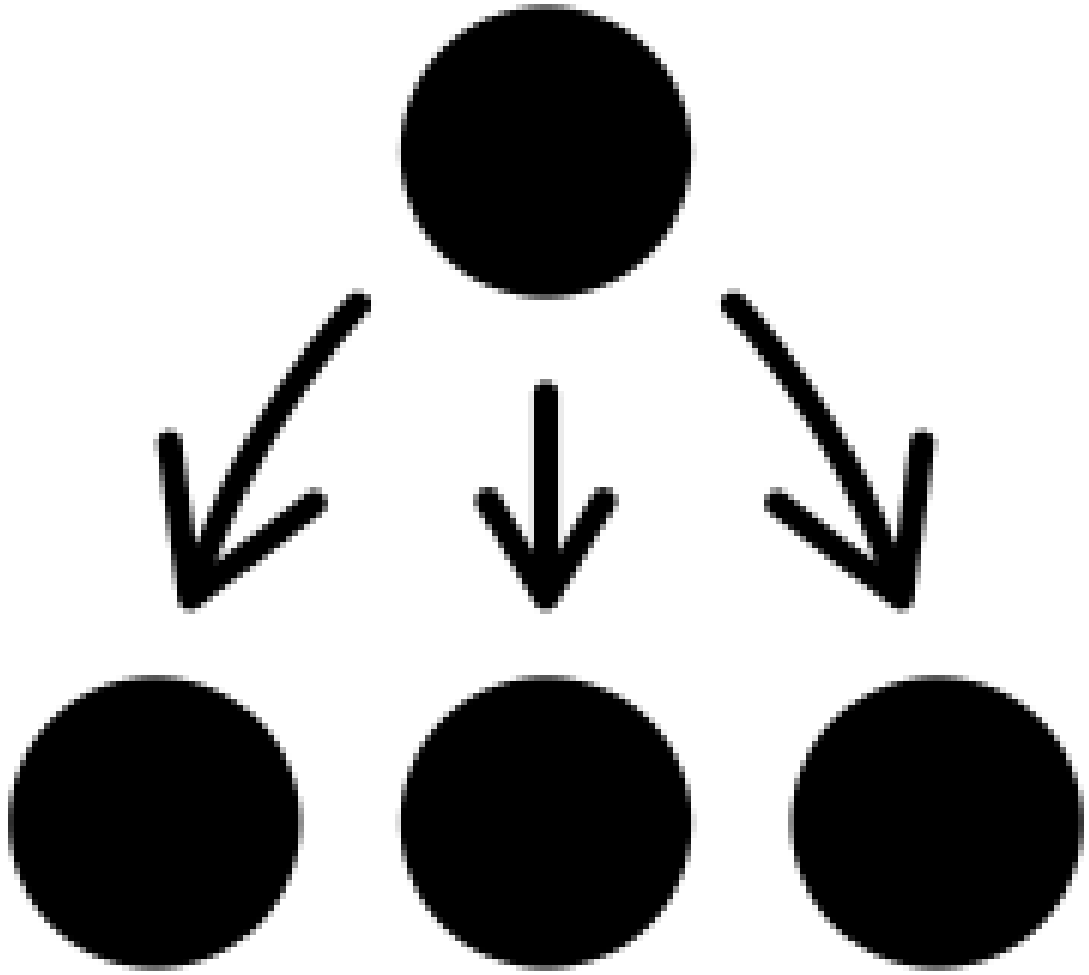
INHERITANCE



IN THE NAME OF ALLAH

بسم الله الرحمن الرحيم

THE GRACIOUS, THE MERCIFUL.

