

# **PRACTICUM REPORT**

Job sheet 4

Pseudocode dan Flowchart



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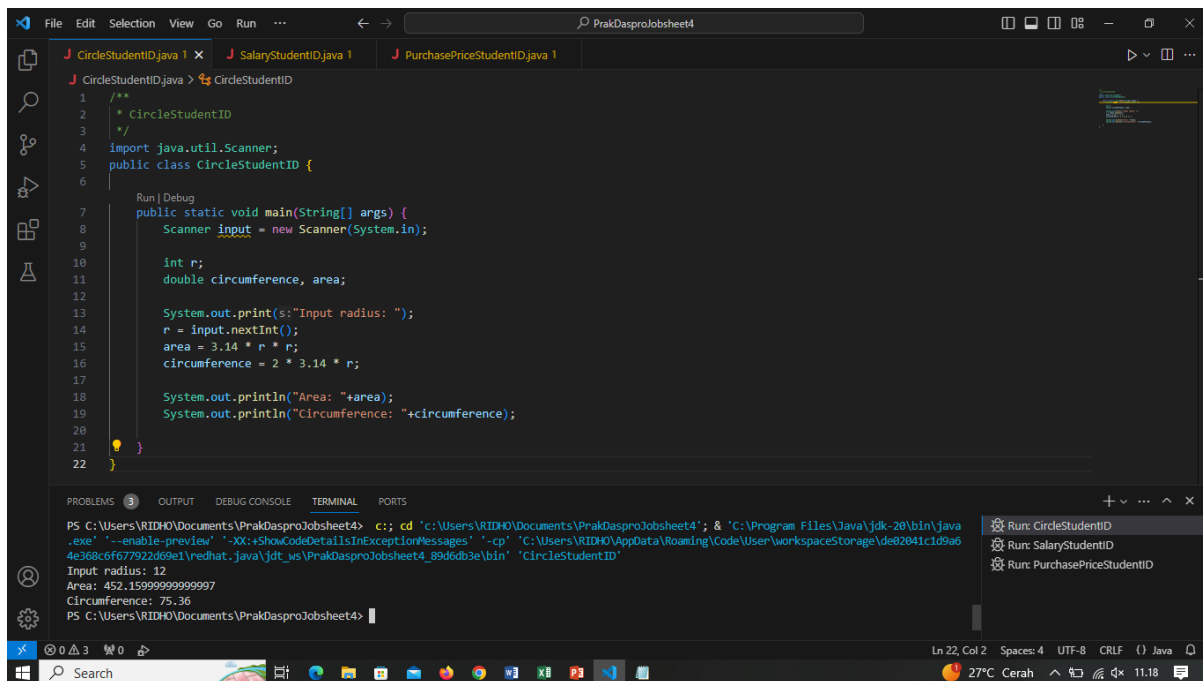
CLASS 1I (INTERNATIONAL)

INFORMATICS ENGINEERING  
INFORMATION TECHNOLOGY  
STATE POLYTECHNIC OF MALANG

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## Experiment 1 :



The screenshot shows an IDE with three tabs: CircleStudentID.java, SalaryStudentID.java, and PurchasePriceStudentID.java. The active tab is CircleStudentID.java, which contains the following code:

```
1  /**
2   * CircleStudentID
3   */
4  import java.util.Scanner;
5  public class CircleStudentID {
6
7      public static void main(String[] args) {
8          Scanner input = new Scanner(System.in);
9
10         int r;
11         double circumference, area;
12
13         System.out.print("Input radius: ");
14         r = input.nextInt();
15         area = 3.14 * r * r;
16         circumference = 2 * 3.14 * r;
17
18         System.out.println("Area: "+area);
19         System.out.println("Circumference: "+circumference);
20     }
21 }
22 }
```

The output console shows the following results:

```
Input radius: 12
Area: 452.15999999999997
Circumference: 75.36
PS C:\Users\RIDHO\Documents\PrakDasproJobsheet4>
```

### Questions

1. From experiment 1 above, modify the pseudocode by creating a new variable phi to store 3.14. And in the circumference and area calculation, replace 3.14 by using phi (use phi instead of 3.14 in the calculation).

Answer :

Algorithm: CircleStudentID

Declaration:

r : int

circumference, area, phi = 3.14 : double

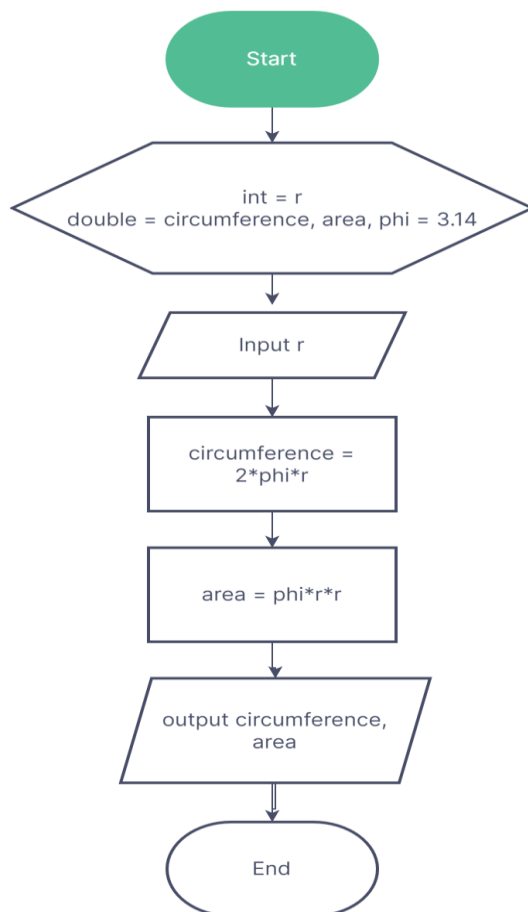
Description:

1. print "Input radius!"
2. read r
3. circumference = 2\*phi\*r
4. area = phi\*r\*r
5. print circumference
6. print area

```
J CircleStudentID.java 1 • J SalaryStudentID.java 1 J PurchasePriceStudentID.java 1 J ProjekAkhir.java 4, M •
J CircleStudentID.java > CircleStudentID
1  /**
2   * CircleStudentID
3   */
4   import java.util.Scanner;
5   public class CircleStudentID {
6
7       Run | Debug
8       public static void main(String[] args) {
9           Scanner input = new Scanner(System.in);
10
11           int r;
12           double circumference, area, phi = 3.14;
13
14           System.out.print(s:"Input radius: ");
15           r = input.nextInt();
16           area = phi * r * r;
17           circumference = 2 * phi * r;
18
19           System.out.println("Area: "+area);
20           System.out.println("Circumference: "+circumference);
21       }
22   }
```

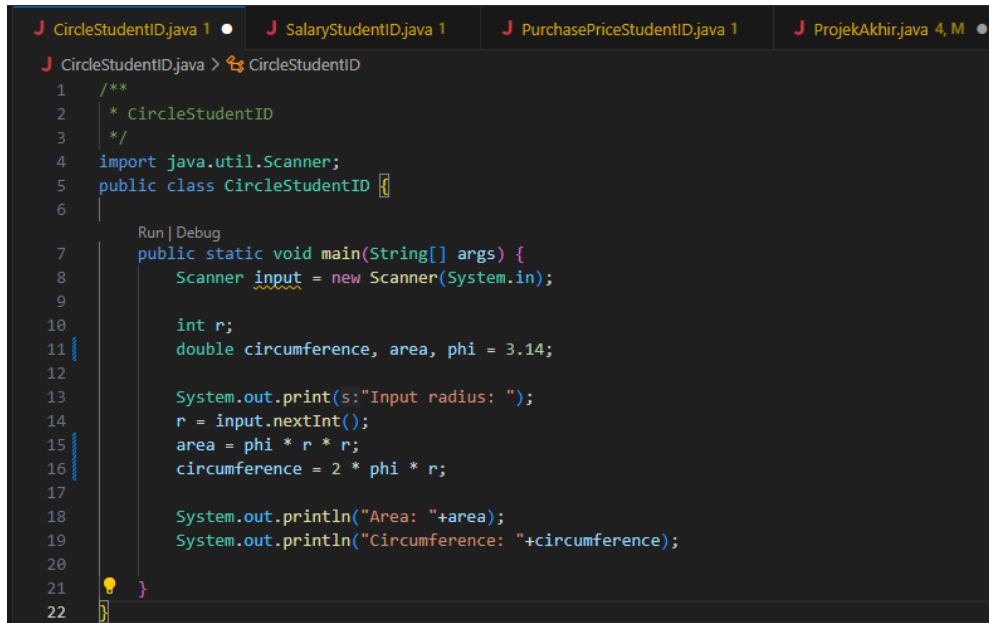
2. Create the flowchart from the modified pseudocode at question 1!

Answer :



