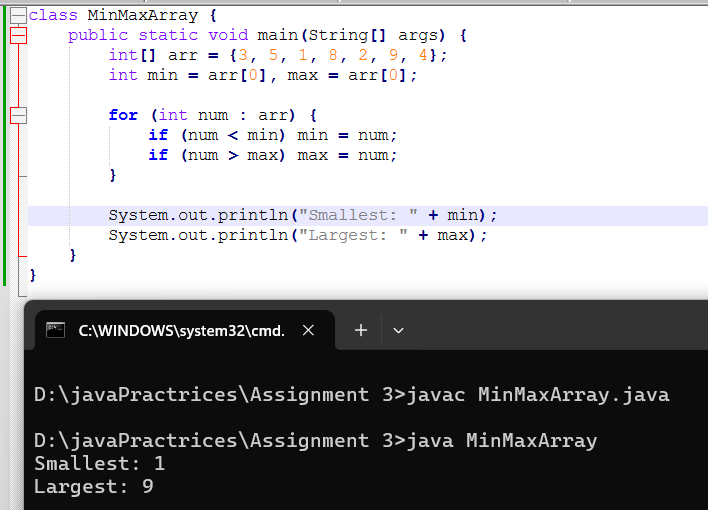
Assignment : 3

Array coding question :

1. Find the Largest and Smallest Element

Given an array, find the smallest and largest elements in it.



2. Reverse an Array

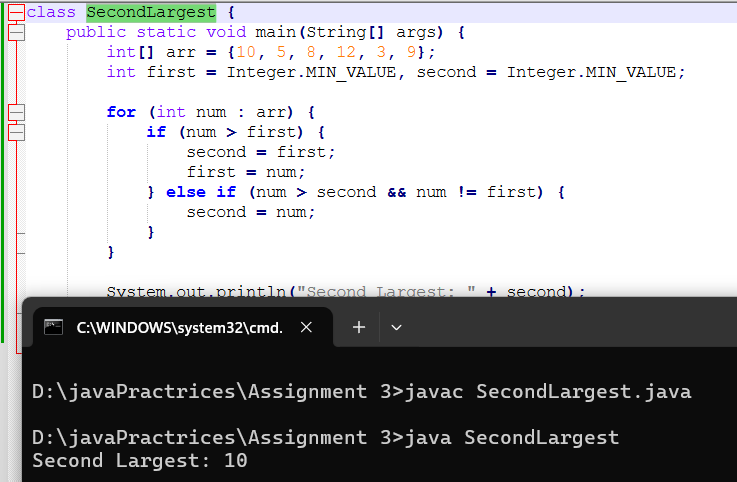
Reverse the given array in place.

A computer screen shot of a program

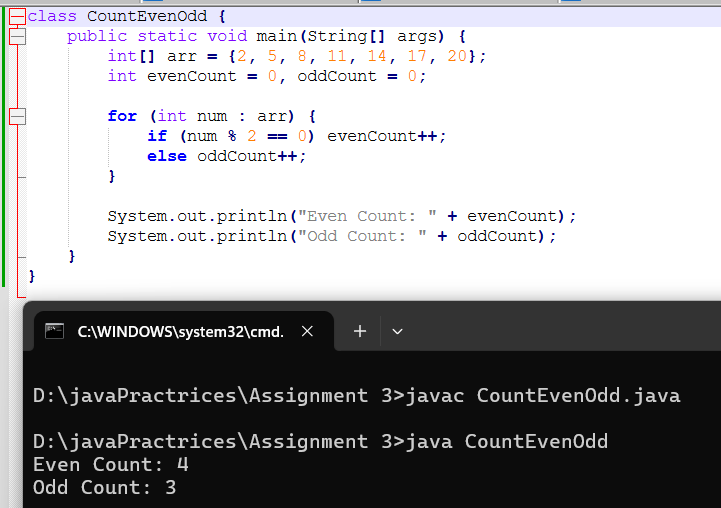
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3. Find the Second Largest Element

