



JAVA Textbook

Chapter 3

Writing Structured Java Programs

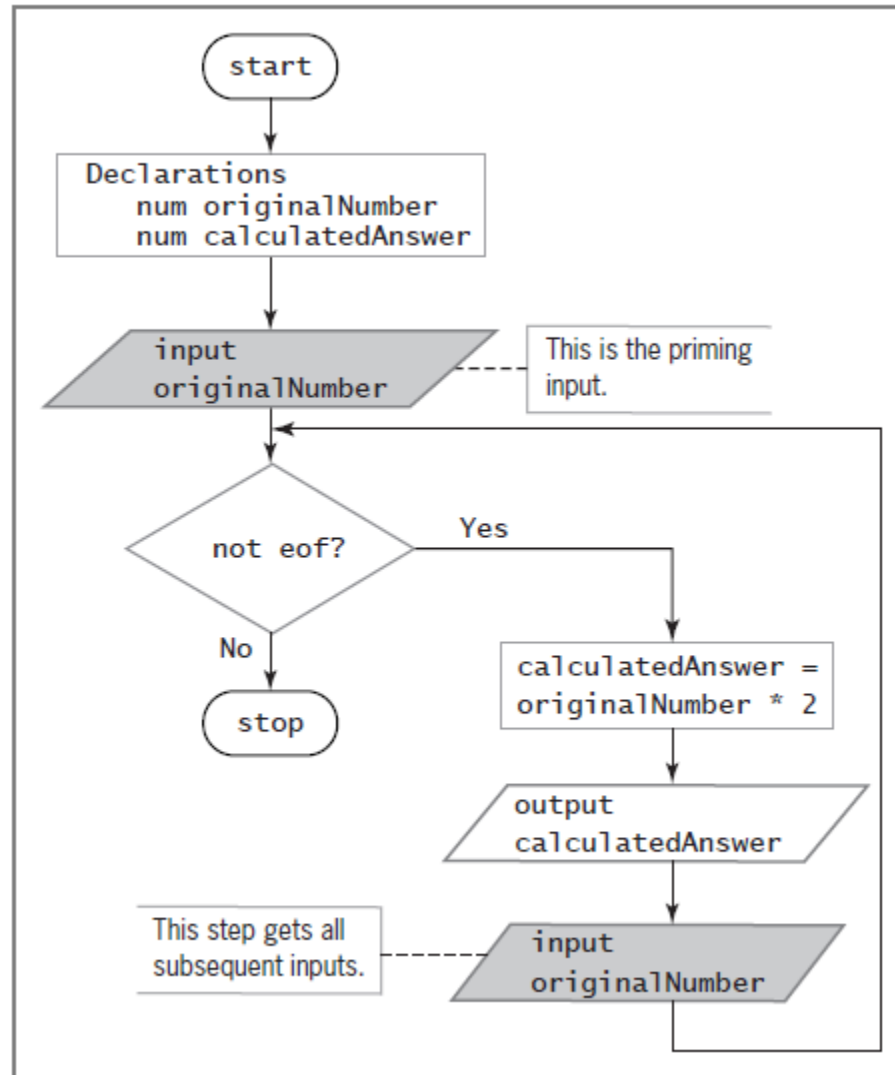


Objectives

In this chapter, you will learn about:

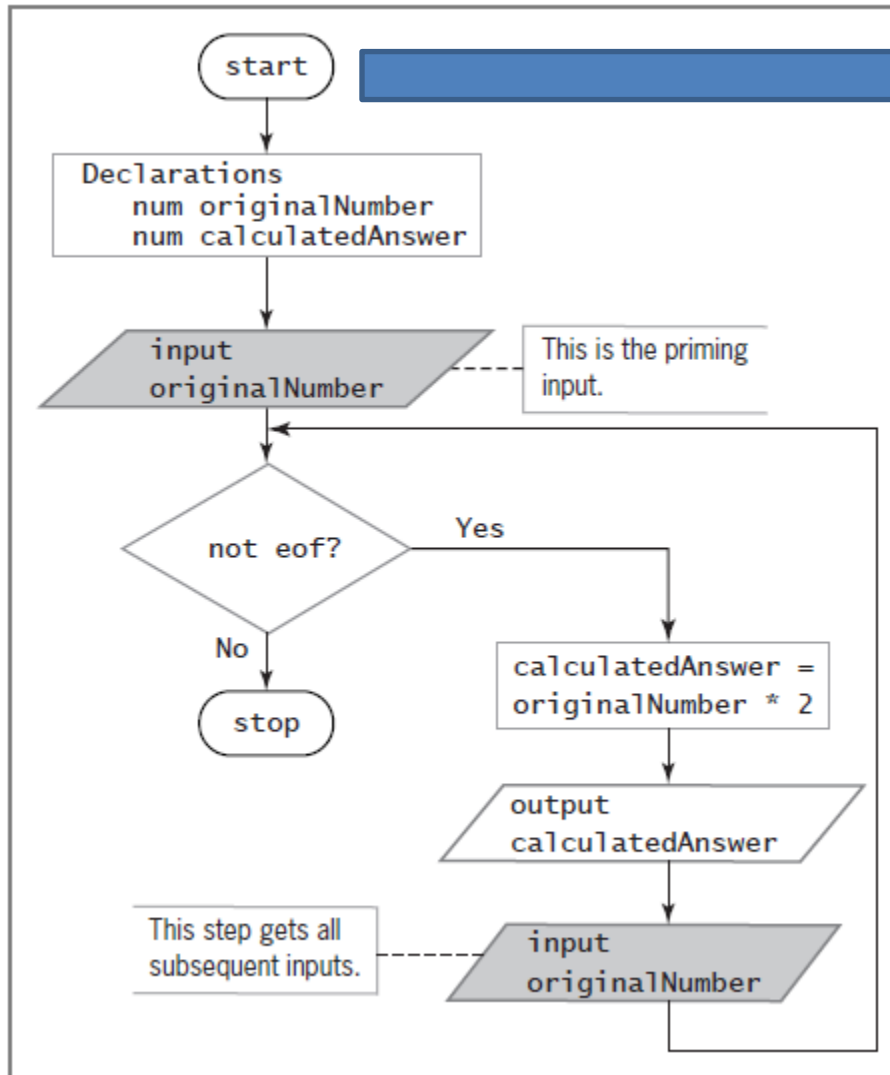
- Use structured flow charts and pseudocode to write structured Java programs
- Write simple modular programs in Java