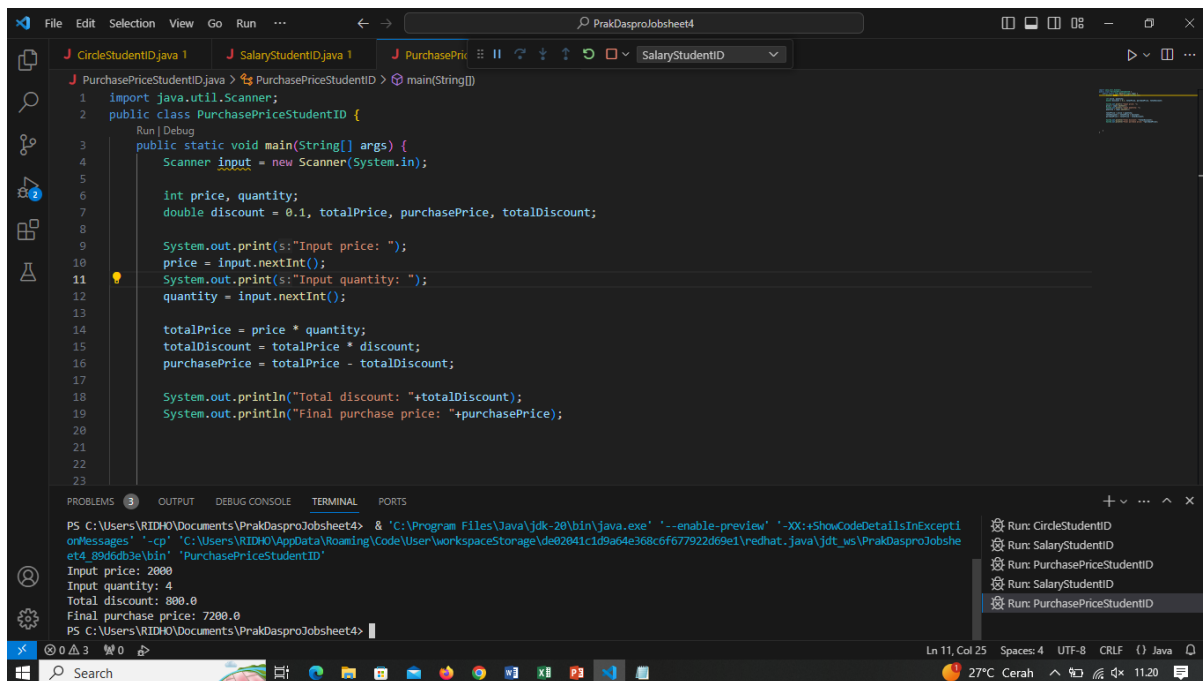
3. Implements the modified pseudocode/flowchart into a program (source code)!

Answer :

A screenshot of an IDE window titled 'CircleStudentID.java'. The code is as follows:

```
1  /**
2   * CircleStudentID
3   */
4  import java.util.Scanner;
5  public class CircleStudentID {
6
7      Run | Debug
8      public static void main(String[] args) {
9          Scanner input = new Scanner(System.in);
10
11          int r;
12          double circumference, area, phi = 3.14;
13
14          System.out.print(s:"Input radius: ");
15          r = input.nextInt();
16          area = phi * r * r;
17          circumference = 2 * phi * r;
18
19          System.out.println("Area: "+area);
20          System.out.println("Circumference: "+circumference);
21      }
22  }
```

## Experiment 2 :



The screenshot shows an IDE with a Java file named `PurchasePriceStudentID.java`. The code is as follows:

```
1 import java.util.Scanner;
2 public class PurchasePriceStudentID {
3     public static void main(String[] args) {
4         Scanner input = new Scanner(System.in);
5
6         int price, quantity;
7         double discount = 0.1, totalPrice, purchasePrice, totalDiscount;
8
9         System.out.print("Input price: ");
10        price = input.nextInt();
11        System.out.print("Input quantity: ");
12        quantity = input.nextInt();
13
14        totalPrice = price * quantity;
15        totalDiscount = totalPrice * discount;
16        purchasePrice = totalPrice - totalDiscount;
17
18        System.out.println("Total discount: "+totalDiscount);
19        System.out.println("Final purchase price: "+purchasePrice);
20    }
21 }
22
23
```

The output window shows the following execution results:

```
Input price: 2000
Input quantity: 4
Total discount: 800.0
Final purchase price: 7200.0
```

### Question!

1. Create a pseudocode based on the above flowchart and modify it by getting the salary and salaryDeduction from the user input!

Answer :

Algorithm : SalaryStudentID

Declaration :

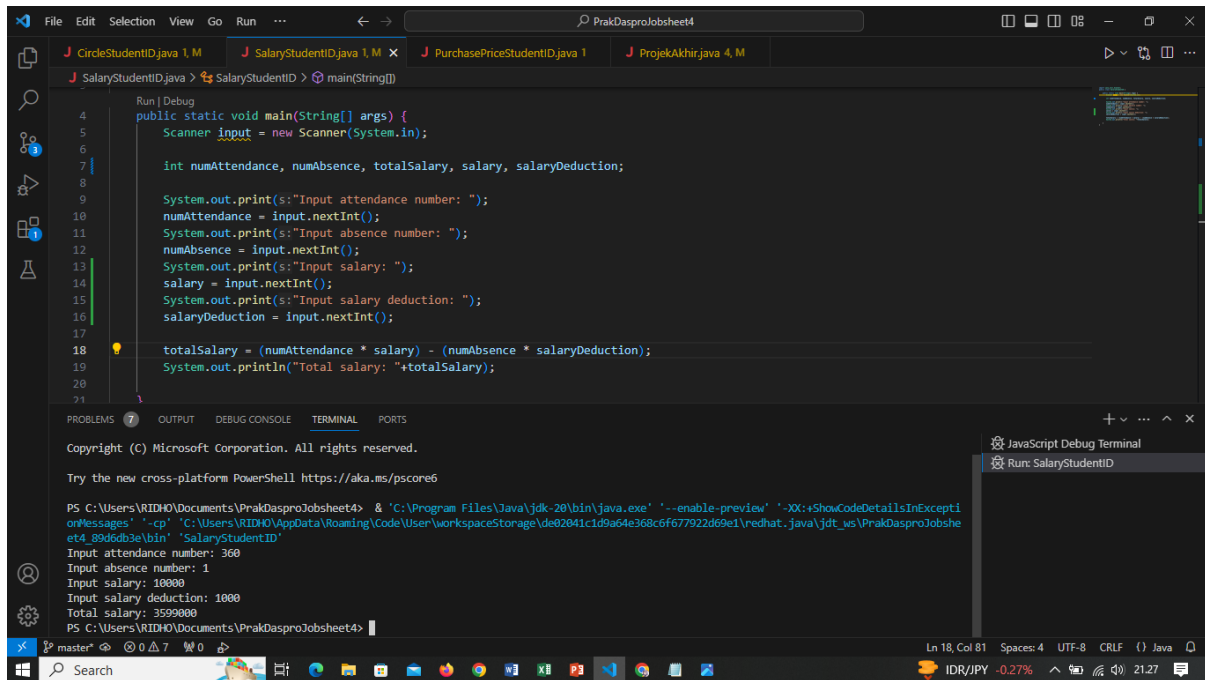
numAttendance, numAbsence, totalSalary, salary, salaryDeduction : int

