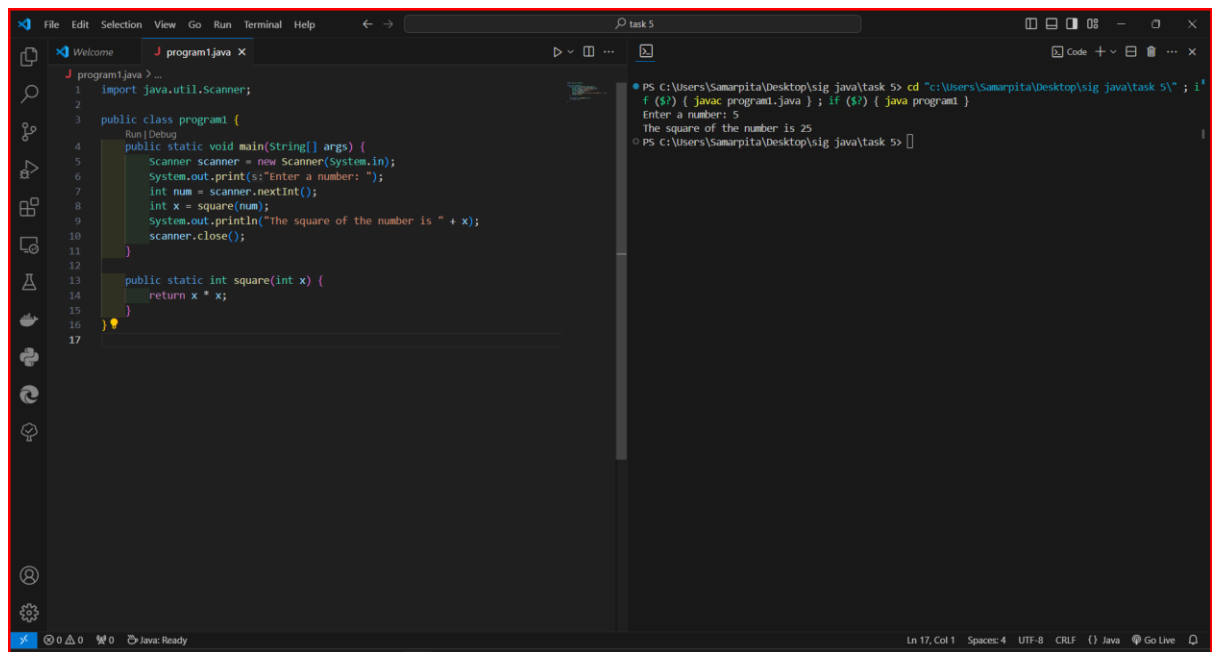


1. WAP to find the square of any number using the function.



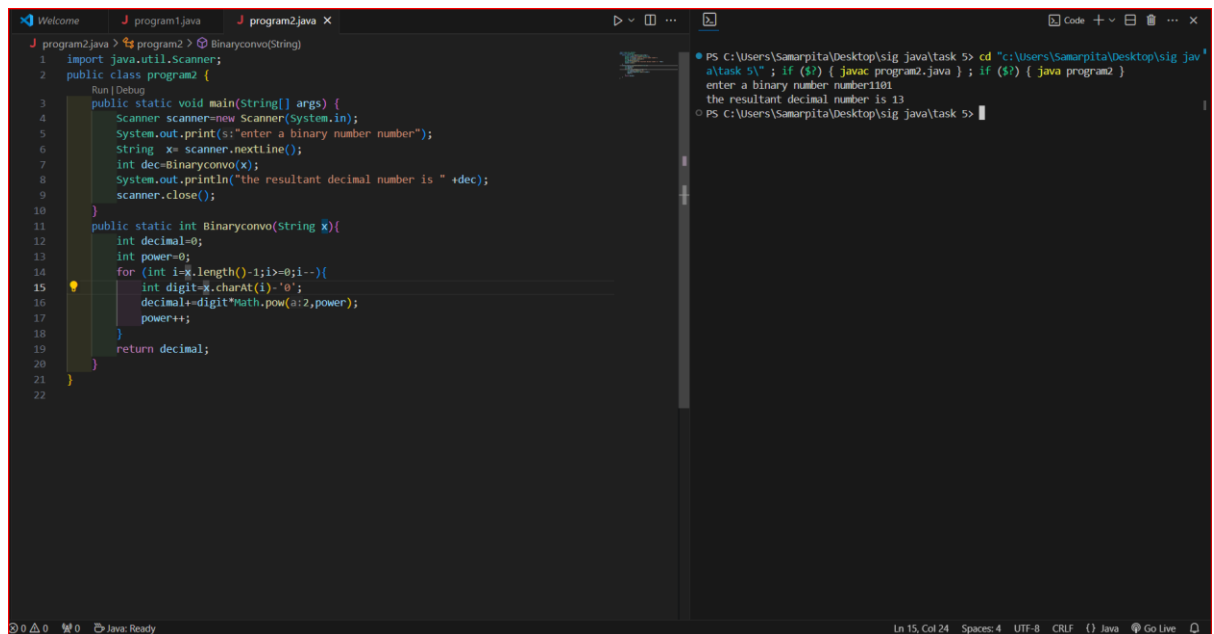
The screenshot shows an IDE with a Java file named `program1.java`. The code defines a `main` method that uses a `Scanner` to take input and a `square` function to calculate the square of the input. The terminal output shows the program running successfully, taking the input `5` and outputting `The square of the number is 25`.

```
1 import java.util.Scanner;
2
3 public class program1 {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6         System.out.print("Enter a number: ");
7         int num = scanner.nextInt();
8         int x = square(num);
9         System.out.println("The square of the number is " + x);
10        scanner.close();
11    }
12
13    public static int square(int x) {
14        return x * x;
15    }
16 }
17
```

Terminal Output:

```
PS C:\Users\Samarpita\Desktop\sig java\task 5> cd "C:\Users\Samarpita\Desktop\sig java\task 5\" ; if ($?) { javac program1.java } ; if ($?) { java program1 }
Enter a number: 5
The square of the number is 25
PS C:\Users\Samarpita\Desktop\sig java\task 5>
```