GETS - GETTING EDUCATION WITH TECHNOLOGICAL SYSTEM

Instructor: Sir A.Rehman Ali Brohi

LECTURE: 6
Inheritance in java

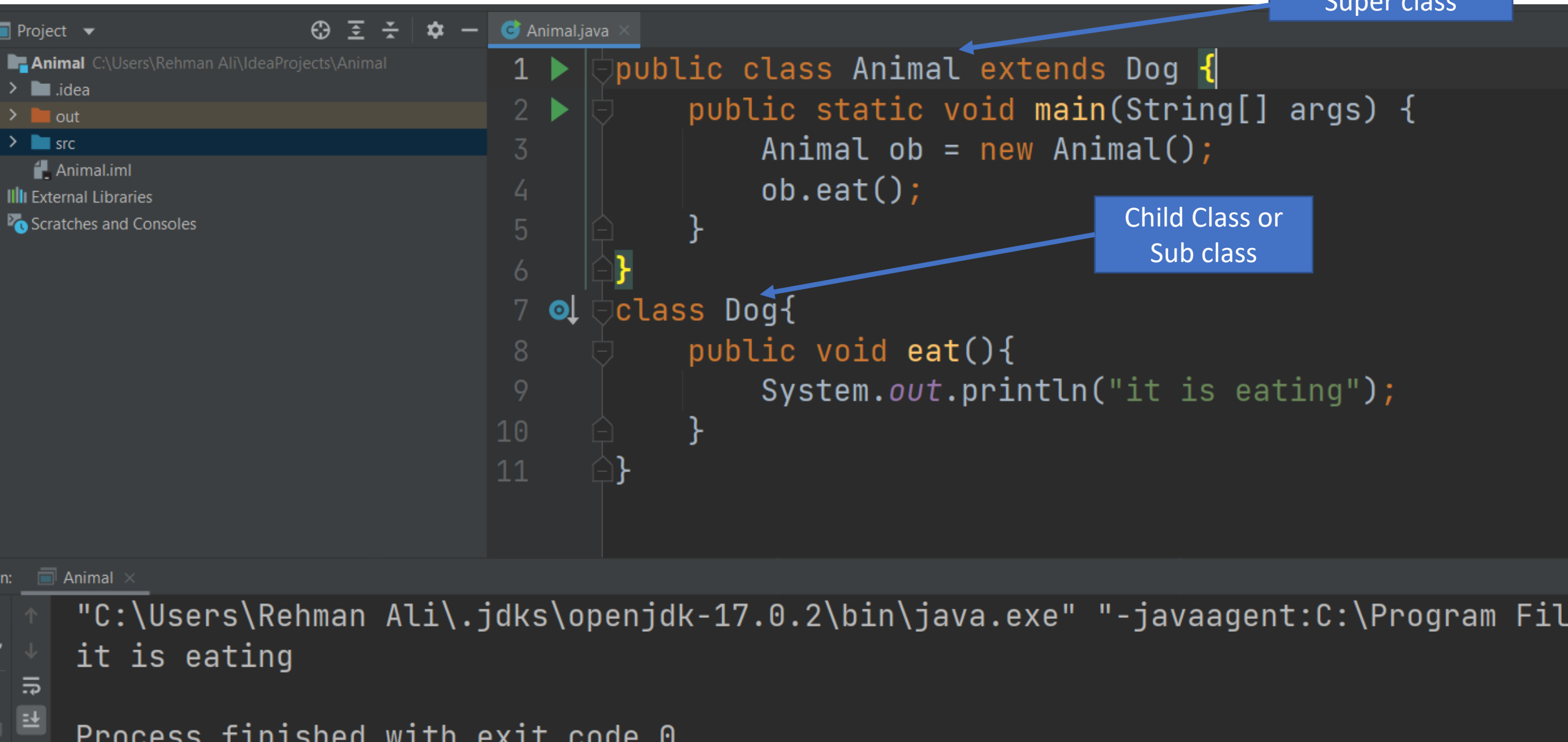
What is Inheritance?

It is inheriting the properties of parent class into child class.

OR

Inheritance is the procedure by which one object acquires all the properties and behaviours of a parent object.