From Flowcharts/Pseudocode to Java



Example: Number-doubling program

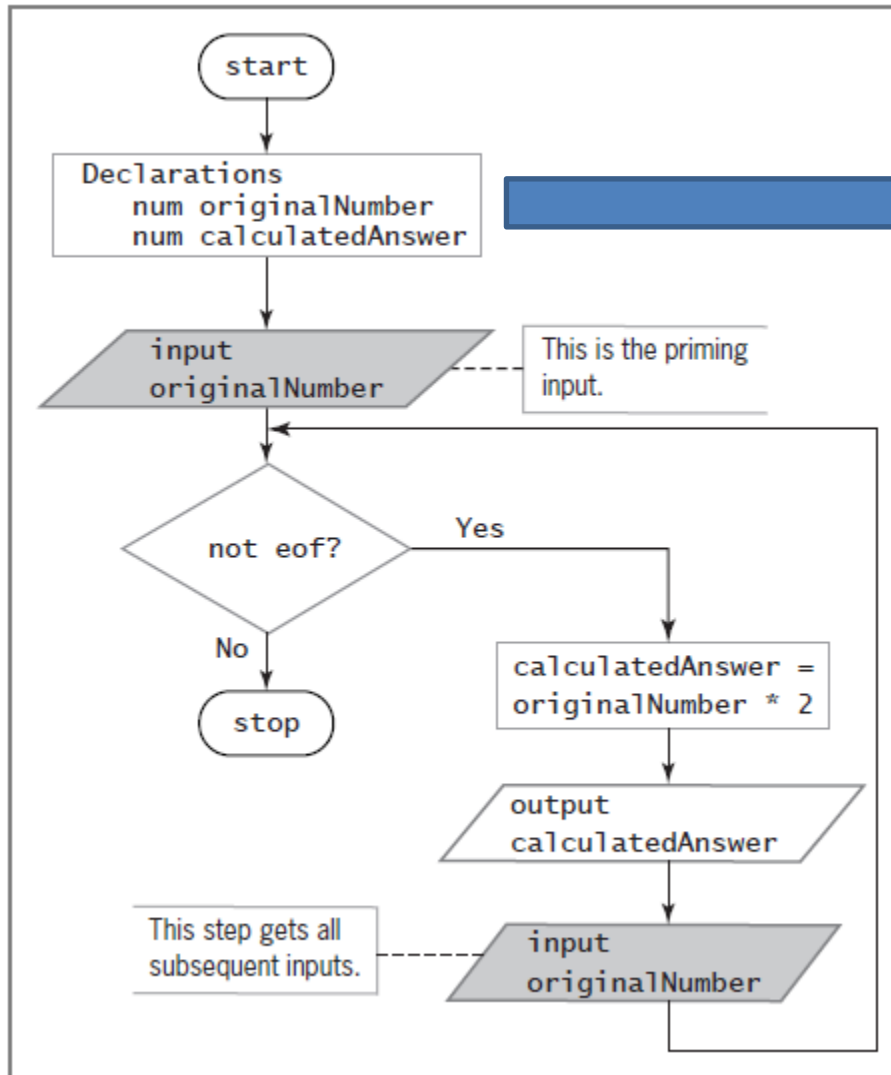
From Flowcharts/Pseudocode to Java



```
public class NumberDouble
{
    public static void main(String args[])
    {
    }
}
```

Example: Number-doubling program

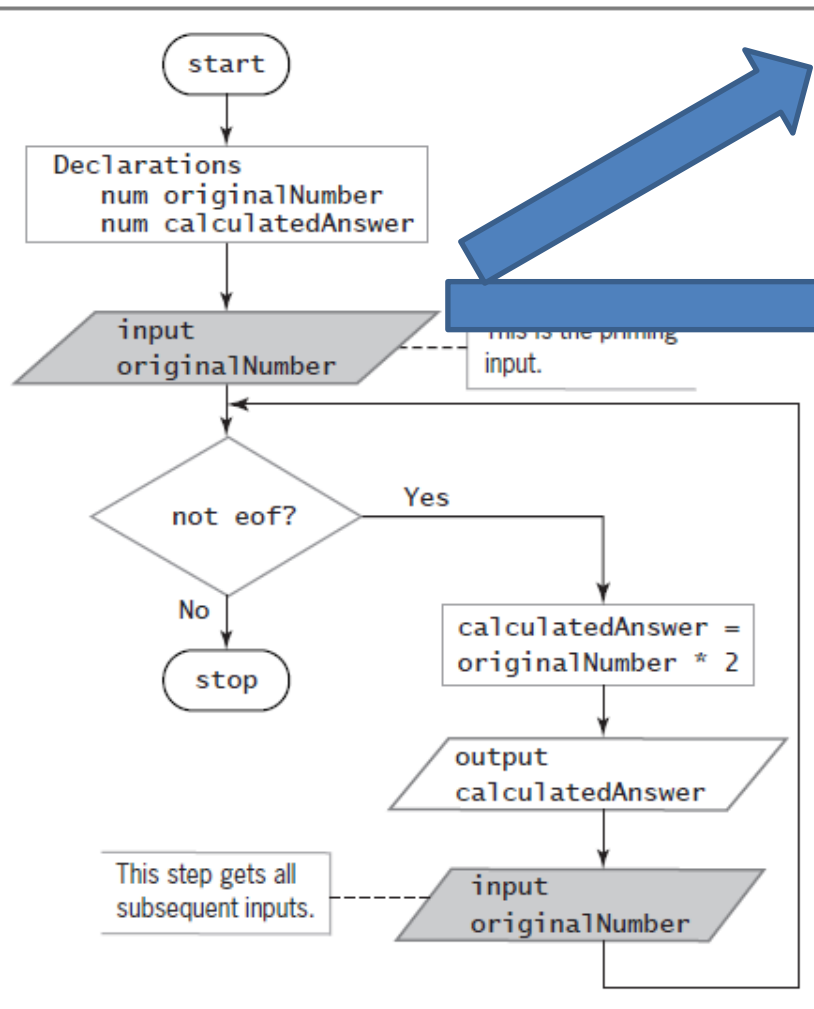
From Flowcharts/Pseudocode to Java



```
public class NumberDouble
{
    public static void main(String args[])
    {
        int originalNumber;
        int calculatedAnswer;
    }
}
```

