A.java

*Member Inner Class*

**public** **class** A {

**private** **int** x = 10;

**private** **static** **int** *y* = 100;

**private** **class** B {

**private** **int** x = 20;

//private static int y = 200; //Compilation fails. The field y cannot be declared static in a non-static inner type, unless initialized with a constant expression

**private** **static** **final** **int** ***y*** = 200;

**private** **class** C {

**private** **int** x = 30;

//private static int y = 300; // Compilation fails. The field y cannot be declared static in a non-static inner type, unless initialized with a constant expression

**private** **static** **final** **int** ***y*** = 300;

**private** **void** printX() {

//Instance variable of C

System.***out***.println(x); //Prints: 30

System.***out***.println(**this**.x); //Prints: 30

System.***out***.println(A.B.C.**this**.x); //Prints: 30

System.***out***.println(B.C.**this**.x); //Prints: 30

System.***out***.println(C.**this**.x); //Prints: 30

//Instance variable of B

System.***out***.println(B.**this**.x); //Prints: 20

System.***out***.println(A.B.**this**.x); //Prints: 20

//Instance variable of A

System.***out***.println(A.**this**.x); //Prints: 10

//Static variable of A

System.***out***.println(A.B.C.***y***); //Prints: 300

System.***out***.println(B.C.***y***); //Prints: 300

System.***out***.println(C.***y***); //Prints: 300

System.***out***.println(***y***); //Prints: 300

System.***out***.println(A.B.***y***); //Prints: 200

System.***out***.println(B.***y***); //Prints: 200

System.***out***.println(A.*y*); //Prints: 100

}

}

}

**public** **static** **void** main(String[] args) {

A a = **new** A();

System.***out***.println(a.x); //Prints: 10

System.***out***.println(a.*y*); //Prints: 100

System.***out***.println( ++a.*y*); //Prints: 101

A.B b1 = a.**new** B();

B b2 = a.**new** B(); //Also ok

b2 = **new** A().**new** B(); //Also ok

System.***out***.println(b2.x); //Prints: 20

System.***out***.println(b2.***y***); //Prints: 200

//System.out.println(++b2.y); //Compilation fails. The final field A.B.y cannot be assigned

A.B.C c1 = b2.**new** C();

B.C c2 = b2.**new** C(); //Also ok

//C c3 = b2.new C(); //Compilation fails. C cannot be resolved to a type

c2 = **new** A().**new** B().**new** C(); //Also ok

c2 = ((**new** A()).**new** B()).**new** C();//Also ok

System.***out***.println(c2.x); //Prints: 30

System.***out***.println(c2.***y***); //Prints: 300

//System.out.println(++c2.y); //Compilation fails. The final field A.B.C.y cannot be assigned

//System.out.println(x); //Compilation fails. Cannot make a static reference to the non-static field x

System.***out***.println(*y*); //Prints 101

c2.printX();

}

}