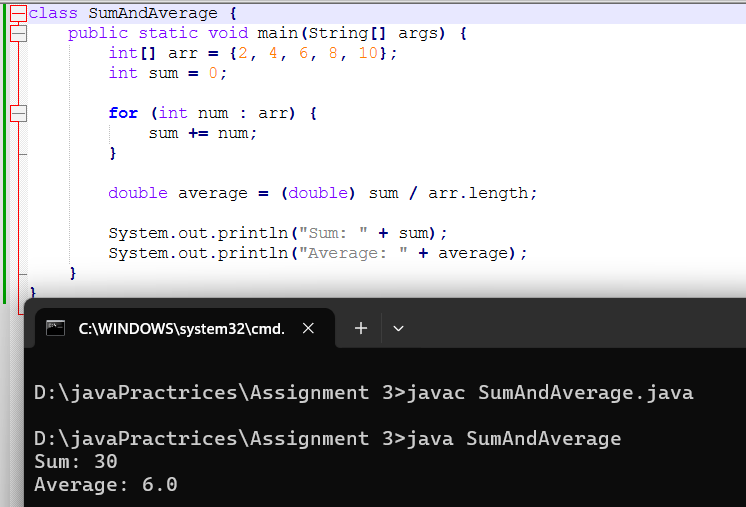
Find the second-largest element in the given array.



4. Count Even and Odd Numbers ○ Count the number of even and odd numbers in an array.



5. Find Sum and Average ○ Compute the sum and average of all elements in the array.



6. Remove Duplicates from a Sorted Array ○ Remove duplicate elements from a sorted array without using extra space.

A computer screen shot of a program

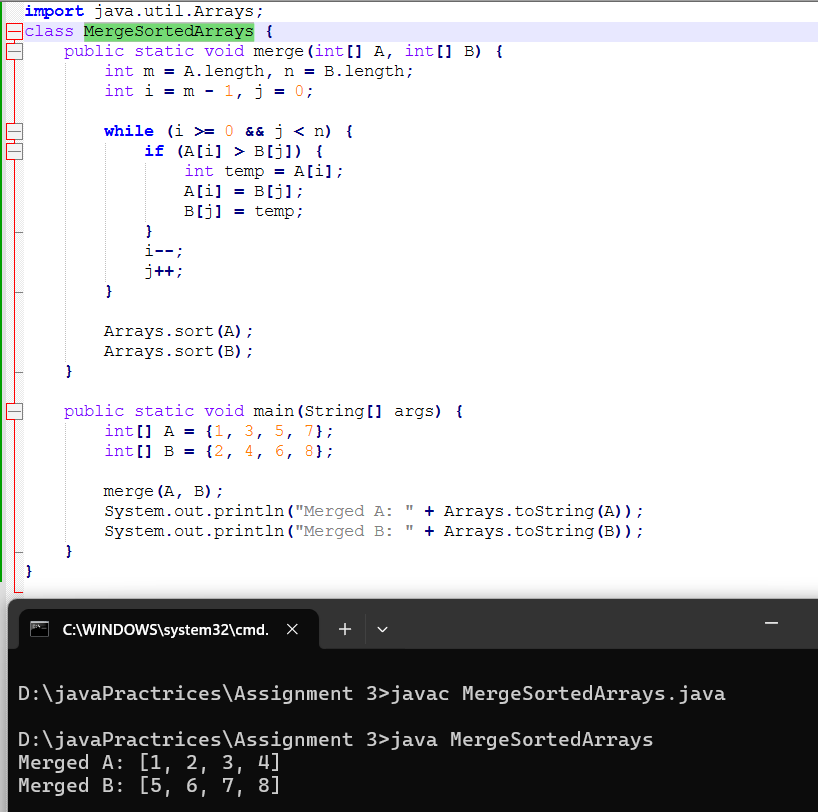
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7. Rotate an Array ○ Rotate the array to the right by k positions.

