**Assignment No- 4**

**1) Write a program that demonstrates widening conversion from int to double and prints the result.**

**Program code:**

**package conversionWidening;**

**public class Widening {**

**public static void main(String[] args) {**

**int num = 42;**

**double widenedNum = num;**

**System.*out*.println("Original int value: " + num);**

**System.*out*.println("Widened double value: " + widenedNum);**

**}**

**}**

**Output:**

**Original int value: 42**

**Widened double value: 42.0**

**2) Create a program that demonstrates narrowing conversion from double to int and prints the result.**

**Program code:**

**package conversionWidening;**

**public class narrowing {**

**public static void main(String[] args) {**

**double num = 42.65;**

**int narrowedNum = (int) num;**

**System.*out*.println("Original double value: " + num);**

**System.*out*.println("Narrowed int value: " + narrowedNum);**

**}**

**}**

**Output:**

**Original double value: 42.65**

**Narrowed int value: 42**

**3) Write a program that performs arithmetic operations involving different data types (int, double, float) and observes how Java handles widening conversions automatically.**

**Program code:**

**package conversionWidening;**

**public class Conversion {**

**public static void main(String[] args) {**

**int intNum = 10;**

**double doubleNum = 5.5;**

**float floatNum = 3.3f;**

**double result1 = intNum + doubleNum;**

**float result2 = floatNum + intNum;**

**double result3 = floatNum + doubleNum;**

**System.*out*.println("Result of int + double: " + result1);**

**System.*out*.println("Result of float + int: " + result2);**

**System.*out*.println("Result of float + double: " + result3);**

**}**

**}**

**Output:**

**Result of int + double: 15.5**

**Result of float + int: 13.3**

**Result of float + double: 8.799999952316284**

**4) Write a Program that demonstrates widening conversion from int to (double,float, boolean, string) and prints the result.**

**Program code:**

**package conversionWidening;**

**public class Conversionn {**

**public static void main(String[] args) {**

**int num = 10;**

**double doubleValue = num;**

**float floatValue = num;**

**boolean booleanValue = (num != 0);**

**String stringValue = Integer.*toString*(num);**

**System.*out*.println("Original int value: " + num);**

**System.*out*.println("Widened to double: " + doubleValue);**

**System.*out*.println("Widened to float: " + floatValue);**

**System.*out*.println("Converted to boolean: " + booleanValue);**

**System.*out*.println("Converted to string: " + stringValue);**

**}**

**}**

**Output:**

**Original int value: 10**

**Widened to double: 10.0**

**Widened to float: 10.0**

**Converted to boolean: true**

**Converted to string: 10**