Description :

1. print "Input attendance number: "
2. read numAttendance
3. print "Input absence number: "
4. read numAbsence
5. print "Input salary: "
6. read salary
7. print "Input salary deduction: "
8. read salaryDeduction
9.  $totalSalary = (numAttendance * salary) - (numAbsence * salaryDeduction)$
10. print "Total salary: "+totalSalary

2. Implement the modified pseudocode in the above question, into a java program!

Answer :



The screenshot shows an IDE with a Java file named 'SalaryStudentID.java'. The code implements a program that takes attendance and absence numbers as input, calculates the total salary based on a fixed rate of 10000 per attendance and a deduction of 1000 per absence, and prints the result. The terminal window shows the execution of the program with sample inputs and the resulting output.

```
public static void main(String[] args) {
    Scanner input = new Scanner(System.in);

    int numAttendance, numAbsence, totalSalary, salary, salaryDeduction;

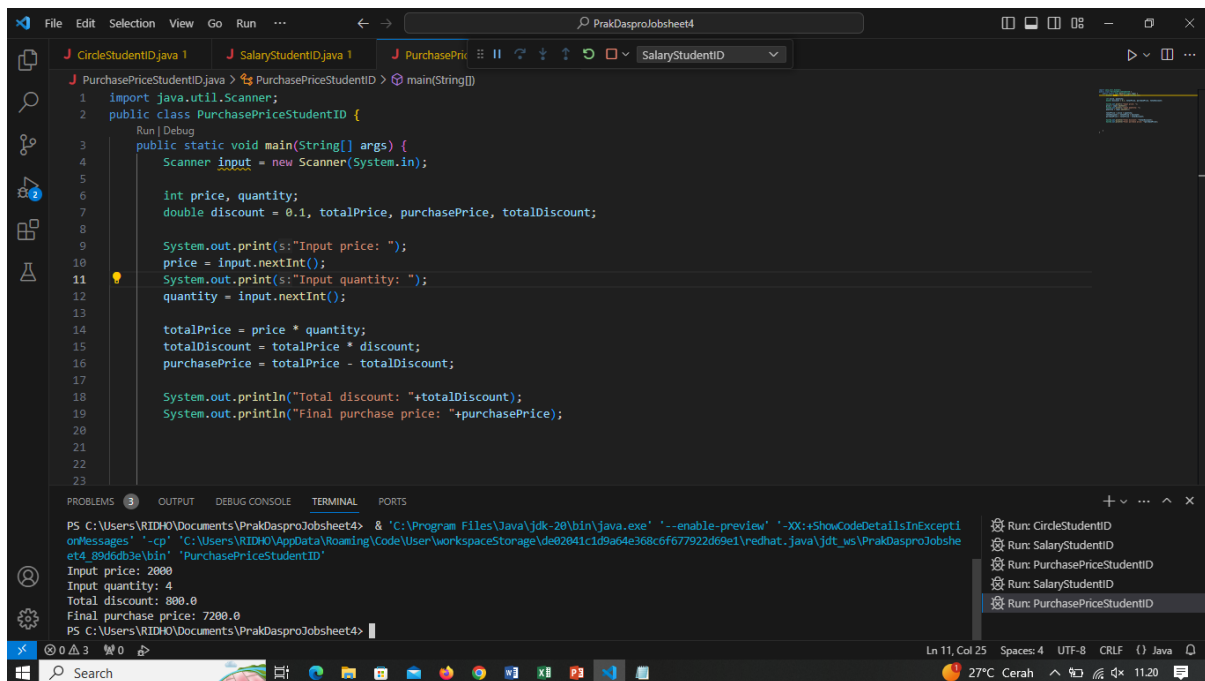
    System.out.print(s:"Input attendance number: ");
    numAttendance = input.nextInt();
    System.out.print(s:"Input absence number: ");
    numAbsence = input.nextInt();
    System.out.print(s:"Input salary: ");
    salary = input.nextInt();
    System.out.print(s:"Input salary deduction: ");
    salaryDeduction = input.nextInt();

    totalSalary = (numAttendance * salary) - (numAbsence * salaryDeduction);
    System.out.println("Total salary: "+totalSalary);
}
```