2. WAP to convert binary number to a decimal number using the function.



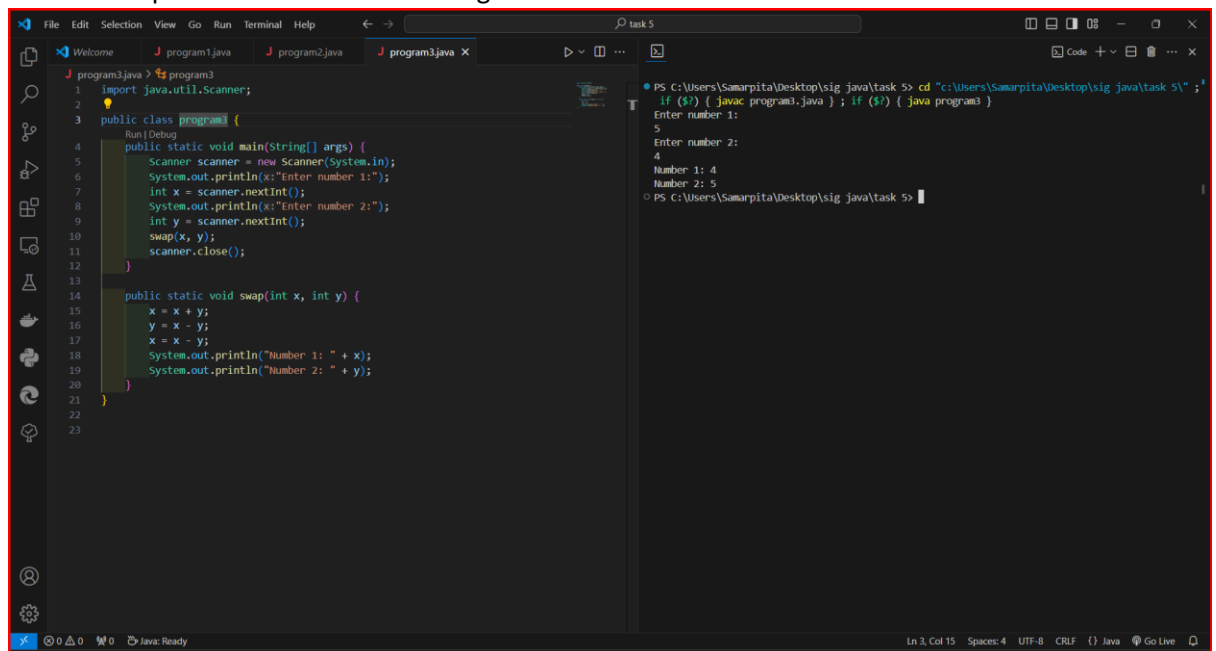
The screenshot shows an IDE with a Java file named `program2.java`. The code defines a `main` method that uses a `Scanner` to take input and a `Binaryconvo` function to convert the binary number to a decimal number. The terminal output shows the program running successfully, taking the input `1101` and outputting `the resultant decimal number is 13`.

```
1 import java.util.Scanner;
2 public class program2 {
3     public static void main(String[] args) {
4         Scanner scanner=new Scanner(System.in);
5         System.out.print("enter a binary number number");
6         String x= scanner.nextline();
7         int dec=Binaryconvo(x);
8         System.out.println("the resultant decimal number is " +dec);
9         scanner.close();
10    }
11
12    public static int Binaryconvo(String x){
13        int decimal=0;
14        int power=0;
15        for (int i=x.length()-1;i>=0;i--){
16            int digit=x.charAt(i)-'0';
17            decimal+=digit*Math.pow(2,power);
18            power++;
19        }
20        return decimal;
21    }
22 }
```

