

JAVA PROGRAMMING BASCIS

Coding Questions on Data Types:

1. Write a Java program to declare and initialize all eight primitive data types and print their values.

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*C:\Users\waghu\OneDrive\Documents\Java test\PrimitiveDatatype.java - Notepad++  
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?  
PrimitiveDatatype.java  
1 public class PrimitiveDatatype {  
2     public static void main(String[] args) {  
3         byte byteVar = 100;  
4         short shortVar = 30000;  
5         int intVar = 100000;  
6         long longVar = 100000000000L;  
7         float floatVar = 10.5f;  
8         double doubleVar = 99.99;  
9         char charVar = 'A';  
10        boolean booleanVar = true;  
11  
12        System.out.println("Byte Value: " + byteVar);  
13        System.out.println("Short Value: " + shortVar);  
14        System.out.println("Int Value: " + intVar);  
15        System.out.println("Long Value: " + longVar);  
16        System.out.println("Float Value: " + floatVar);  
17        System.out.println("Double Value: " + doubleVar);  
18        System.out.println("Char Value: " + charVar);  
19        System.out.println("Boolean Value: " + booleanVar);  
20  
21    }  
22 }  
23 System.out.println("Short Value: " + shortvar);
```

```
C:\Windows\system32\cmd.e: X + v

C:\Users\waghu\OneDrive\Documents\Java test>javac PrimitiveDatatype.java

C:\Users\waghu\OneDrive\Documents\Java test>java PrimitiveDatatype.java
Byte Value: 100
Short Value: 30000
Int Value: 100000
Long Value: 100000000000
Float Value: 10.5
Double Value: 99.99
Char Value: A
Boolean Value: true

C:\Users\waghu\OneDrive\Documents\Java test>
```

2. Write a Java program that takes two integers as input and performs all arithmetic operations on them.

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C:\Users\waghu\OneDrive\Documents\Java test\ArithmeticOperations.java - Notepad++
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ArithmeticOperations.java

1  import java.util.Scanner;
2
3  public class ArithmeticOperations{
4      public static void main(String[] args){
5          Scanner scanner = new Scanner(System.in);
6
7          System.out.print("Enter first integer: ");
8          int num1 = scanner.nextInt();
9
10         System.out.print("Enter second integer: ");
11         int num2 = scanner.nextInt();
12
13         System.out.println("Addition: " + (num1 + num2));
14         System.out.println("Substraction: " + (num1 - num2));
15         System.out.println("Multiplication: " + (num1 * num2));
16         System.out.println("Division: " + (num1 / num2));
17
18         scanner.close();
19     }
20 }
```

```
C:\Windows\system32\cmd.e: X + v

C:\Users\waghu\OneDrive\Documents\Java test>javac ArithmeticOperations.java

C:\Users\waghu\OneDrive\Documents\Java test>java ArithmeticOperations.java
Enter first integer: 10
Enter second integer: 30
Addition: 40
Substraction: -20
Multiplication: 300
Division: 0

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```

3. Implement a Java program to demonstrate implicit and explicit type casting.

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C:\Users\waghu\OneDrive\Documents\Java test\TypeCasting.java - Notepad++

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TypeCasting.java

1 public class TypeCasting {
2     public static void main(String[] args) {
3         int intVal = 100;
4         double doubleVal = intVal;
5
6         System.out.println("Implicit Type Casting:");
7         System.out.println("Int value:" + intVal);
8         System.out.println("Converted Double value:" + doubleVal);
9
10        double doubleNum = 99.99;
11        int intNum = (int) doubleNum;
12
13
14        System.out.println("\nExplicit Type Casting:");
15        System.out.println("Double value: " + doubleNum);
16        System.out.println("Converted Int value: " + intNum);
17
18    }
19 }
```

```
C:\Windows\system32\cmd.exe X + v

C:\Users\waghu\OneDrive\Documents\Java test>javac TypeCasting.java

C:\Users\waghu\OneDrive\Documents\Java test>java TypeCasting.java
Implicit Type Casting:
Int value:100
Converted Double value:100.0

Explicit Type Casting:
Double value: 99.99
Converted Int value: 99

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```

4. Create a Java program that converts a given integer to a double and vice versa using wrapper classes.