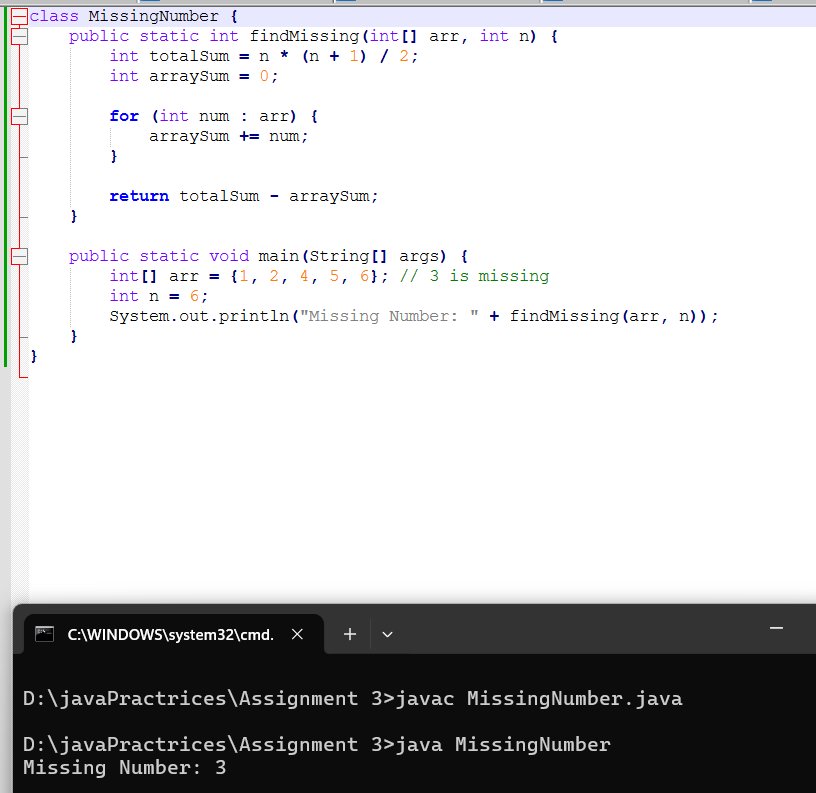
A screenshot of a computer program

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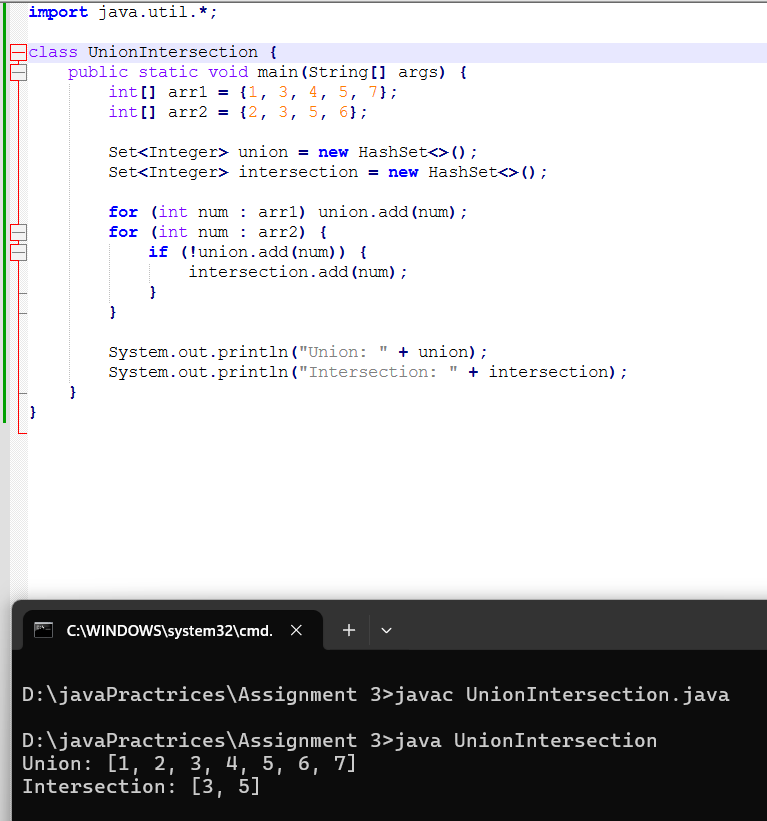
8. Merge Two Sorted Arrays ○ Merge two sorted arrays into a single sorted array without using extra space.