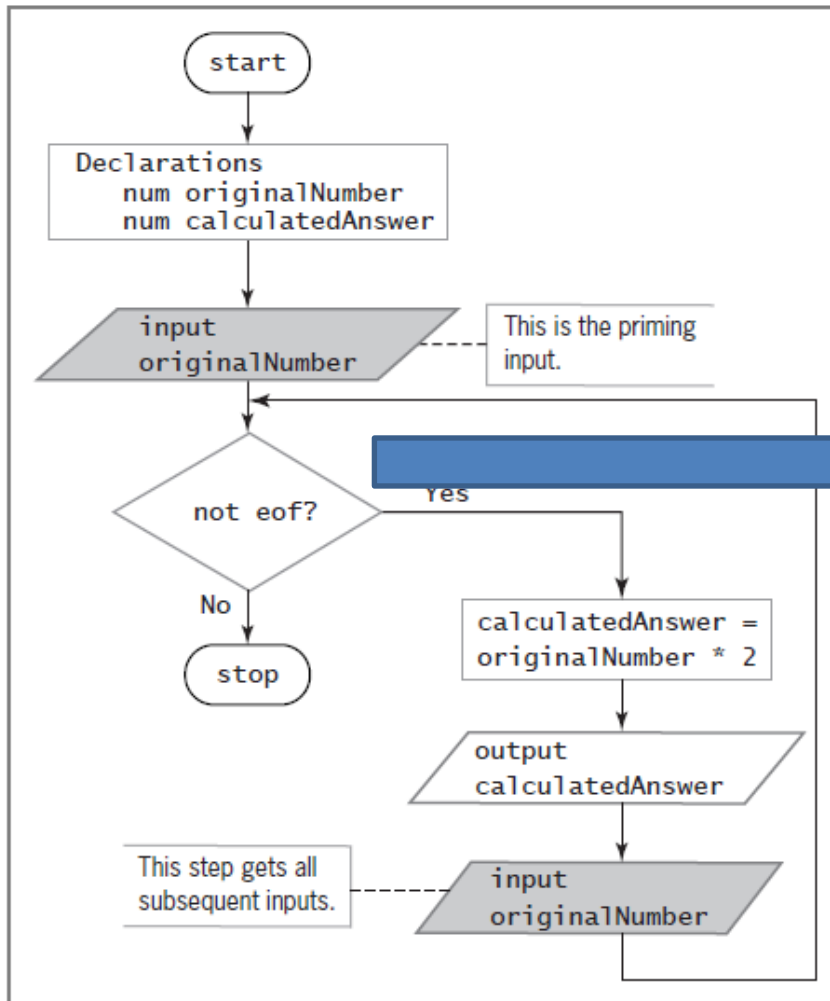
Example: Number-doubling program

From Flowcharts/Pseudocode to Java



```
import javax.swing.JOptionPane;
public class NumberDouble
{
    public static void main(String args[])
    {
        int originalNumber;
        String originalNumberString;
        int calculatedAnswer;
        originalNumberString = JOptionPane.showInputDialog(
            "Enter number to double:");
        originalNumber = Integer.parseInt(originalNumberString);
    }
}
```