Terminal Output:

```
PS C:\Users\RIDHO\Documents\PrakDasproJobsheet4> & 'C:\Program Files\Java\jdk-20\bin\java.exe' '-enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\RIDHO\AppData\Roaming\Code\User\workspaceStorage\de02041c1d9a64e368c6f677922d69e1\redhat\.java\jdt_ws\PrakDasproJobsheet4_89d6db3e\bin' 'SalaryStudentID'
Input attendance number: 360
Input absence number: 1
Input salary: 10000
Input salary deduction: 1000
Total salary: 3599000
PS C:\Users\RIDHO\Documents\PrakDasproJobsheet4>
```

## Experiment 3 :



The screenshot shows an IDE with a Java file named `PurchasePriceStudentID.java`. The code is as follows:

```
1 import java.util.Scanner;
2 public class PurchasePriceStudentID {
3     public static void main(String[] args) {
4         Scanner input = new Scanner(System.in);
5
6         int price, quantity;
7         double discount = 0.1, totalPrice, purchasePrice, totalDiscount;
8
9         System.out.print("Input price: ");
10        price = input.nextInt();
11        System.out.print("Input quantity: ");
12        quantity = input.nextInt();
13
14        totalPrice = price * quantity;
15        totalDiscount = totalPrice * discount;
16        purchasePrice = totalPrice - totalDiscount;
17
18        System.out.println("Total discount: "+totalDiscount);
19        System.out.println("Final purchase price: "+purchasePrice);
20    }
21 }
22
23
```

The output window shows the following results:

```
Input price: 2000
Input quantity: 4
Total discount: 800.0
Final purchase price: 7200.0
```

Question!

1. Modify the pseudocode and flowchart above by adding user input for bookBrand and pageCount, then change the discount to get the user input as well!

Answer :

Algorithm : NotebooksPurchasePriceStudentID

Declaration :

price, quantity, pageCount : int

bookBrand : String

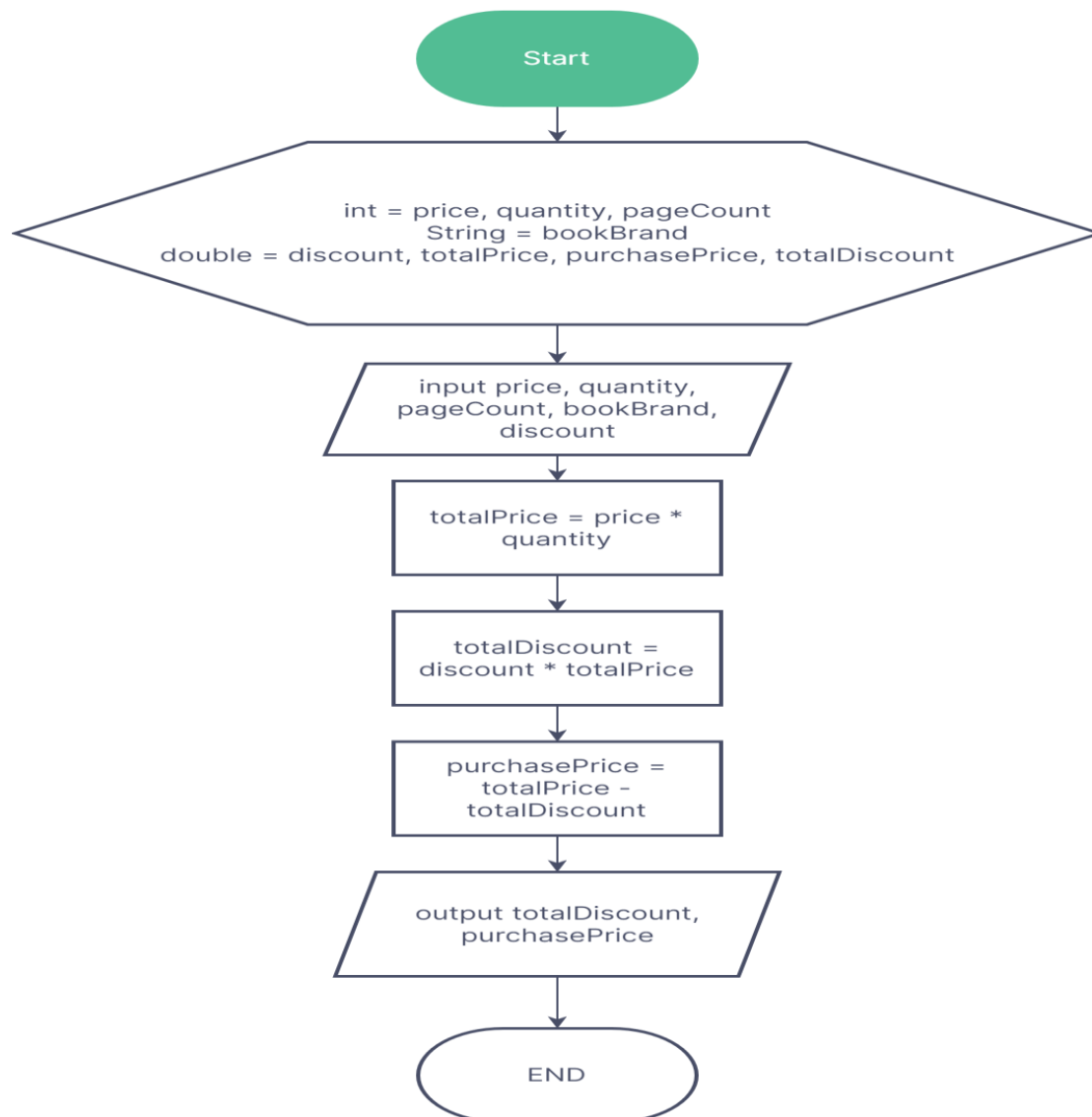
discount, totalPrice, purchasePrice, totalDiscount : double