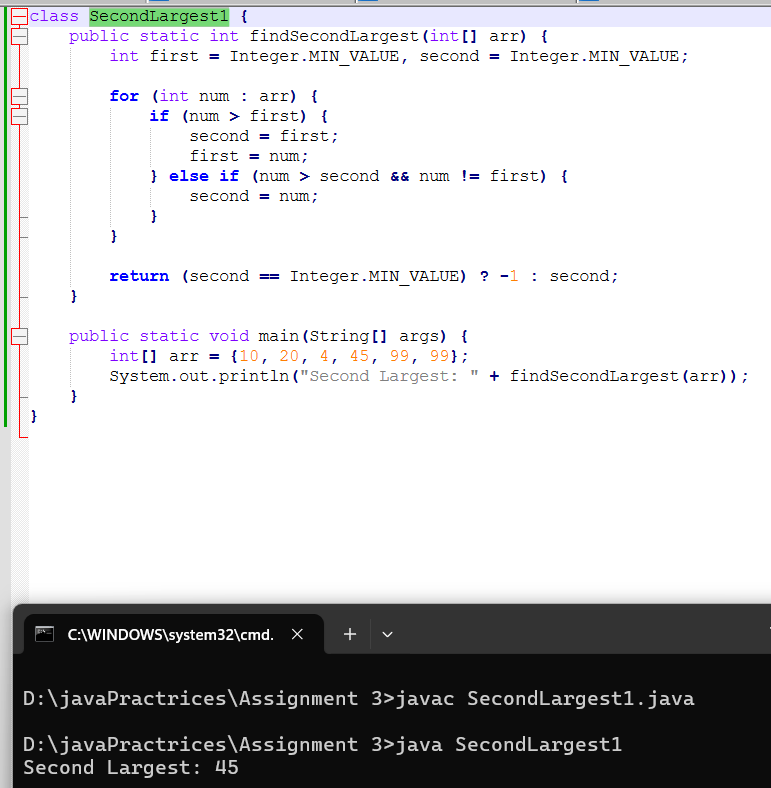
9. Find Missing Number in an Array ○ Given an array of size n-1 containing numbers from 1 to n, find the missing number.