From Flowcharts/Pseudocode to Java

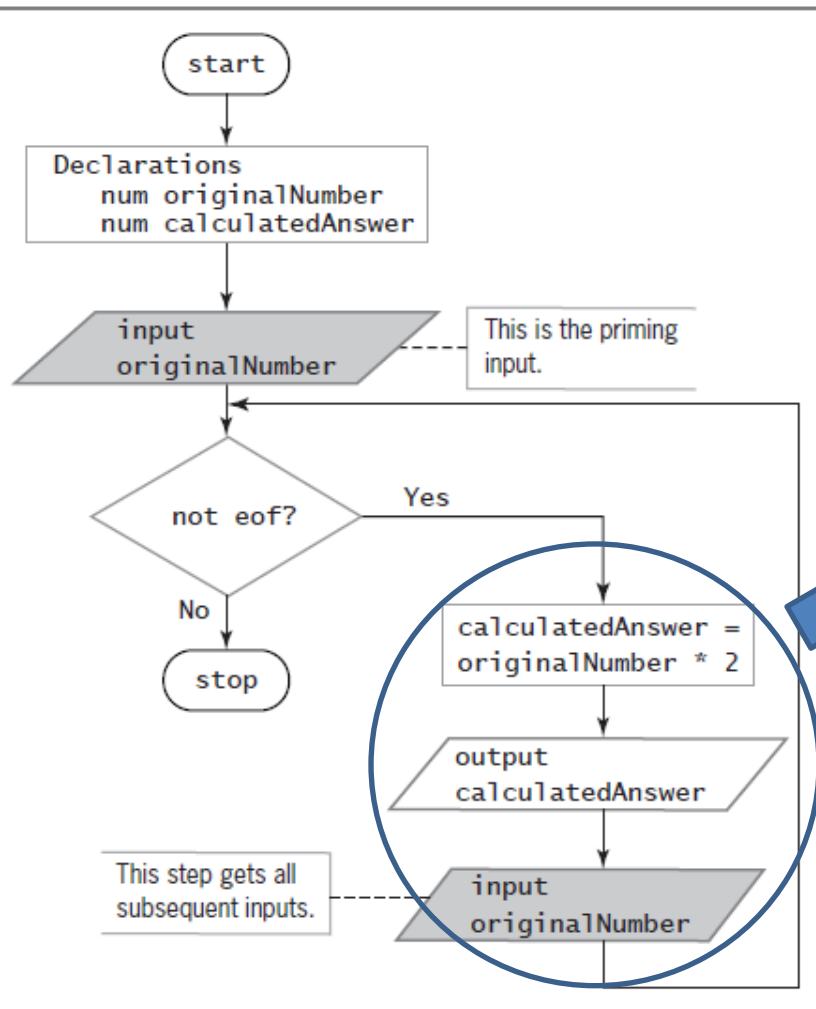


```
import javax.swing.JOptionPane;
public class NumberDouble
{
    public static void main(String args[])
    {
        int originalNumber;
        String originalNumberString;
        int calculatedAnswer;
        originalNumberString = JOptionPane.showInputDialog(
            "Enter number to double or 0 to end: ");
        originalNumber = Integer.parseInt(originalNumberString);

        while(originalNumber != 0)
        {
        }
    }
}
```

Example: Number-doubling program

From Flowcharts/Pseudocode to Java



```
import javax.swing.JOptionPane;
public class NumberDouble
{
    public static void main(String args[])
    {
        int originalNumber;
        String originalNumberString;
        int calculatedAnswer;
        originalNumberString = JOptionPane.showInputDialog(
            "Enter number to double or 0 to end: ");
        originalNumber = Integer.parseInt(originalNumberString);
        while(originalNumber != 0)
        {
            calculatedAnswer = originalNumber * 2;
            System.out.println(originalNumber + " doubled is "
                + calculatedAnswer);
            originalNumberString = JOptionPane.showInputDialog(
                "Enter number to double or 0 to end: ");
            originalNumber = Integer.parseInt(originalNumberString);
        }
    }
}
```

