

حل اسئلة لاب 4

CS110T: Programming Language1

Lab 04: Java basics II + Conditions and branches (Part1)



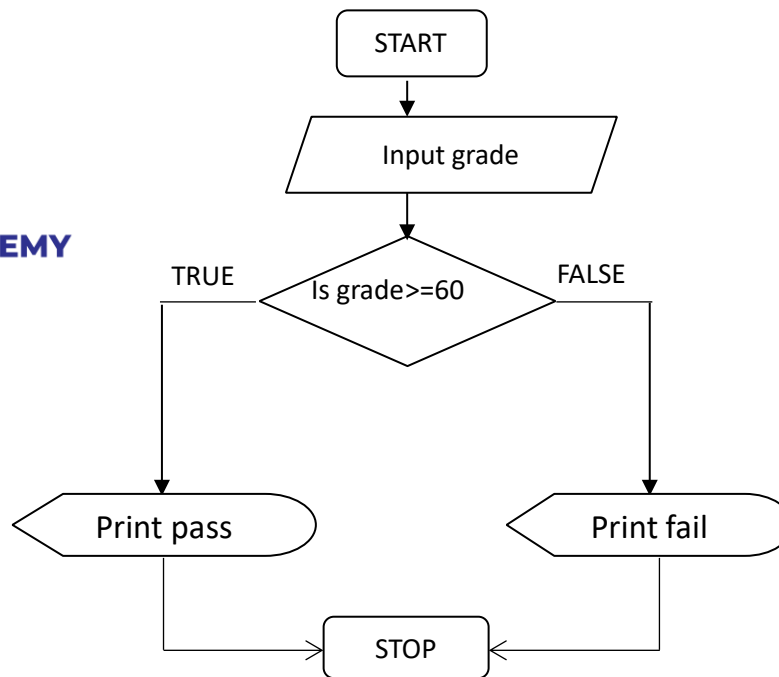
Lab Objectives:

In this lab, the student will practice:

- ✓ Reading data values from the user.
- ✓ Using if ... else statements ✓ Compiling and executing Java applications.

Lab Exercise 1: Covert a Flowchart to Code

Problem Description: According to the exercise 3 from Lab 1, Write a java program which solve the problem as shown in the flowchart below.



Code:

```

import java.util.Scanner;

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

        System.out.print("Enter grade: ");
        int grade = input.nextInt();

        if (grade >= 60) {
            System.out.println("pass");
        } else {
            System.out.println("fail");
        }
    }
}
  
```



Lab Exercise 2: Debugging

Problem Description: Rewrite the following Java statements after removing all syntax error(s).

A. `num int = 10; char = 'N';`

```
Int num=10;  
Char ch='N';
```

B. `else (num > 10);
System.out.print ("Greater than 10 ");`

```
Else if (num>10){  
System.out.print("Greater than 10 ");}
```

C. `if (num = 13 && =14)
System.out.print("Large number ");`

```
if (num == 13 && num == 14) {  
System.out.print("Large number ");  
}
```

Lab Exercise 3: Programming



Problem Description:

Elementary students would like your help to solve their simple mathematical operations. They asked you to create a simple calculator which can solve (+, -, *, /).

Write a java program that gets two integers from the user and the operation they would like to use, then display the result according to the operation they entered.

Simple output

```
Enter the first number:
15 Enter the second
number:
3 Enter the arithmetic operation:
/
The result is 5
```

```
import java.util.Scanner;

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

        System.out.println("Enter the first number:");
        int num1 = input.nextInt();

        System.out.println("Enter the second number:");
        int num2 = input.nextInt();

        System.out.println("Enter the arithmetic operation (+, -, *, /):");
        char operation = input.next().charAt(0);

        double result = 0;

        switch (operation) {
            case '+':
                result = num1 + num2;
                break;
            case '-':
                result = num1 - num2;
                break;
            case '*':
                result = num1 * num2;
                break;
```

```
case '/':  
    if (num2 != 0) {  
        result = (double) num1 / num2;  
    } else {  
        System.out.println("Error: Division by zero!");  
    }  
    break;  
default:  
    System.out.println("Invalid operation!");  
}  
  
System.out.println("The result is " + result);}}
```



Code:

Assignment Problems:

Problem Description: A grocery shop would like your help to create a bill system.

Write a java program that calculate the total price according to the items and the prices below:

Item	Price
L for Lettuce	5 SR per item
T for Tomatoes	2 SR per item
O for Onion	3 SR per item



Your program must get the item and how many he/she got, then display the result.

Sample output

```
        Welcome to our shop
Please enter your name : Maha The
available items are:
Lettuce(L) 5.00 SR
Tomatoes(T) 2.00 SR
Onion(O) 3.00 SR Enter the letter of
the item you want:
L Enter the amount of this item you would like to
buy:
3
The total price is 15.0
Thank you Maha have a nice day..
```

Code:

```
import java.util.Scanner;

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

        System.out.println("Welcome to our shop");
        System.out.print("Please enter your name: ");
        String name = input.nextLine();

        System.out.println("The available items are:");
        System.out.println("Lettuce(L) 5.00 SR");
        System.out.println("Tomatoes(T) 2.00 SR");
        System.out.println("Onion(O) 3.00 SR");
```

```
System.out.println("Enter the letter of the item you want:");  
char item = input.next().charAt(0);
```

```
System.out.println("Enter the amount of this item you would like to buy:");  
int quantity = input.nextInt();
```

```
double price = 0;  
String itemName = "";
```

```
switch (Character.toUpperCase(item)) {  
    case 'L':  
        price = 5.0;  
        itemName = "Lettuce";  
        break;  
    case 'T':  
        price = 2.0;  
        itemName = "Tomatoes";  
        break;  
    case 'O':  
        price = 3.0;  
        itemName = "Onion";  
        break;  
    default:  
        System.out.println("Invalid item selected!");
```

```
}
```

```
double totalPrice = price * quantity;  
System.out.println("The total price is " + totalPrice);  
System.out.println("Thank you " + name + " have a nice day..");
```

```
}
```

```
}
```