Terminal Output:

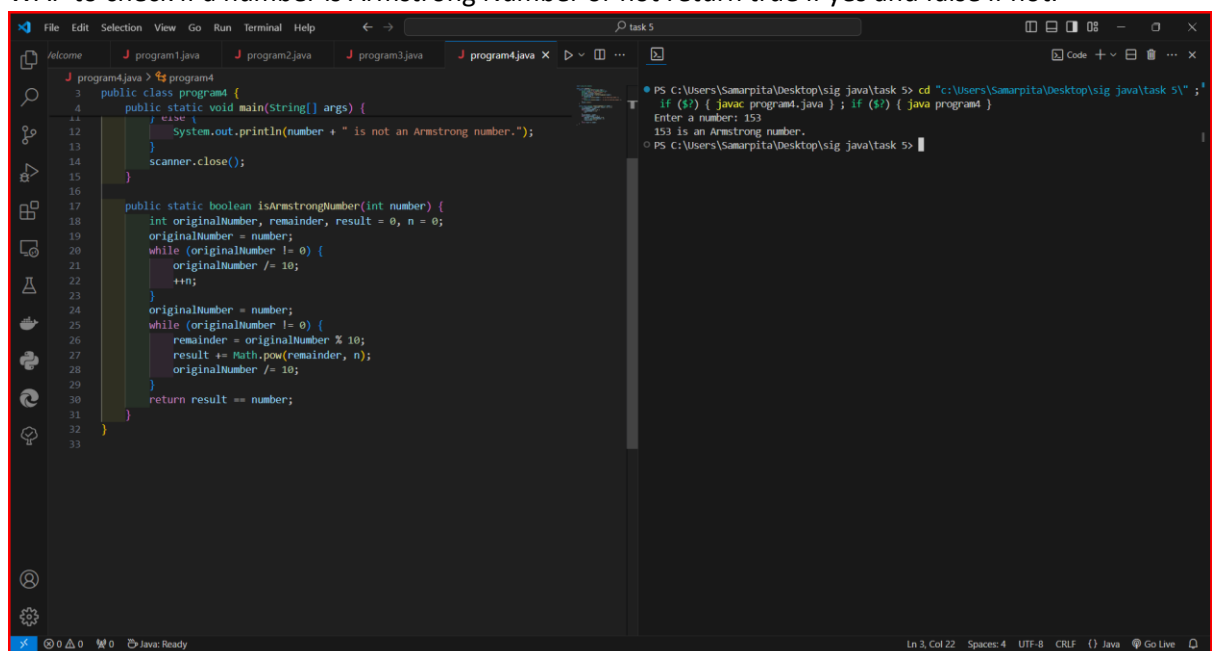
```
PS C:\Users\Samarpita\Desktop\sig java\task 5> cd "C:\Users\Samarpita\Desktop\sig java\task 5\" ; if ($?) { javac program2.java } ; if ($?) { java program2 }
enter a binary number number1101
the resultant decimal number is 13
PS C:\Users\Samarpita\Desktop\sig java\task 5>
```