Program inherit properties from other method using extends keyword



Inheritance **IS-A** relationship

Dog **IS-A** Animal

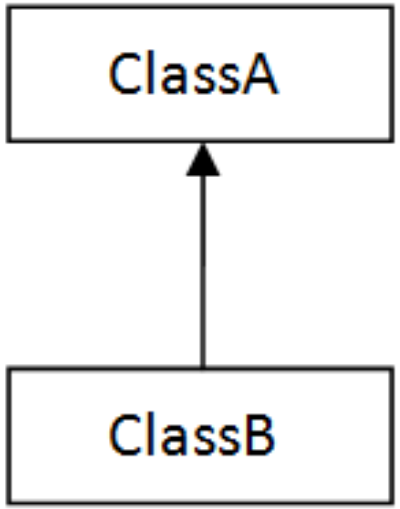
Car **IS-A** Vehicle

Surgeon **IS-A** Doctor

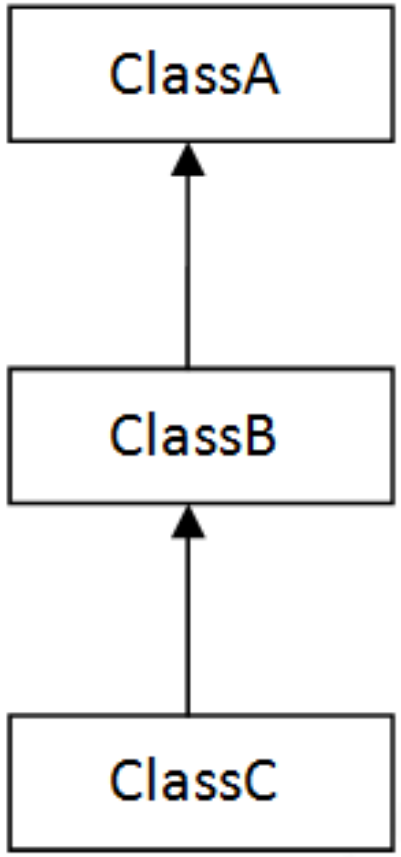
Inheritance **Advantages**

- **Code Reusability**
- **We can achieve polymorphism using inheritance**

