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Title:	<i>Skills Demonstration 1</i>
Component Title and Code:	Programming and Design Principles, 5N2927

```

import java.util.Random;
import java.util.Scanner;
import java.text.DecimalFormat;
public class Payslip {

    public static void main(String[] args) {
        // this program reads the information from a farm worker and prints
        out a payslip
        Scanner sc = new Scanner(System.in);

        //Header
        System.out.println("=====");
        System.out.println("CORCORANS FRUIT FARM PAY SYSTEM");
        System.out.println("=====");

        //Request for employees information
        System.out.print("input your first name:");
        String name = sc.next();
        System.out.printf("Dear %s, Welcome to Corcorans Fruit Farm Pay
System \nInput you PPS Number:", name);
        String ppsNumber = sc.next();

        //Request for the number of every fruit picked
        System.out.println("Number of strawberry picked:");
        int numberOfStrawberry = sc.nextInt();
        System.out.println("Number of blueberry picked:");
        int numberOfBlueberry = sc.nextInt();
        System.out.println("Number of raspberry picked:");
        int numberOfRaspberry = sc.nextInt();
        System.out.println("Number of blackcurrant picked:");
        int numberOfBlackcurrant = sc.nextInt();
        sc.close();

        //Total number of fruits
        int totalNumberOfFruits = (numberOfStrawberry + numberOfBlueberry +
        numberOfRaspberry + numberOfBlackcurrant);

        //Calculate the amount earned for every type of fruit
        double amountEarnedForStrawberries = (0.08 * numberOfStrawberry);
        double amountEarnedForBlueberries = (0.06 * numberOfBlueberry);
        double amountEarnedForRaspberries = (0.05 * numberOfRaspberry);
        double amountEarnedForBlackcurrant = (0.05 * numberOfBlackcurrant);

        //Total amount earned before bonus
        double grossPay = (amountEarnedForStrawberries +
        amountEarnedForBlueberries + amountEarnedForRaspberries +
        amountEarnedForBlackcurrant);

        //Calculate bonus
    }
}

```


ALGORITHM

Skills Demonstration 1

Algorithm

OUTPUT: “Input your first name”

INPUT: name [String]

OUTPUT: Dear name Welcome to corcorans fruit farm pay system

Input your PPS number

INPUT: ppsNum [String]

OUTPUT: "number of strawberries picked:"

INPUT: `numberOfStrawberry` [int]

OUTPUT: "number of blueberries picked:"

INPUT: `numberOfBlueberry` [int]

OUTPUT: “number of raspberries”

INPUT: `numberOfRaspberry` [int]

OUTPUT: "number of Blackcurrants"

INPUT: `numberOfBlackcurrant` [int]

CALCULATIONS

Total Number of

[int] totalNumberOfFru

Amount earned for each fruit:

amountEarnedForStrawberry

ammountEarnedForStrawberries [double] = (0.05 * numberOfStrawberry);
ammountEarnedForBlueberries [double] = (0.06 * numberOfBlueberry);

ammountEarnedForBlueberries [double] = (0.05 * numberOfBlueberry);
ammountEarnedForRaspberries [double] = (0.05 * numberOfRaspberry);

ammountEarnedOnraspberries [double] = (0.05 * numberOfraspberry),
ammountEarnedForBlackcurrant [double] = (0.05 * numberOfBlackcurrant),

Gross Pay:

grossPay.
grossPay [c]

gross by [double] (amountEarnedForStrawberries + amountEarnedForBlueberries + amountEarnedForRaspberries + amountEarnedForBlackcurrant)

Check if eligible for bonus:

Check if eligible for bonus.

```

IF totalNumberOfFruits > 1500
    THEN bonus[byte] = 50
ELSE bonus = 0
Calculating overall gross pay:
overallGrossPay [double] = grossPay + bonus
Calculating USC:
IF overallGrossPay > 600
    uscTax[double] = overallGrossPay * 0.05
ELSE IF overallGrossPay>=400
    uscTax[double] = overallGrossPay * 0.03
ELSE uscTax = 0
Calculating income tax:
IF overallGrossPay > 450
    incomeTax[double] = overallGrossPay * 0.40
ELSE IF overallGrossPay>=300
    incomeTax[double] = overallGrossPay * 0.20
ELSE incomeTax = 0
Calculating total deductions:
totalDeductions[double] = uscTax + incomeTax
Calculating net pay:
netPay[double] = overallGrossPay – totalDeductions
Printing pay slip:
OUTPUT: "Pay slip" + formattedPayslipNumber
OUTPUT: "Name:" + name
OUTPUT: "PPS Number:" + ppsNum
OUTPUT: blank line
OUTPUT: "Fruit Details"
OUTPUT: blank line
OUTPUT: "Strawberries:" , numberOfStrawberry, amountEarnedForStrawberries
OUTPUT: "Blueberries:" , numberOfBlueberry, amountEarnedForBlueberries
OUTPUT: "Raspberries:" , numberOfRaspberry, amountEarnedForRaspberries
OUTPUT: "Blackcurrant:" , numberOfBlackcurrant, amountEarnedForBlackcurrant
OUTPUT: blank line
OUTPUT: "Total Units Picked:" , totalNumberOfFruits
OUTPUT: "Gross Pay:" + grossPay
IF bonus > 0
    OUTPUT: "Bonus Paid:" + bonus
IF bonus > 0
    OUTPUT: "Overall Gross Pay" + gross pay
OUTPUT: "Deductions"
OUTPUT: "USC: Income Tax:" , uscTax , incomeTax
OUTPUT: "Total Deductions" + totalDeductions
OUTPUT: "Net Pay" + netPay