3. WAP to swap two number without using the third variable.



```
File Edit Selection View Go Run Terminal Help task 5
Welcome J program1.java J program2.java J program3.java X
1 import java.util.Scanner;
2
3 public class program3 {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6         System.out.println("Enter number 1:");
7         int x = scanner.nextInt();
8         System.out.println("Enter number 2:");
9         int y = scanner.nextInt();
10        swap(x, y);
11        scanner.close();
12    }
13
14    public static void swap(int x, int y) {
15        x = x + y;
16        y = x - y;
17        x = x - y;
18        System.out.println("Number 1: " + x);
19        System.out.println("Number 2: " + y);
20    }
21
22 }
23
PS C:\Users\Samarpita\Desktop\sig java\task 5> cd "c:\Users\Samarpita\Desktop\sig java\task 5\" ;
if ($?) { javac program3.java } ; if ($?) { java program3 }
Enter number 1:
5
Enter number 2:
4
Number 1: 4
Number 2: 5
PS C:\Users\Samarpita\Desktop\sig java\task 5>
```

4. WAP to check if a number is Armstrong Number or not return true if yes and false if not.

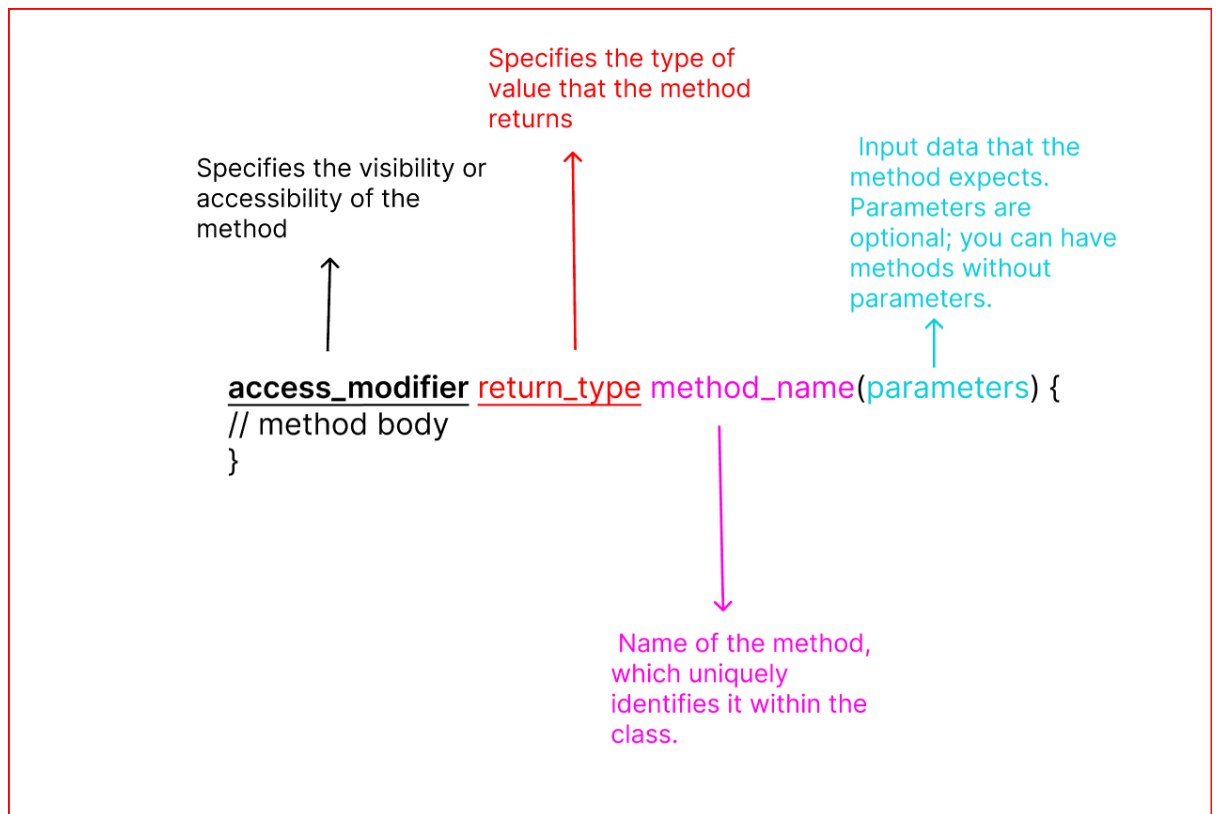


```
File Edit Selection View Go Run Terminal Help task 5
Welcome J program1.java J program2.java J program3.java J program4.java X
3 public class program4 {
4     public static void main(String[] args) {
5         Scanner scanner = new Scanner(System.in);
6         System.out.println("Enter a number:");
7         int number = scanner.nextInt();
8         System.out.println(number + " is not an Armstrong number.");
9         scanner.close();
10    }
11
12    public static boolean isArmstrongNumber(int number) {
13        int originalNumber = number;
14        int remainder, result = 0, n = 0;
15        while (originalNumber != 0) {
16            remainder = originalNumber % 10;
17            result += Math.pow(remainder, n);
18            originalNumber /= 10;
19            n++;
20        }
21        originalNumber = number;
22        while (originalNumber != 0) {
23            remainder = originalNumber % 10;
