**1) Write a program to print the numbers from 10 to 50 using for loop/while loop.**  
  
**Solution:  
public class Solution1 {**

**// Main class for the program**

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

**// Entry point of the program**

**// Loop to iterate through numbers from 1 to 50**

**for (int i = 1; i <= 50; i++) {**

**// Print the current number**

**System.out.print((i) + ",");**

**}**

**}**

**}**

**Output:**1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,

**2) Write a program that find a given number is negative or positive.  
  
Solution:  
import java.util.Scanner;**

**public class Solution2 {**

**// Main class for the program**

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

**// Entry point of the program**

**// Create a Scanner object to read input from the console**

**Scanner scanner = new Scanner(System.in);**

**int num = 0; // Variable to store the number input**

**boolean isValid = false;**

**// Loop until a valid integer is entered**

**while (!isValid) {**

**System.out.print("Enter a number: ");**

**if (scanner.hasNextInt()) {**

**num = scanner.nextInt(); // Read the integer input**

**isValid = true; // Break the loop if input is valid**

**} else {**

**System.out.println("Invalid input. Please enter an integer.");**

**scanner.next(); // Clear the invalid input**

**}**

**}**

**// Call the findnum method with the input number**

**findnum(num);**

**}**

**public static void findnum(int num) {**

**// Check if the number is positive, negative, or zero**

**if (num > 0) {**

**System.out.println("Given Number Is Positive");**

**} else if (num < 0) {**

**System.out.println("Given Number Is Negative");**

**} else {**

**System.out.println("Given Number Is Zero");**

**}**

**}**

**}**

**Output:**Enter a number: 0

Given Number Is Zero

Enter a number: 1

Given Number Is Positive

Enter a number: -1

Given Number Is Negative

3) Write down the program to reverse the given number using loops.

Input = 876

Output =678  
**Solution:  
public class Solution3 {**

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

**String a = "876";**

**String reversed = "";**

**//loop for reversing the number**

**for (int i = a.length() -1; i >= 0; i--) {**

**reversed = reversed + a.charAt(i);**

**}**

**System.err.println(reversed);**

**}**

**}**

**Output:**678

4) Write a java program to Find the smallest number among three numbers.  
  
**Solution:  
public class Solution4 {**

**// Main class for the program**

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

**// Entry point of the program**

**//Initialize array**

**int [] arr = new int [] {3, 1, 2};**

**//Initialize min with first element of array.**

**int min = arr[0];**

**//Loop through the array**

**for (int i = 0; i < arr.length; i++) {**

**//Compare elements of array with min**

**if(arr[i] <min)**

**min = arr[i];**

**}**

**System.out.println("Smallest number among the given number: " + min);**

**}**

**}**

**Output:**Smallest number among the given number:1

5) Write a Java program that takes the purchase amount as input and calculates the final payable amount after applying the discount.

1. If the purchase amount is less than 500, no discount is applied.

2. If the purchase amount is between 500 and 1000, a 10% discount is applied.

3. If the purchase amount is greater than 1000 a 20% discount is applied.  
  
**Solution:  
  
import java.util.Scanner;**

**public class Solution5 {**

**// Main class for the program**

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

**// Entry point of the program**

**// Create a Scanner object to read input from the console2**

**Scanner scanner = new Scanner(System.in);**

**int num = 0; // Variable to store the number input**

**boolean isValid = false;**

**// Loop until a valid integer is entered**

**while (!isValid) {**

**System.out.print("Please Enter the Purchase Amount: ");**

**if (scanner.hasNextInt()) {**

**num = scanner.nextInt(); // Read the integer input**

**isValid = true; // Break the loop if input is valid**

**} else {**

**System.out.println("Invalid input. Please Enter a Valid Purchase Amount.");**

**scanner.next(); // Clear the invalid input**

**}**

**}**

**// Call the finalAmount method with the input Purchase Amount**

**finalAmount(num);**

**}**

**public static void finalAmount(int num) {**

**// Check if the number is positive, negative, or zero**

**if (num > 1000) {**

**// Apply 20% discount if the Purchase Amount is greater than 1000**

**double discount = num \* 0.20;**

**double finalAmount = num - discount;**

**System.out.println("Final Payable Amount after 20% discount: " + finalAmount);**

**} else if (num >= 500 && num <= 1000) {**

**// Apply 10% discount if the Purchase Amount is between 500 and 1000**

**double discount = num \* 0.10;**

**double finalAmount = num - discount;**

**System.out.println("Final Payable Amount after 10% discount: " + finalAmount);**

**} else {**

**// No discount for amounts below 500**

**System.out.println("Final Payable Amount: " + num);**

**}**

**}**

**}**

**Output:**  
  
Please Enter the Purchase Amount: 500

Final Payable Amount after 10% discount: 450.0

Please Enter the Purchase Amount: 700

Final Payable Amount after 10% discount: 630.0

Please Enter the Purchase Amount: 2000

Final Payable Amount after 20% discount: 1600.0

6) Write a java program to print bellowed pattern ->i and j and k=>5

55555

54444

54333

54322

54321  
  
**Solution:  
  
public class Solution6 {**

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

**// Outer loop controls the rows**

**for (int i = 5; i >= 1; i--) {**

**// Inner loop controls the columns**

**for (int j = 5; j >= 1; j--) {**

**// Print the decreasing numbers in each row**

**if (j >= i) {**

**System.out.print(j); // Print the column number if j >= i**

**} else {**

**System.out.print(i); // Otherwise, print the row number**

**}**

**}**

**System.out.println(); // Move to the next line after each row**

**}**

**}**

**}**

**Output:**55555

54444

54333

54322

54321