Description :

1. print "Input price!"
2. read price
3. print "Input quantity!"
4. read quantity
5. print "Input page count!"
6. read pageCount
7. print "Input book brand!"

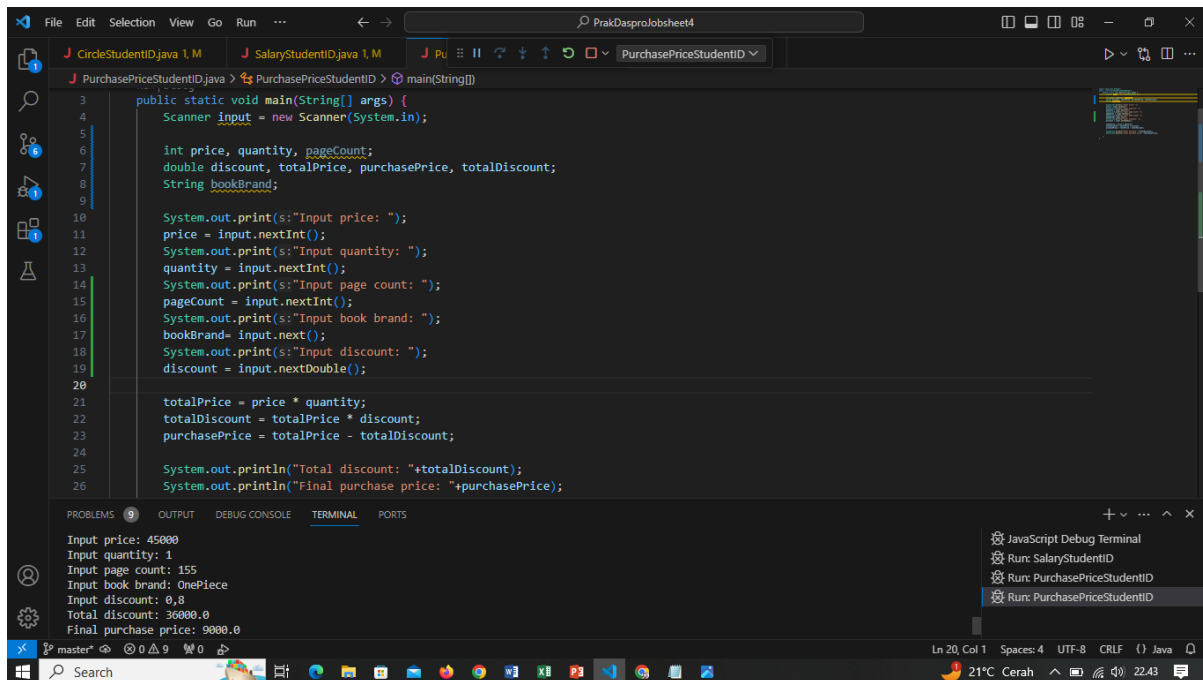


8. read bookBrand
9. print "Input discount!"
10. read discount
11.  $\text{totalPrice} = \text{price} * \text{quantity}$
12.  $\text{totalDiscount} = \text{totalPrice} * \text{discount}$
13.  $\text{purchasePrice} = \text{totalPrice} - \text{totalDiscount}$
14. print "The total discount is "
15. print totalDiscount
16. print "The Purchase Price is "
17. print purchasePrice



## 2. Implement the changes in a program!

Answer :



The screenshot shows an IDE with a Java file named `PurchasePriceStudentID.java`. The code implements a program that takes user input for price, quantity, page count, book brand, and discount, then calculates the total price, total discount, and final purchase price.

```
public static void main(String[] args) {  
    Scanner input = new Scanner(System.in);  
  
    int price, quantity, pageCount;  
    double discount, totalPrice, purchasePrice, totalDiscount;  
    String bookBrand;  
  
    System.out.print(s:"Input price: ");  
    price = input.nextInt();  
    System.out.print(s:"Input quantity: ");  
    quantity = input.nextInt();  
    System.out.print(s:"Input page count: ");  
    pageCount = input.nextInt();  
    System.out.print(s:"Input book brand: ");  
    bookBrand= input.next();  
    System.out.print(s:"Input discount: ");  
    discount = input.nextDouble();  
  
    totalPrice = price * quantity;  
    totalDiscount = totalPrice * discount;  
    purchasePrice = totalPrice - totalDiscount;  
  
    System.out.println("Total discount: "+totalDiscount);  
    System.out.println("Final purchase price: "+purchasePrice);  
}
```

The terminal output shows the following input and results:

```
Input price: 45000  
Input quantity: 1  
Input page count: 155  
Input book brand: OnePiece  
Input discount: 0.8  
Total discount: 36000.0  
Final purchase price: 9000.0
```

### **Assignment :**

1. Create pseudocode based on your group project. The pseudocode that you create can be identified from the processes (it could be input, output and arithmetic process etc.)!