24            result += Math.pow(remainder, n);
25            originalNumber /= 10;
26            n++;
27        }
28        return result == originalNumber;
29    }
30
31 }
32
PS C:\Users\Samarpita\Desktop\sig java\task 5> cd "c:\Users\Samarpita\Desktop\sig java\task 5\" ;
if ($?) { javac program4.java } ; if ($?) { java program4 }
Enter a number: 153
153 is an Armstrong number.
PS C:\Users\Samarpita\Desktop\sig java\task 5>
```

5. How is a method declared in JAVA? Explain with example.

A method is declared within a class and defines a set of actions that can be performed by the objects if that class or by the class itself.

Syntax



Example of method usage in java

The screenshot shows an IDE with a Java program named `program5.java` and its execution output in the terminal.

Java Code (program5.java):

```
1 public class program5 {  
2     public int add(int a, int b) {  
3         return a + b;  
4     }  
5  
6     public int subtract(int a, int b) {  
7         return a - b;  
8     }  
9  
10    public int multiply(int a, int b) {  
11        return a * b;  
12    }  
13  
14    public double divide(int a, int b) {  
15        return (double) a / b;  
16    }  
17  
18    Run | Debug  
19    public static void main(String[] args) {  
20        program5 calculator = new program5();  
21  
22        int sum = calculator.add(a:5, b:3);  
23        System.out.println("Sum: " + sum);  
24  
25        int difference = calculator.subtract(a:10, b:4);  
26        System.out.println("Difference: " + difference);  
27  
28        int product = calculator.multiply(a:6, b:7);  
29        System.out.println("Product: " + product);  
30  
31        double quotient = calculator.divide(a:20, b:4);  
32        System.out.println("Quotient: " + quotient);  
33    }  
34  
35 }
```

Terminal Output:

```
PS C:\Users\Samarpita\Desktop\sig java\task 5> cd "c:\Users\Samarpita\Desktop\sig java\task 5"& if ($?) { javac program5.java } ; if ($?) { java program5 }  
Sum: 8  
Difference: 6  
Product: 42  
Quotient: 5.0  
PS C:\Users\Samarpita\Desktop\sig java\task 5>
```