```
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C:\Users\waghu\OneDrive\Documents\Java test\WrapperClass.java - Notepad++

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WrapperClass.java x

1 public class WrapperClass {
2     public static void main(String[] args) {
3
4         Integer intValue = 100;
5         Double doubleValue = intValue.doubleValue();
6
7         System.out.println("Integer to Double Conversion:");
8         System.out.println("Integer value: " + intValue);
9         System.out.println("Converted Double value: " + doubleValue);
10
11
12         Double doubleNum = 99.99;
13         Integer intNum = doubleNum.intValue();
14
15         System.out.println("\nDouble to Integer Conversion:");
16         System.out.println("Double value: " + doubleNum);
17         System.out.println("Converted Integer value: " + intNum);
18     }
19 }
20
```

```
C:\Windows\system32\cmd.exe X + v
C:\Users\waghu\OneDrive\Documents\Java test>javac WrapperClass.java
C:\Users\waghu\OneDrive\Documents\Java test>java WrapperClass.java
Integer to Double Conversion:
Integer value: 100
Converted Double value: 100.0

Double to Integer Conversion:
Double value: 99.99
Converted Integer value: 99

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5. Write a Java program to swap two numbers using a temporary variable and without using a temporary variable.

```
SwapNumbers.java
1  import java.util.Scanner;
2
3  public class S0 {
4      public static void main(String[] args) {
5          Scanner scanner = new Scanner(System.in);
6
7
8          System.out.print("Enter first number: ");
9          int num1 = scanner.nextInt();
10
11         System.out.print("Enter second number: ");
12         int num2 = scanner.nextInt();
13
14
15         int temp = num1;
16         num1 = num2;
17         num2 = temp;
18
19         System.out.println("\nAfter swapping using temporary variable:");
20         System.out.println("First number: " + num1);
21         System.out.println("Second number: " + num2);
22
23
24         num1 = num1 + num2;
25         num2 = num1 - num2;
26         num1 = num1 - num2;
27
28         System.out.println("\nAfter swapping without using temporary variable:");
29         System.out.println("First number: " + num1);
30         System.out.println("Second number: " + num2);
31
32         scanner.close();
33     }
34 }
35
```

```
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C:\Users\waghu\OneDrive\Documents\Java test>javac SwapNumbers.java

C:\Users\waghu\OneDrive\Documents\Java test>java SwapNumbers.java
Enter first number: 50
Enter second number: 10

After swapping using temporary variable:
First number: 10
Second number: 50

After swapping without using temporary variable:
First number: 50
Second number: 10

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```

6. Develop a program that takes user input for a character and prints whether it is a vowel or consonant.

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*C:\Users\waghu\OneDrive\Documents\Java test\VowelorConsonant.java - Notepad++

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VowelorConsonant.java x

1  import java.util.Scanner;
2  public class VowelorConsonant {
3      public static void main(String[] args) {
4          Scanner scanner = new Scanner(System.in);
5
6
7          System.out.print("Enter a character: ");
8          char ch = scanner.next().toLowerCase().charAt(0);
9
10
11         if (ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') {
12             System.out.println(ch + " is a vowel.");
13         } else if (Character.isLetter(ch)) {
14             System.out.println(ch + " is a consonant.");
15         } else {
16             System.out.println("Invalid input. Please enter an alphabet.");
17         }
18
19         scanner.close();
20     }
21 }
```

```
C:\Windows\system32\cmd.e: X + v

C:\Users\waghu\OneDrive\Documents\Java test>javac VowelorConsonant.java

C:\Users\waghu\OneDrive\Documents\Java test>java VowelorConsonant.java
Enter a character: a
a is a vowel.

C:\Users\waghu\OneDrive\Documents\Java test> java VowelorConsonant.java
Enter a character: b
b is a consonant.

C:\Users\waghu\OneDrive\Documents\Java test>
```

7. Create a Java program to check whether a given number is even or odd using command-line arguments.

```
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C:\Users\waghu\OneDrive\Documents\Java test\EvenorOdd.java - Notepad++

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EvenorOdd.java

1 public class EvenOrOdd {
2     public static void main(String[] args) {
3         if (args.length == 0) {
4             System.out.println("Please enter a number.");
5             return;
6         }
7
8         int number = Integer.parseInt(args[0]);
9
10        if (number % 2 == 0) {
11            System.out.println(number + " is even.");
12        } else {
13            System.out.println(number + " is odd.");
14        }
15    }
16 }
17
```

```
C:\Windows\system32\cmd.e: X + v

C:\Users\waghu\OneDrive\Documents\Java test>javac EvenOrOdd.java

C:\Users\waghu\OneDrive\Documents\Java test>java EvenOrOdd.java
Please enter a number.

C:\Users\waghu\OneDrive\Documents\Java test> java EvenOrOdd 5
5 is odd.

C:\Users\waghu\OneDrive\Documents\Java test>java EvenOrOdd 8
8 is even.

C:\Users\waghu\OneDrive\Documents\Java test>
```