Activity 9 – Java Methods

Program 4 – Create a program to calculate the total cost of a list of products, each with its own price and quantity:

Hints:

Create a method called **calculateTotalCost** which takes three arrays as parameters: products (names of the products), prices (prices of the products), and quantities (quantities of each product). The method will then calculate the total cost by multiplying the price with the quantity for each product.

In the **main** method, define arrays for products, prices, and quantities. Call the **calculateTotalCost** method with these arrays.

```java
public class ShoppingCart {


    // Method to calculate the total cost of products in the cart
    public static double calculateTotalCost(String[] products, double[] prices, int[] quantities) {

        double totalCost = 0.0;

        for (int i = 0; i < products.length; i++) {

            totalCost += prices[i] * quantities[i];

        }

        return totalCost;

    }


    public static void main(String[] args) {

        String[] products = { "Widget", "Gadget", "Thingamajig" };

        double[] prices = { 10.0, 15.0, 8.0 };

        int[] quantities = { 5, 3, 2 };


        // Calculating the total cost of products in the cart

        double totalCost = calculateTotalCost(products, prices, quantities);


        // Printing the total cost

        System.out.println("Total cost of products in the cart: £" + totalCost);

    }

}
```

Program 5 – Create a program to calculate the monthly salary of employees based on their hourly rate and hours worked

Hints:
Create a method called **calculateMonthlySalary** which takes two parameters: **hourlyRate** (the hourly rate of the employee) and **hoursWorked** (the number of hours worked in a week). The method will calculate the monthly salary (assuming 4 weeks in a month).

In the **main** method, define the hourly rates and hours worked for two employees. Call the **calculateMonthlySalary** method for each employee.

```java
public class PayrollCalculator {


  // Method to calculate the monthly salary

  public static double calculateMonthlySalary(double hourlyRate, int hoursWorked) {

    double monthlySalary = hourlyRate * hoursWorked * 4; // Assuming 4 weeks in a month

    return monthlySalary;

  }

  public static void main(String[] args) {

    double hourlyRateEmployee1 = 15.0;

    int hoursWorkedEmployee1 = 160; // 40 hours per week


    double hourlyRateEmployee2 = 20.0;

    int hoursWorkedEmployee2 = 140; // 35 hours per week


    // Calculating monthly salaries for employees

    double monthlySalaryEmployee1 = calculateMonthlySalary(hourlyRateEmployee1,
hoursWorkedEmployee1);

    double monthlySalaryEmployee2 = calculateMonthlySalary(hourlyRateEmployee2,
hoursWorkedEmployee2);


    // Printing the results

    System.out.println("Monthly salary for Employee 1: $" + monthlySalaryEmployee1);

    System.out.println("Monthly salary for Employee 2: $" + monthlySalaryEmployee2);

  }
```