Answer :

Algorithm: Loan System

Declaration:

name, yes : String

interest, remainingBalance, monthlyInterest, monthlyInstallments, loanAmount : double

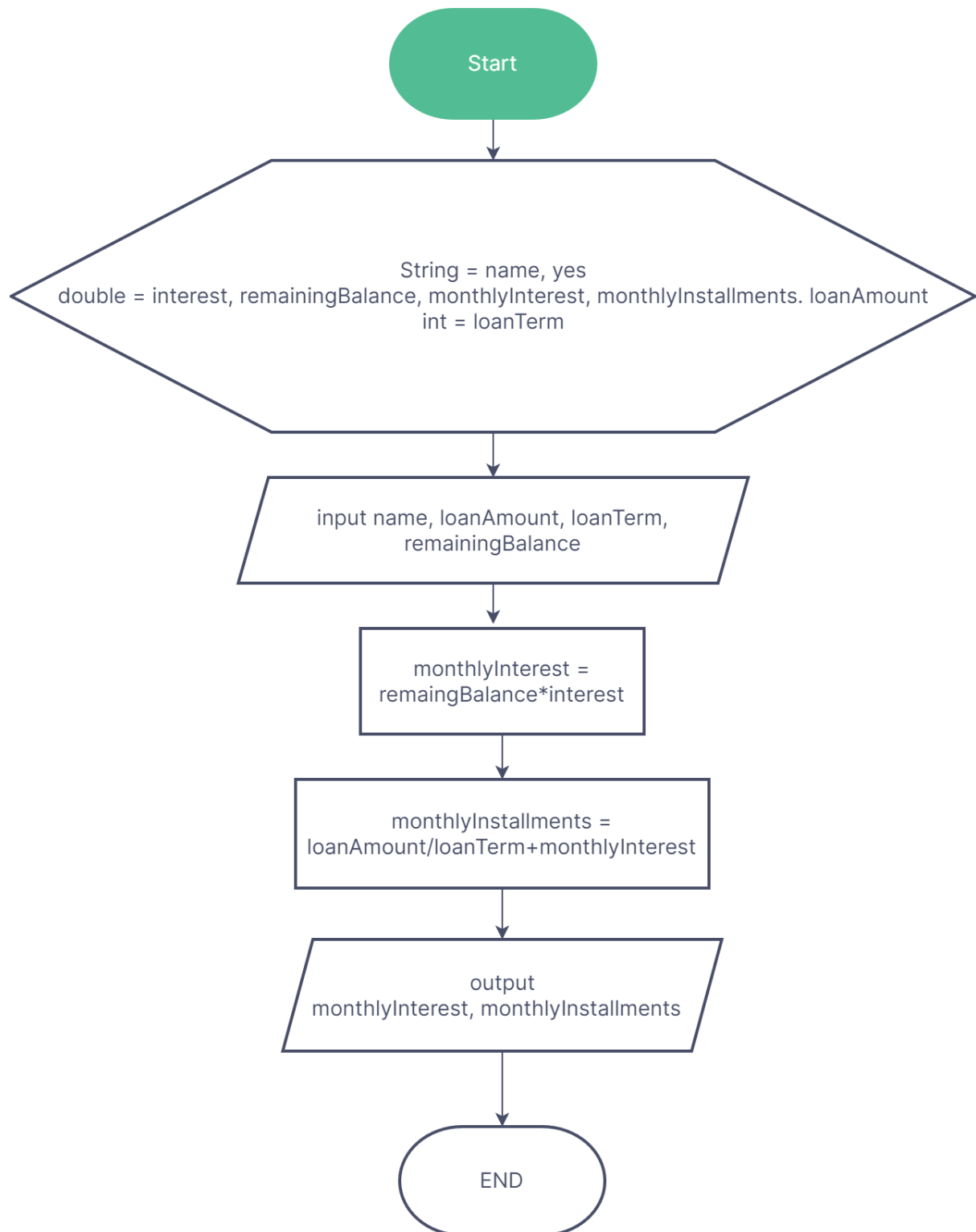
loanTerm : int

Description:

1. print "##### W E L C O M E to K R E D I T B A N K #####"
2. print "Enter Full Name: "
3. read name
4. print "How much is your loan?: Rp."
5. read loanAmount
6. print "How many months is the payback time?: "
7. read loanTerm
8. print "Your balance amount: Rp."
9. read remainingBalance
10.  $\text{monthlyInterest} = \text{remainingBalance} * \text{interest}$
11. print "Your monthly interest: Rp."+monthlyInterest
12.  $\text{monthlyInstallments} = \text{loanAmount} / \text{loanTerm} + \text{monthlyInterest}$
13. print "Your monthly installment: Rp."
14. print "Would you be willing to pay? "
15. read yes
16. print "\t LOAN REQUEST HAS BEEN APPROVED"
17. print "\t##### T H A N K Y O U #####"