Example: Number-doubling program

From Flowcharts/Pseudocode to Java

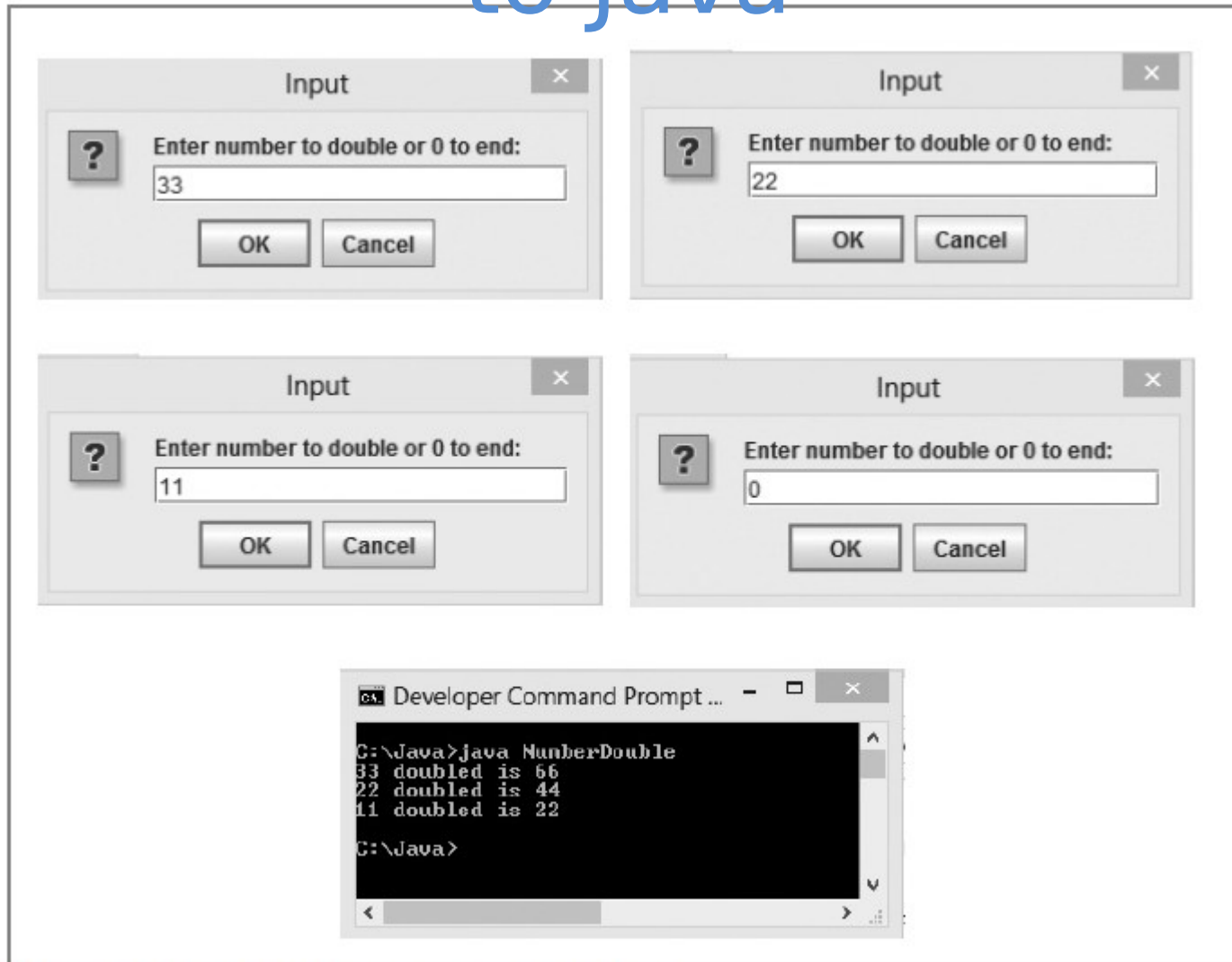
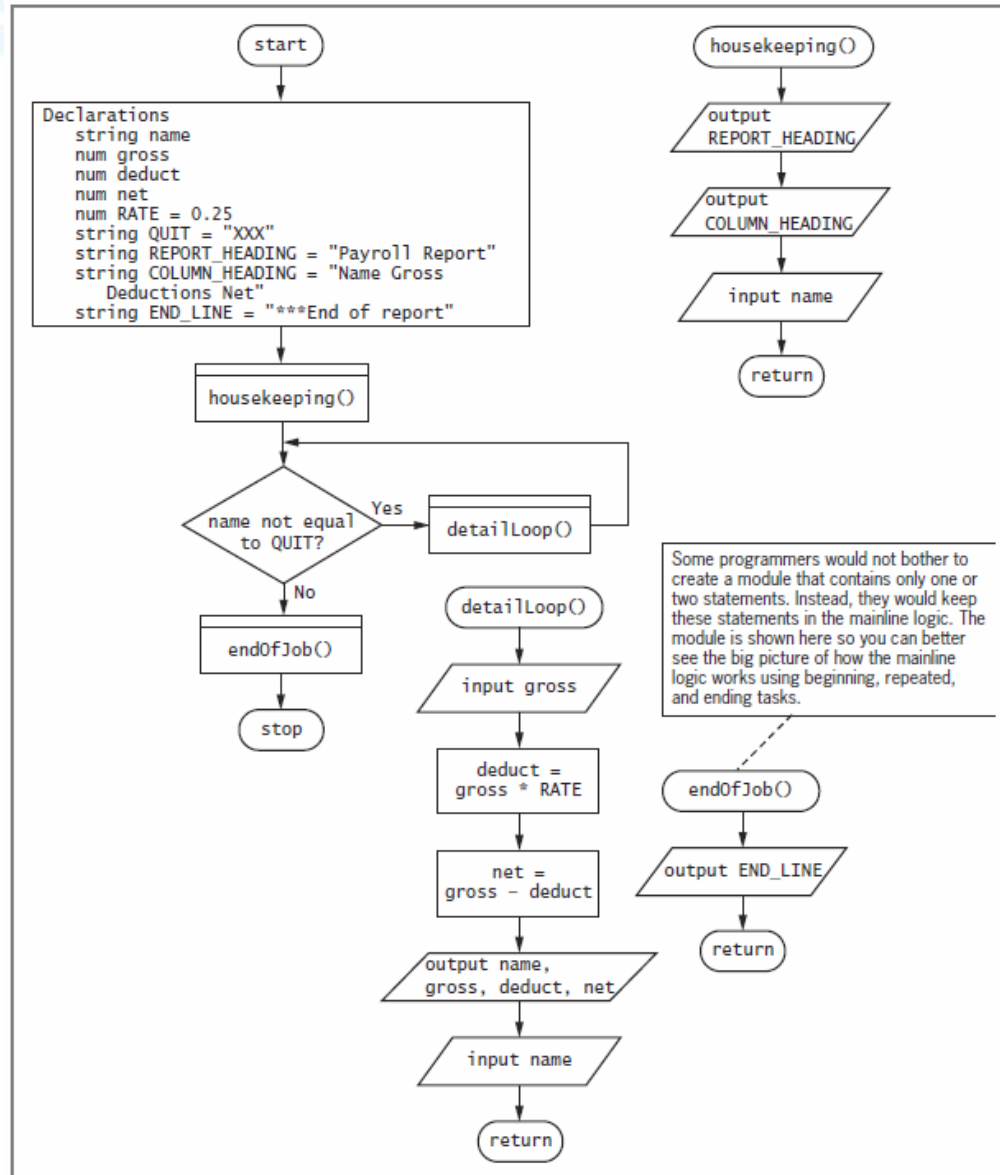