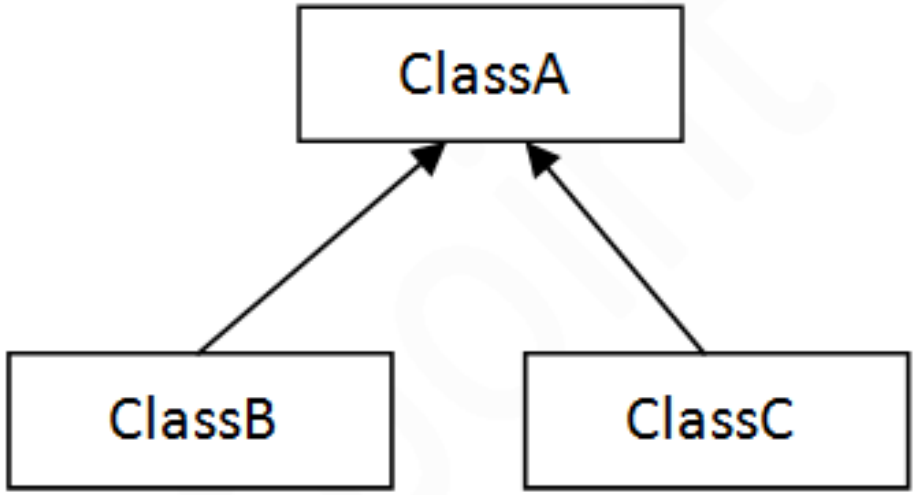
Types of Inheritance



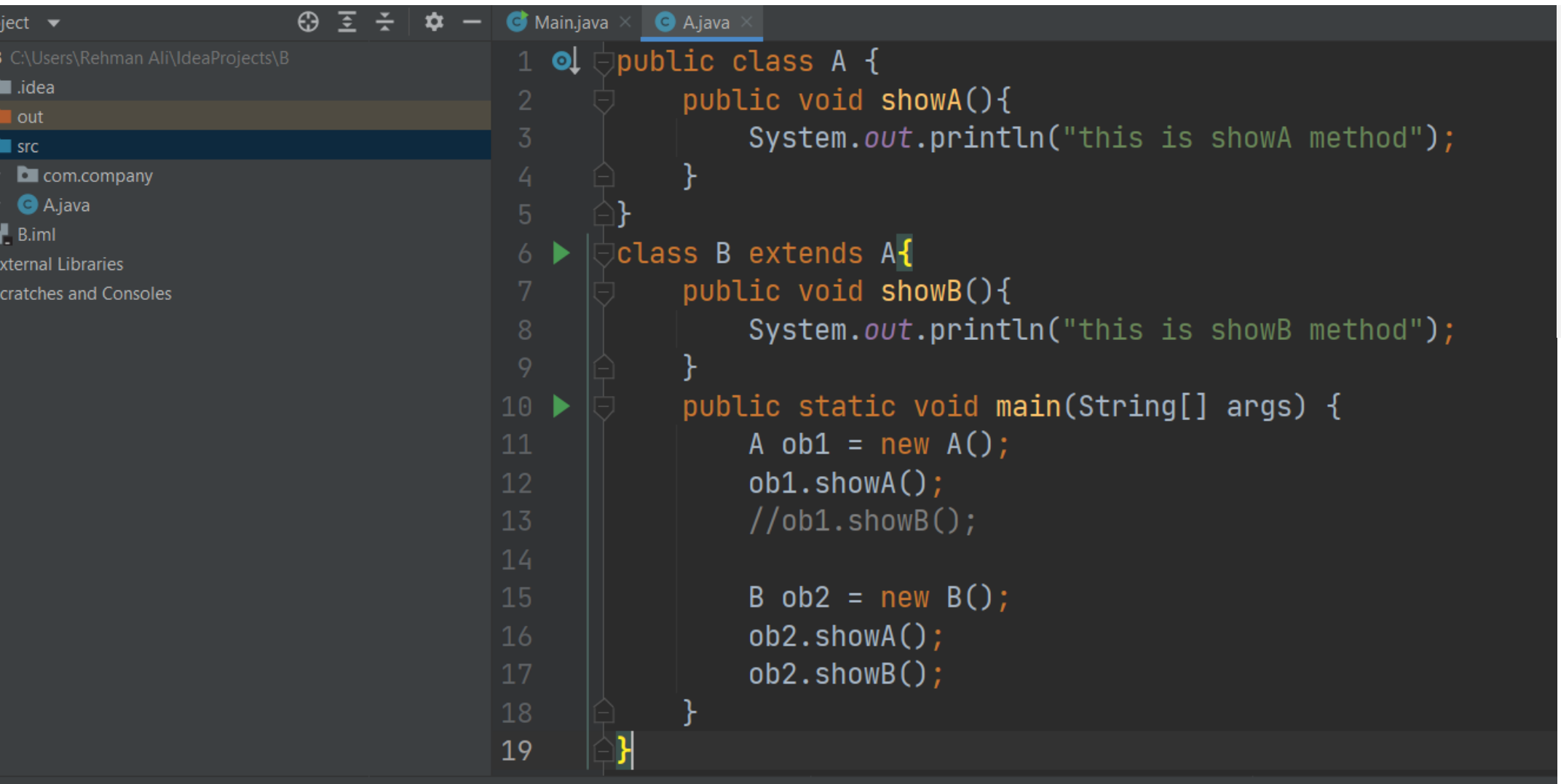
1) Single

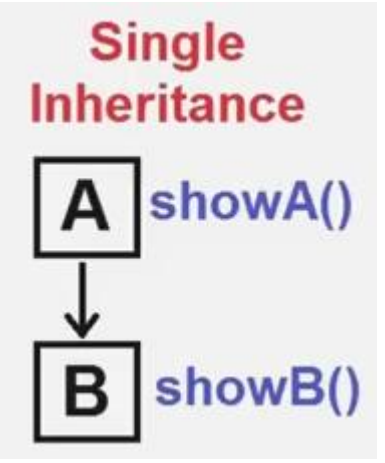


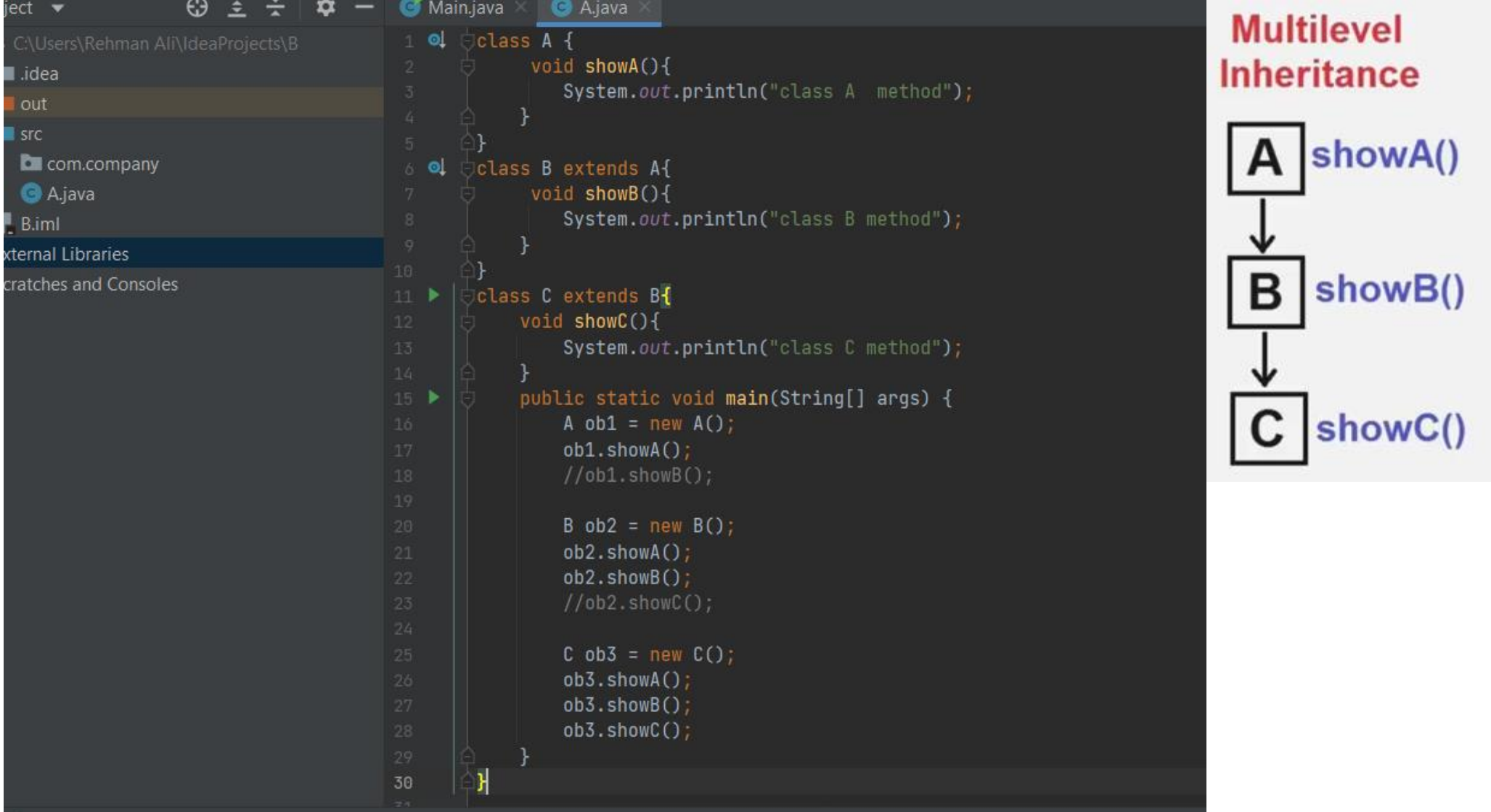
2) Multilevel

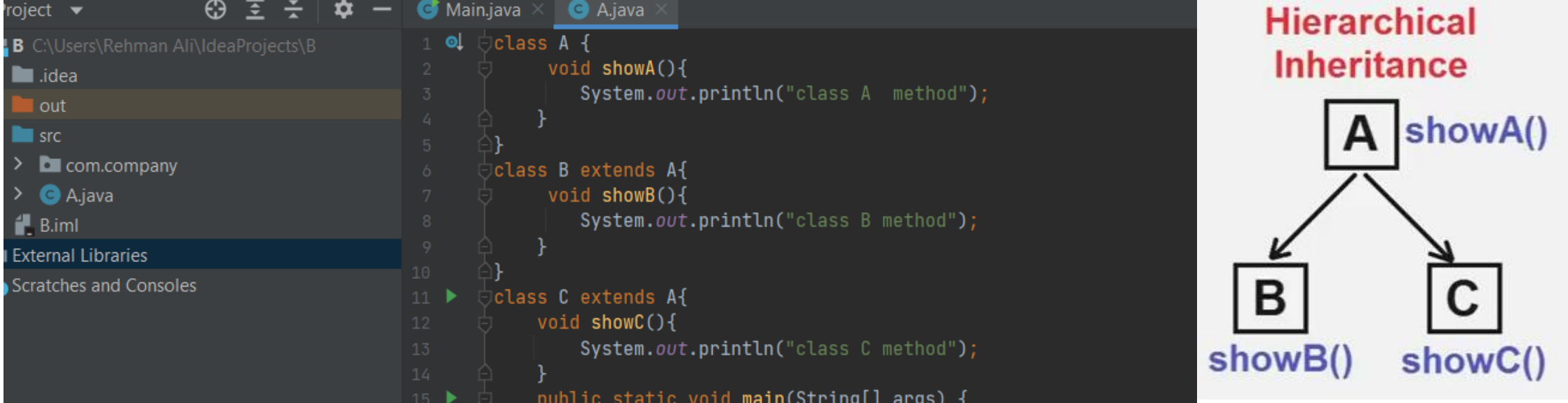


3) Hierarchical


ject
C:\Users\Rehman Ali\IdeaProjects\B
.idea
out
src
com.company
A.java
B.iml
xternal Libraries
cratches and Consoles
Main.java
A.java
1 public class A {
2 public void showA(){
3 System.out.println("this is showA method");
4 }
5 }
6 class B extends A{
7 public void showB(){
8 System.out.println("this is showB method");
9 }
10 public static void main(String[] args) {
11 A ob1 = new A();
12 ob1.showA();
13 //ob1.showB();
14
15 B ob2 = new B();
16 ob2.showA();
17 ob2.showB();
18 }
19 }
B
"C:\Users\Rehman Ali\.jdks\openjdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrai
this is showA method
this is showA method
this is showB method
Process finished with exit code 0


Single
Inheritance
A
showA()
B
showB()