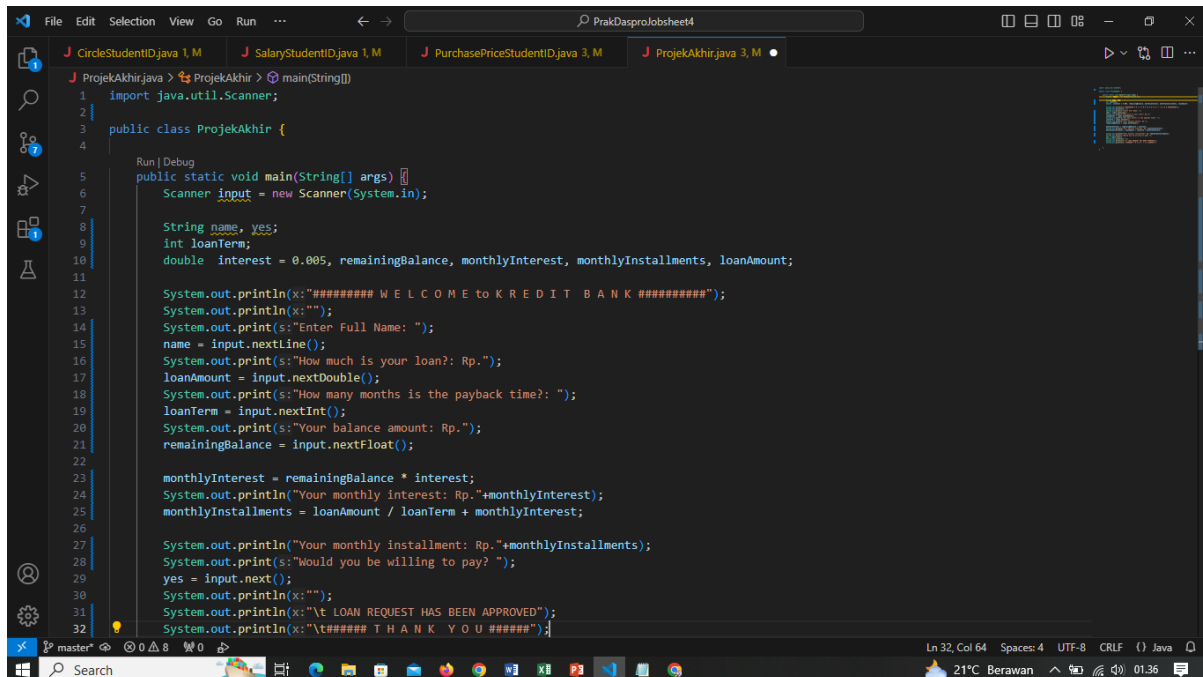
2. From the answer to question 1, please create the flowchart for each pseudocode that is already created!

Answer :



3. Implement the pseudocode/flowchart into a program. Please make a note that the program will only include input, output, variable declarations, arithmetic operation (and any other operator). Since we haven't reached condition selection, looping, method, array, then you do not have to use it right now.

Answer :



```
File Edit Selection View Go Run ...
PrakDasprolobsheet4

J CircleStudentID.java 1, M
J SalaryStudentID.java 1, M
J PurchasePriceStudentID.java 3, M
J ProjekAkhir.java 3, M

ProjekAkhir.java > ProjekAkhir > main(String[])
1 import java.util.Scanner;
2
3 public class ProjekAkhir {
4
5     Run | Debug
6     public static void main(String[] args) {
7         Scanner input = new Scanner(System.in);
8
9         String name, yes;
10        int loanTerm;
11        double interest = 0.005, remainingBalance, monthlyInterest, monthlyInstallments, loanAmount;
12
13        System.out.println(x:"##### WELCOME to KREDIT BANK #####");
14        System.out.println(x:"");
15        System.out.print(s:"Enter Full Name: ");
16        name = input.nextLine();
17        System.out.print(s:"How much is your loan?: Rp.");
18        loanAmount = input.nextDouble();
19        System.out.print(s:"How many months is the payback time?: ");
20        loanTerm = input.nextInt();
21        System.out.print(s:"Your balance amount: Rp.");
22        remainingBalance = input.nextFloat();
23
24        monthlyInterest = remainingBalance * interest;
25        System.out.println("Your monthly interest: Rp."+monthlyInterest);
26        monthlyInstallments = loanAmount / loanTerm + monthlyInterest;
27
28        System.out.println("Your monthly installment: Rp."+monthlyInstallments);
29        System.out.print(s:"Would you be willing to pay? ");
30        yes = input.next();
31        System.out.println(x:"");
32        System.out.println(x:"\t LOAN REQUEST HAS BEEN APPROVED");
33        System.out.println(x:"\t##### T H A N K Y O U #####");
34    }
35}
```

Ln 32, Col 64 Spaces: 4 UTF-8 CRLF {} Java

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