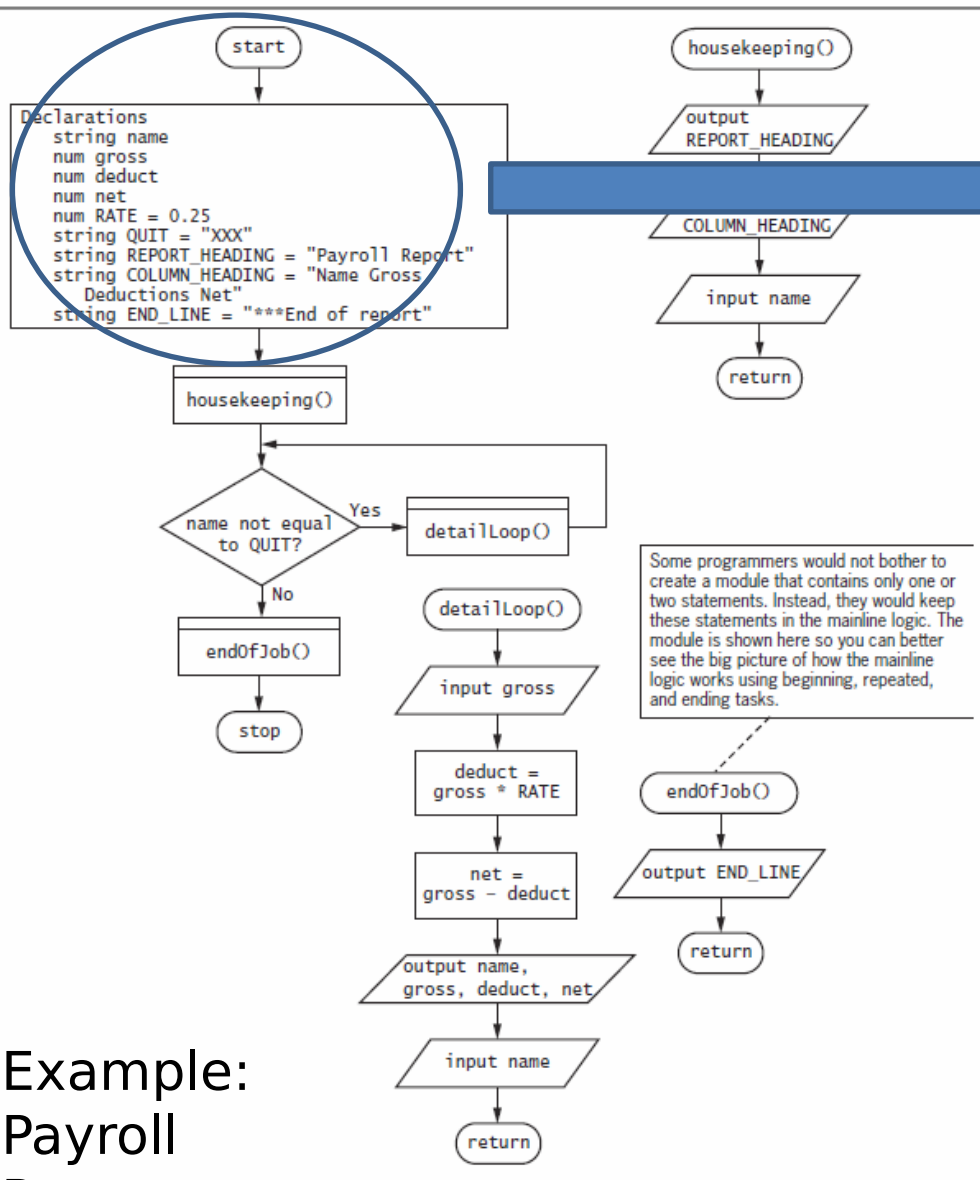
Figure 3-2 Number Double program input and output.

Writing Simple Modular Program in Java



Example:
Payroll
Report

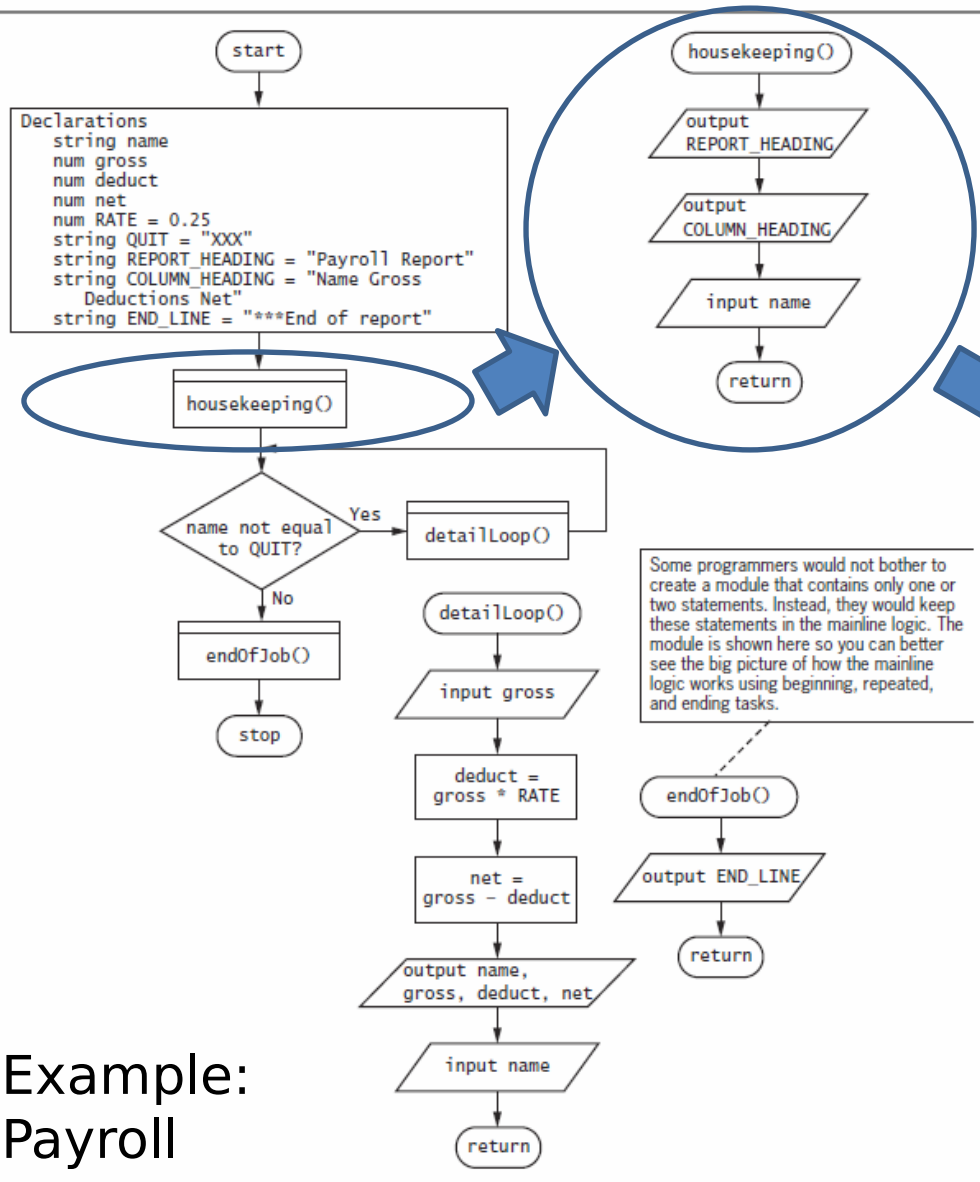
Writing Simple Modular Program in Java



```

import javax.swing.JOptionPane;
public class PayrollReport
{
    public static void main(String args[])
    {
        String name;
        String grossString;
        double gross, deduct, net;
        final double RATE = 0.25;
        final String QUIT = "XXX";
        final String REPORT_HEADING = "Payroll Report";
        final String END_LINE = "***End of report";
    }
}
    
```