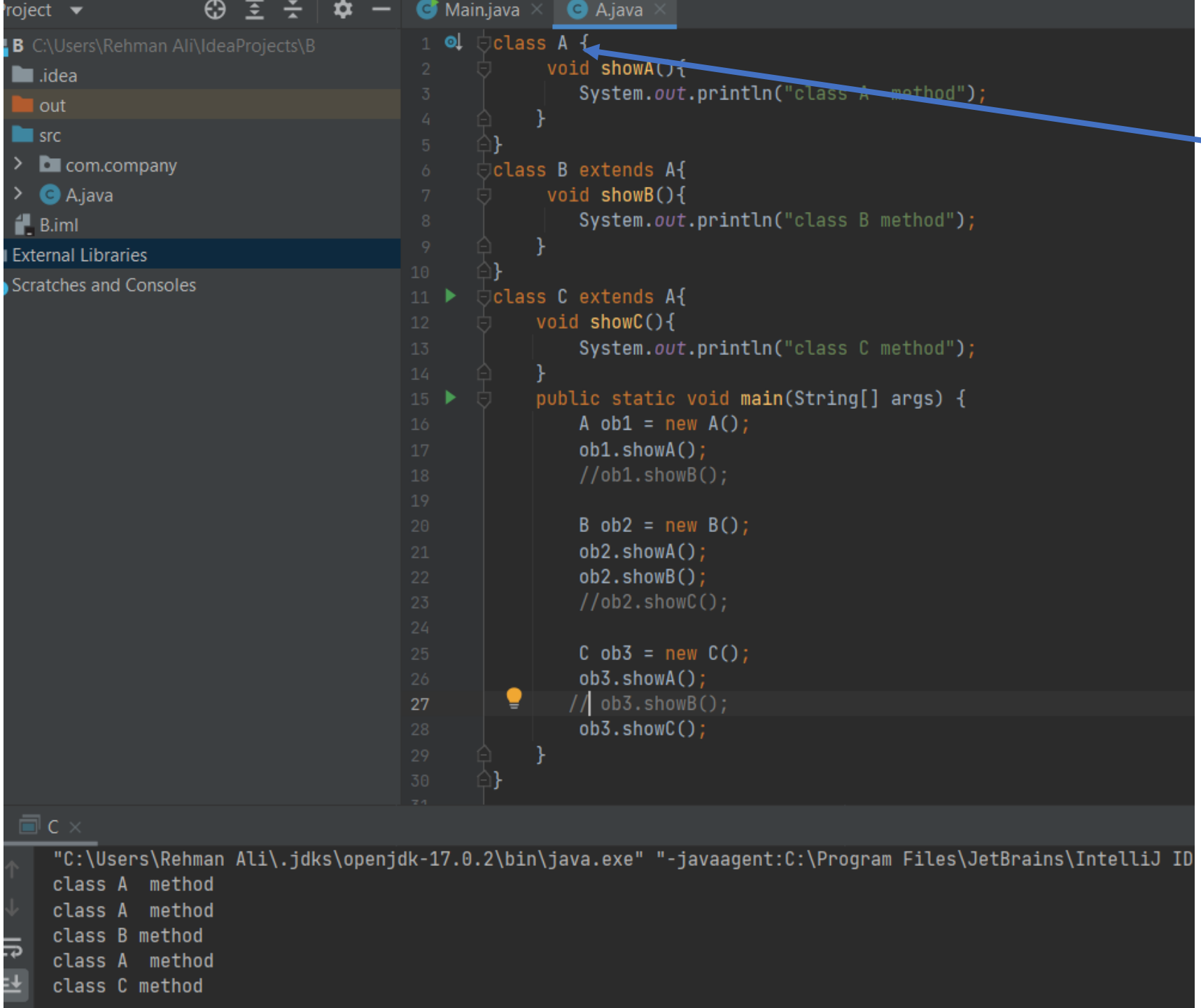

Main.java
A.java
C:\Users\Rehman Ali\IdeaProjects\B
.idea
out
src
com.company
A.java
B.iml
xternal Libraries
cratches and Consoles
class A {
void showA(){
System.out.println("class A method");
}
}
class B extends A{
void showB(){
System.out.println("class B method");
}
}
class C extends B{
void showC(){
System.out.println("class C method");
}
public static void main(String[] args) {
A ob1 = new A();
ob1.showA();
//ob1.showB();
B ob2 = new B();
ob2.showA();
ob2.showB();
//ob2.showC();
C ob3 = new C();
ob3.showA();
ob3.showB();
ob3.showC();
}
}
C
"C:\Users\Rehman Ali\.jdks\openjdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA
class A method
class A method
class B method
class A method
class B method
class C method
Multilevel Inheritance
A showA()
B showB()
C showC()


Project
B C:\Users\Rehman Ali\IdeaProjects\B
.idea
out
src
com.company
A.java
B.iml
External Libraries
Scratches and Consoles
Main.java
A.java
1 class A {
2 void showA(){
3 System.out.println("class A method");
4 }
5 }
6 class B extends A{
7 void showB(){
8 System.out.println("class B method");
9 }
10 }
11 class C extends A{
12 void showC(){
13 System.out.println("class C method");
14 }
15 public static void main(String[] args) {
16 A ob1 = new A();
17 ob1.showA();
18 //ob1.showB();
19
20 B ob2 = new B();
21 ob2.showA();
22 ob2.showB();
23 //ob2.showC();
24
25 C ob3 = new C();
26 ob3.showA();
27 // ob3.showB();
28 ob3.showC();
29 }
30 }
C
"C:\Users\Rehman Ali\.jdks\openjdk-17.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ ID
class A method
class A method
class B method
class A method
class C method
Hierarchical Inheritance
A
showA()
B
C
showB()
showC()

IMPORTANT NOTE

Not All properties can inheritance like:

1.Constructor method cannot be inherit.
2.Private method cannot be inherit.
3. Every class have a parent class except object class



By default it extends object class

Disadvantage of **Inheritance** it is tightly coupled means if you change some properties in parent class it is also change in child class