



# Lab Task

Subject: Introduction to JAVA

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## Part 1 and Part 2

```
// Lab 3: Understanding flow of Control
// Part 1 : Boolean Expression and Relation Operators
import java.util.Scanner;
public class BooleanOperatorsLab {
   public static void main (String [] args){
      int num1, num2;
      Scanner input = new Scanner(System.in);
      System.out.print("Enter the value for num1: ");
      num1 = input.nextInt();
      System.out.print("Enter the value for num2: ");
      num2 = input.nextInt();
      boolean result1 = (num1>num2);
      boolean result2 = (num1 == num2);
      System.out.println("Result 1 (num1 > num2): "+result1);
      System.out.println("Result 2 (num1 == num2): "+result2);
      //part 2 : Logical Operator
      boolean result3 = (result1 && result2);
      System.out.println("Result 3 (result1 && result2): "+result3);
      boolean result4 = (result1 || result2);
      System.out.println("Result 4 (result1 && result2): "+result4);
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Compile Messages | jGRASP Messages | Run I/O
                                          Interactions
               ----jGRASP exec: java BooleanOperatorsLab
 End
              Enter the value for num1: 10
 Clear
              Enter the value for num2: 5
              Result 1 (num1 > num2): true
 Help
              Result 2 (num1 == num2): false
              Result 3 (result1 && result2): false
              Result 4 (result1 && result2): true
```

### Part 3 Task 1 and Part 5 Task 1

```
// Lab 3: Understanding flow of Control
// Part 3: Using if statement
// Task 1: Checking Eligibility for Discount
import java.util.Scanner;
public class CheckEligibility{
   public static void main(String [] args){
      Scanner scanner = new Scanner(System.in);
      System.out.print("Enter your age: ");
       int age = scanner.nextInt();
      System.out.print("Enter the total amount of your purchase: ");
       int totalAmount = scanner.nextInt();
      if(age >= 18 && age <= 30 && totalAmount>=1000)
          System.out.println("You are eligible for a discount!");
      // part 5: Using else statements
      // Task 1: Adding else to part 3 (Task 1 and 2)
      else
          System.out.println("Sorry, you are not eligible for a discount.");
   }
}
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Compile Messages
                 jGRASP Messages
                                  Run I/O
                                          Interactions
                ----jGRASP exec: java CheckEligibility
  End
              Enter your age: 25
 Clear
              Enter the total amount of your purchase: 1500
              You are eligible for a discount!
 Help
```

#### Part 3 Task 2 and Part 5 Task 2

```
// Lab 3: Understanding flow of Control
// Part 3: Using if statement
// Task 2: Membership Renewal
import java.util.Scanner;
public class MembershipRenewal {
   public static void main (String [] args) {
     boolean isMember;
     int yearsOfMembership;
     Scanner scanner = new Scanner (System.in);
     System.out.print("Are you a member? (true/false) :");
     isMember = scanner.nextBoolean();
     System.out.print("How many years have you been a member? ");
     yearsOfMembership = scanner.nextInt();
     if(isMember == true && yearsOfMembership >=2)
        System.out.println("You are eligible for membership renewal!");
     // Part 5
     // Task 2
     else{
        System.out.println("You are not eligible for membership renewal.");
Compile Messages | jGRASP Messages
                              Run I/O Interactions
             ----jGRASP: operation complete.
 End
              ----jGRASP exec: java MembershipRenewal
 Clear
            Are you a member? (true/false) : true
 Help
            How many years have you been a member? 3
             You are eligible for membership renewal!
```

#### Part 6

```
// Lab 3: Understanding flow of Control
// Part 6: Using if else if statement
import java.util.Scanner;
public class ConditionalStatementsLab{
    public static void main (String [] args){
       Scanner scanner = new Scanner (System.in);
       System.out.print("Enter your age: ");
       int age = scanner.nextInt();
       if(age < 0)
          System.out.println("Invalid age.");
       else if(age <18)
          System.out.println("You are a minor.");
       else if(age <= 65)
          System.out.println("You are an adult.");
          System.out.println("You are a senior citizen");
   }
}
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                 G DoWhileLoopS...
                                   UppercaseLett...  Membershipl
Compile Messages | jGRASP Messages
                                  Run I/O
                                          Interactions
                ----jGRASP exec: java ConditionalStatementsLab
  End
               Enter your age: 25
 Clear
               You are an adult.
  Help
                ----jGRASP: operation complete.
Ą
```

#### Part 7

```
public class IntegerSwitchLab {
    public static void main (String [] args){
       int dayOfWeek = 3;
       switch(dayOfWeek){
          System.out.println("Monday");
          break;
       case 2:
          System.out.println("Tuesday");
          break;
       case 3:
          System.out.println("Wednesday");
       case 4:
          System.out.println("Thursday");
          break;
       case 5:
          System.out.println("Friday");
          break;
       case 6:
          System.out.println("Saturday");
          break;
       case 7:
          System.out.println("Sunday");
          break;
       default:
          System.out.println("Invalid day");
          break;
       }

    WhileLoopSum...

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Compile Messages | jGRASP Messages | Run I/O
                                            Interactions
                ----jGRASP exec: java IntegerSwitchLab
  End
               Wednesday
 Clear
                ----jGRASP: operation complete.
  Help
```

# Question 1

```
public class BookDiscountStore{
    public static void main (String [] args){
       Scanner scanner = new Scanner (System.in);
       System.out.print("Enter the number of books: ");
       int numberOfBooks = scanner.nextInt();
       int discount=0;
       if(numberOfBooks < 0){</pre>
          System.out.println("Invalid Input");
          return;
       else if(numberOfBooks <=5)</pre>
          discount = 5;
       else if(numberOfBooks <=10)
          discount = 10;
       else if(numberOfBooks > 10)
          discount = 15;
       System.out.println("You've chosen to buy "+numberOfBooks +" books.");
       System.out.println("Congratulations! You qualify for a " +discount +"% discount on your purchase.");

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Compile Messages | jGRASP Messages | Run I/O | Interactions
                ----jGRASP exec: java BookDiscountStore
  End
               Enter the number of books: 8
 Clear
               You've chosen to buy 8 books.
               Congratulations! You qualify for a 10% discount on your purchase.
 Help
                ----jGRASP: operation complete.
```

## Question 2

```
import java.util.Scanner;
public class CourseEnrollmentSystem {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter your GPA: ");
        double gpa = scanner.nextDouble();
        System.out.print("Have you completed Course A? (true/false): ");
        boolean completedCourseA = scanner.nextBoolean();
        System.out.println("You are eligible to enroll in the following courses:");
        if (gpa >= 3.5) {
            System.out.println("- Course C");
            System.out.println("- Course D");
        } else if (gpa >= 3.0) {
            System.out.println("- Course C");
             if (completedCourseA) {
                 System.out.println("- Course D");
        } else {
            if (completedCourseA && gpa >= 2.5) {
                 System.out.println("- Course D");
WhileLoopSu...
                G DoWhileLoop... G UppercaseLet... G MembershipR... G BooleanOper... G Ch
Compile Messages | jGRASP Messages | Run I/O | Interactions
              Enter your GPA: 3.2
 End
              Have you completed Course A? (true/false): true
 Clear
              You are eligible to enroll in the following courses:
               - Course C
 Help
               - Course D
                ----jGRASP: operation complete.
```