Writing Simple Modular Program in Java



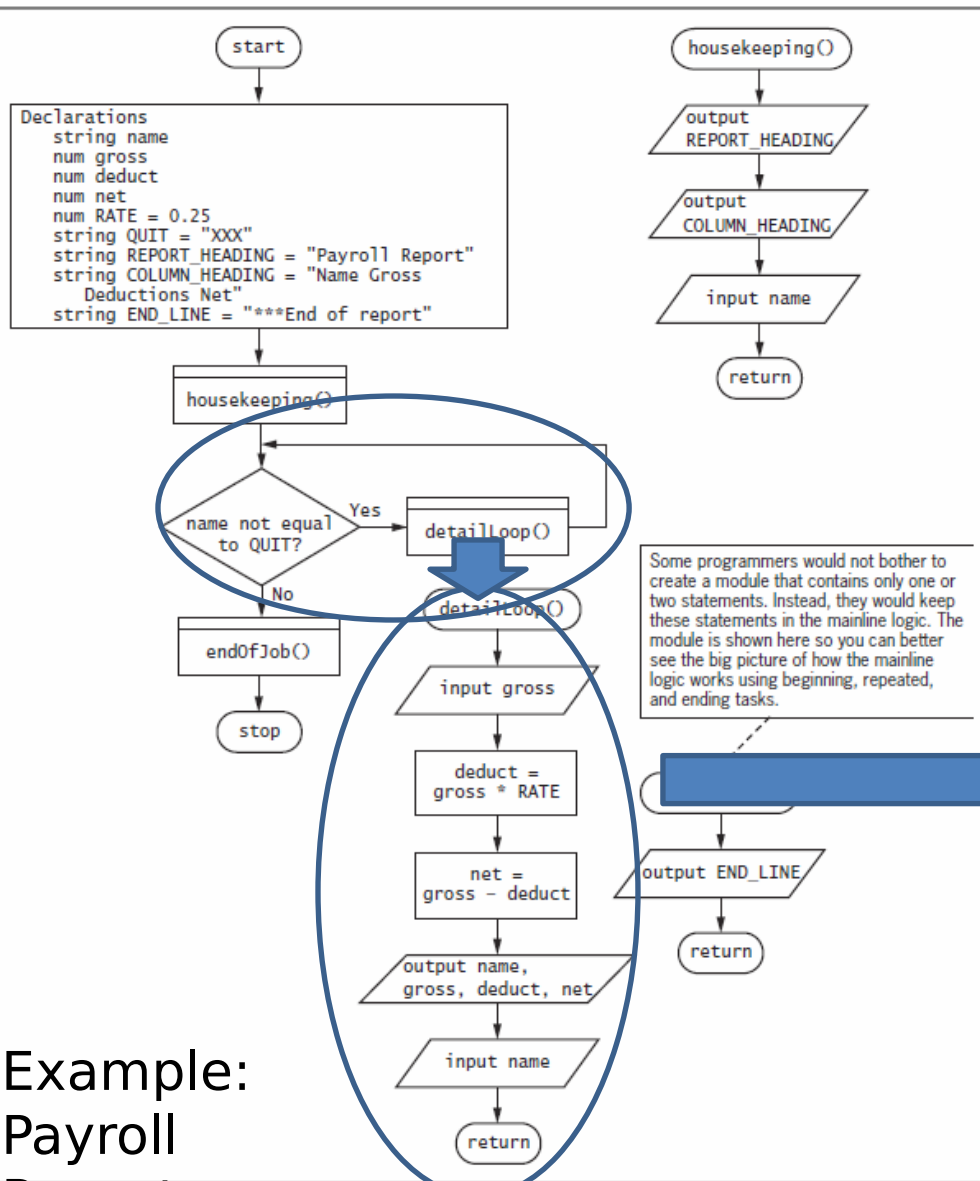
```

import javax.swing.JOptionPane;
public class PayrollReport
{
    public static void main(String args[])
    {
        String name;
        String grossString;
        double gross, deduct, net;
        final double RATE = 0.25;
        final String QUIT = "XXX";
        final String REPORT_HEADING = "Payroll Report";
        final String END_LINE = "***End of report";
        // This is the work done in the housekeeping() method
        System.out.println(REPORT_HEADING);
        name = JOptionPane.showInputDialog(
            "Enter employee's name: ");
    }
}
  
