1. class A {

void callthis() {

System.out.println("Inside Class A's Method!");

}

}

class B extends A {

void callthis() {

System.out.println("Inside Class B's Method!");

}

}

class C extends A {

void callthis() {

System.out.println("Inside Class C's Method!");

}

}

class DynamicDispatch {

public static void main(String args[]) {

A a = new A();

B b = new B();

C c = new C();

A ref;

ref = b;

ref.callthis(); // Output: Inside Class B's Method!

ref = c;

ref.callthis(); // Output: Inside Class C's Method!

ref = a;

ref.callthis(); // Output: Inside Class A's Method!

}

}

2. public class FactorialClass {

public static int num = 10;

// Method to calculate factorial

int getFactorial() {

int factorial = 1;

for (int i = 1; i <= num; i++) {

factorial \*= i;

}

return factorial;

}

// Override toString method to display factorial and calculation

@Override

public String toString() {

StringBuilder sb = new StringBuilder();

sb.append("Factorial: ").append(num).append("! = ");

// Append the factorial calculation

for (int i = 1; i <= num; i++) {

sb.append(i);

if (i < num) {

sb.append(" \* ");

}

}

sb.append(" = ").append(getFactorial());

return sb.toString();

}

// Main method to run the program

public static void main(String[] args) {

FactorialClass fc = new FactorialClass();

System.out.println(fc.toString());

}

}

3.