```

DATA DICTIONARY

Field Name	Data Type	Description
amountEarnedForBlackcurrant	double	Stores the value of amount earned for blackcurrant
amountEarnedForBlueberries	double	Stores the value of amount earned for blueberry
amountEarnedForRaspberries	double	Stores the value of amount earned for raspberry
amountEarnedForStrawberries	double	Stores the value of amount earned for strawberry
bonus	byte	Stores the value for €50 bonus
grossPay	double	Stores the value of gross pay
incomeTax	double	Stores the value of income tax
name	String	Stores Employee's name
netPay	double	Stores the value of the employee's net pay
numberOfBlackcurrant	int	Stores the number of blackcurrant
numberOfBlueberry	int	Stores the number of blueberry
numberOfRaspberry	int	Stores the number of raspberry
numberOfStrawberry	int	Stores the number of strawberry
overallGrossPay	double	Stores the value of the overall grosspay
payslipNum	int	Stores the randomly generated payslip number
ppsNumber	String	Stores Employee's PPS number
totalDeductions	double	Store the value of deductions
totalNumberOfFruits	int	Stores the value of total fruits picked
uscTax	double	Stores the value of USC tax

TEST DATA

Test	Strawberries	Amount earned	Blueberries	Amount earned	Raspberries	Amount earned	Blackcurrants	Amount earned	Total Units	Gross Pay	Bonus	Overall Gross	USC	Income Tax	Net Pay
Test1	1000	80	302	18.12	344	17.2	33	1.65	1679	116.97	50	166.97	0	0	166.97
Test2	1000	80	1000	60	1000	50	1000	50	4000	240	50	290	0	0	290
Test3	23478	1878.24	37386	2243.16	23478	1173.9	12345	617.25	96687	5,912.55	50	5962.55	298.1275	2385.02	3279.403
Test4	40	3.2	30	1.8	20	1	50	2.5	140	8.5	-	-	0	0	8.5

Test 1

This test shows a scenario where the employee is not taxed due to an overall gross pay less than €400

Pay slip:0389

Name: Hassan
PPS Number: 123456AD

Fruit Details

Strawberries:	1000	€80.00
Blueberries:	302	€18.12
Raspberries:	344	€17.20
Blackcurrants:	33	€1.65
		=====
Total Units Picked:	1679	
Gross Pay:		€116.97
Bonus Paid:		€50.00
Overall Gross Pay:		€166.97

Deductions

USC:€0.00	Income Tax:	€0.00
Total Deductions:		€0.00
Net Pay:		€166.97

Test 2

This test shows a scenario where the employee is not taxed due to an overall gross pay less than €400

Pay slip:0893

Name: Hassan
PPS Number: 123456AD

Fruit Details

Strawberries:	1000	€80.00
Blueberries:	1000	€60.00
Raspberries:	1000	€50.00
Blackcurrants:	1000	€50.00
		=====
Total Units Picked:	4000	
Gross Pay:		€240.00
Bonus Paid:		€50.00
Overall Gross Pay:		€290.00

Deductions

USC:€0.00	Income Tax:	€0.00
Total Deductions:		€0.00
Net Pay:		€290.00

Test 3

This test shows a scenario where the employee got bonus and is taxed USC and income Tax

		Pay slip:0869
Name:	Hassan	
PPS Number:	123456AD	
Fruit Details		
Strawberries:	23478	€1878.24
Blueberries:	37386	€2243.16
Raspberries:	23478	€1173.90
Blackcurrants:	12345	€617.25
		=====
Total Units Picked:	96687	
Gross Pay:		€5912.55
Bonus Paid:		€50.00
Overall Gross Pay:		€5962.55
Deductions		
USC:€298.13		Income Tax: €2385.02
Total Deductions:		€2683.15
Net Pay:		€3279.40

Test 4

This test shows a scenario where the employee picked less than 1500 fruits and is not eligible for bonus

		Pay slip:0458
Name:	Hassan	
PPS Number:	123456AD	
Fruit Details		
Strawberries:	40	€3.20
Blueberries:	30	€1.80
Raspberries:	20	€1.00
Blackcurrants:	50	€2.50
		=====
Total Units Picked:	140	
Gross Pay:		€8.50
Deductions		
USC:€0.00		Income Tax: €0.00
Total Deductions:		€0.00
Net Pay:		€8.50