```

Example:
Payroll
Report

Writing Simple Modular Program in Java

Level 2



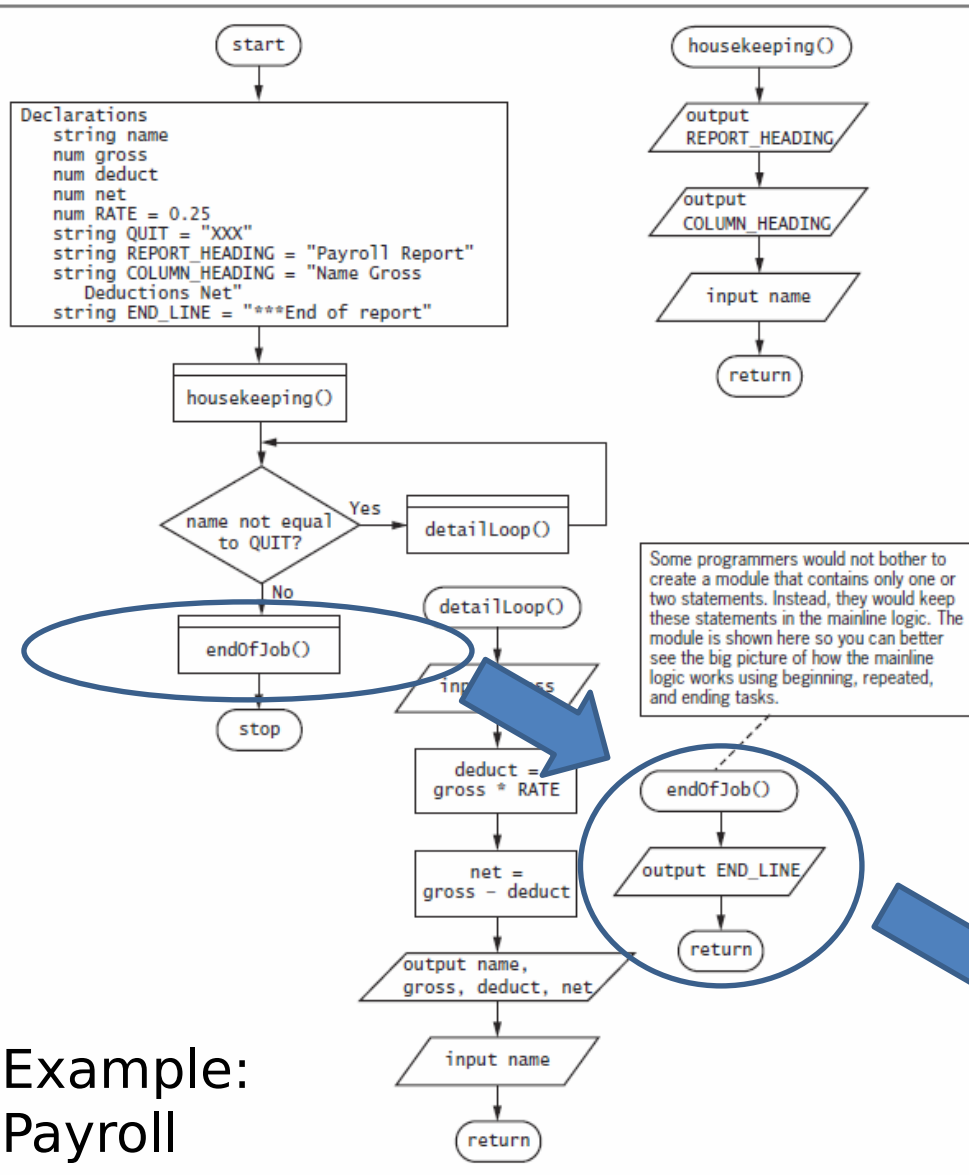
```

import javax.swing.JOptionPane;
public class PayrollReport
{
    public static void main(String args[])
    {
        String name;
        String grossString;
        double gross, deduct, net;
        final double RATE = 0.25;
        final String QUIT = "XXX";
        final String REPORT_HEADING = "Payroll Report";
        final String END_LINE = "***End of report";
        // This is the work done in the housekeeping() method
        System.out.println(REPORT_HEADING);
        name = JOptionPane.showInputDialog(
            "Enter employee's name: ");

        while(name.compareTo(QUIT) != 0)
        {
            // This is the work done in the detailLoop() method
            grossString = JOptionPane.showInputDialog(
                "Enter employee's gross pay: ");
            gross = Double.parseDouble(grossString);
            deduct = gross * RATE;
            net = gross - deduct;
            System.out.println("Name: " + name);
            System.out.println("Gross Pay: " + gross);
            System.out.println("Deductions: " + deduct);
            System.out.println("Net Pay: " + net);
            name = JOptionPane.showInputDialog(
                "Enter employee's name: ");
        }
    }
}
    
```

Example:
Payroll
Report

Writing Simple Modular Program in Java



```

import javax.swing.JOptionPane;
public class PayrollReport
{
    public static void main(String args[])
    {
        String name;
        String grossString;
        double gross, deduct, net;
        final double RATE = 0.25;
        final String QUIT = "XXX";
        final String REPORT_HEADING = "Payroll Report";
        final String END_LINE = "***End of report";
        // This is the work done in the housekeeping() method
        System.out.println(REPORT_HEADING);
        name = JOptionPane.showInputDialog(
            "Enter employee's name: ");
        while(name.compareTo(QUIT) != 0)
        {
            // This is the work done in the detailLoop() method
            grossString = JOptionPane.showInputDialog(
                "Enter employee's gross pay: ");
            gross = Double.parseDouble(grossString);
            deduct = gross * RATE;
            net = gross - deduct;
            System.out.println("Name: " + name);
            System.out.println("Gross Pay: " + gross);
            System.out.println("Deductions: " + deduct);
            System.out.println("Net Pay: " + net);
            name = JOptionPane.showInputDialog(
                "Enter employee's name: ");
        }
        //This is the work done in the endOfJob() method
        System.out.println(END_LINE);
    }
}
  
```

Writing Simple Modular Program in Java

A screenshot of a Windows command prompt window titled "Developer Command Prompt for VS2012". The window has a black background and white text. The text shows the execution of a Java program named "PayrollReport". The output displays the name "William", gross pay of 1500.0, deductions of 375.0, and net pay of 1125.0, followed by "**End of report". The prompt "C:\Java>" is visible at the bottom.

```
C:\Java>java PayrollReport
Payroll Report
Name: William
Gross Pay: 1500.0
Deductions: 375.0
Net Pay: 1125.0
**End of report
C:\Java>
```

Figure 3-5 Output of the Payroll Report program when the input is William and 1500



Thank You!