10. Find Intersection and Union of Two Arrays ○ Find the intersection and union of two unsorted arrays.



11. Find a Subarray with Given Sum ○ Given an array of integers, find the subarray that sums to a given value S.

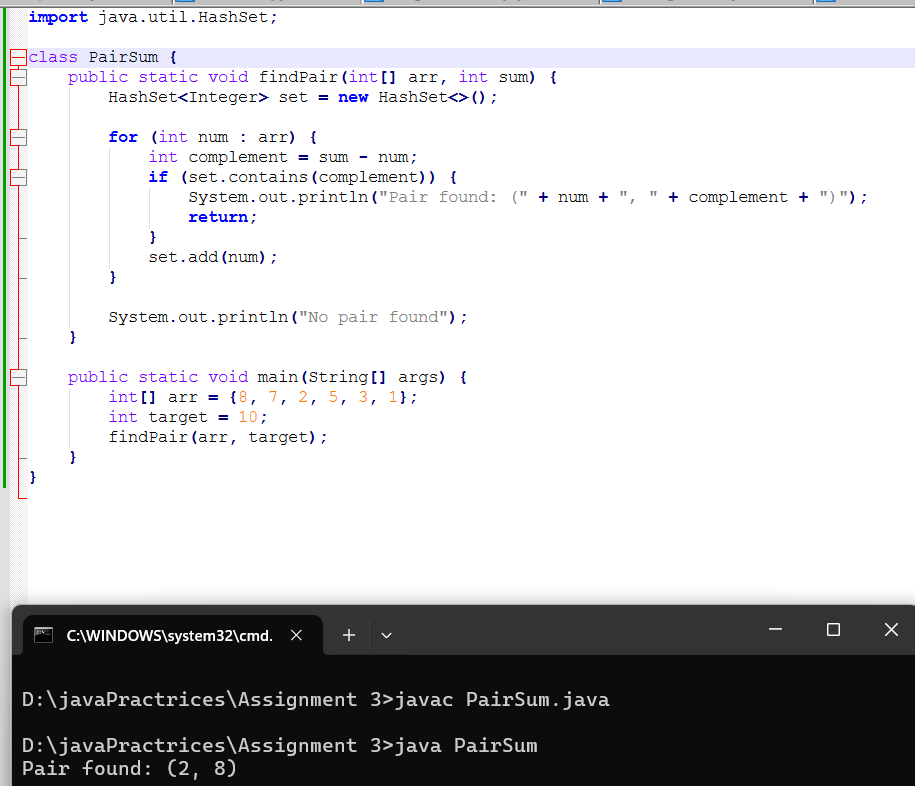


12. Write a program to accept 20 integer numbers in a single Dimensional Array. Find and Display the following: ○ Number of even numbers. ○ Number of odd numbers. ○ Number of multiples of 3

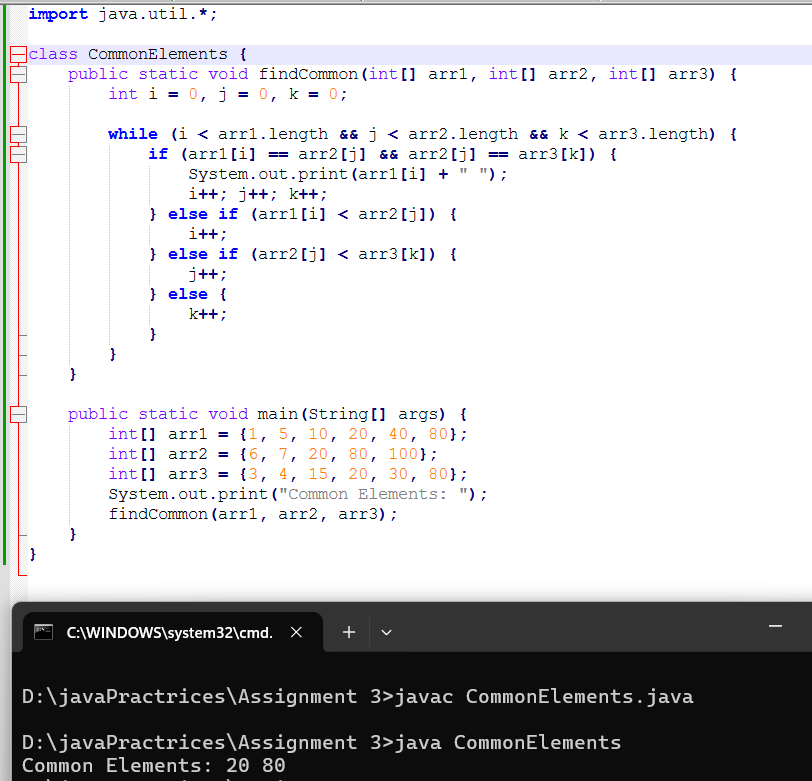
A computer screen shot of a program

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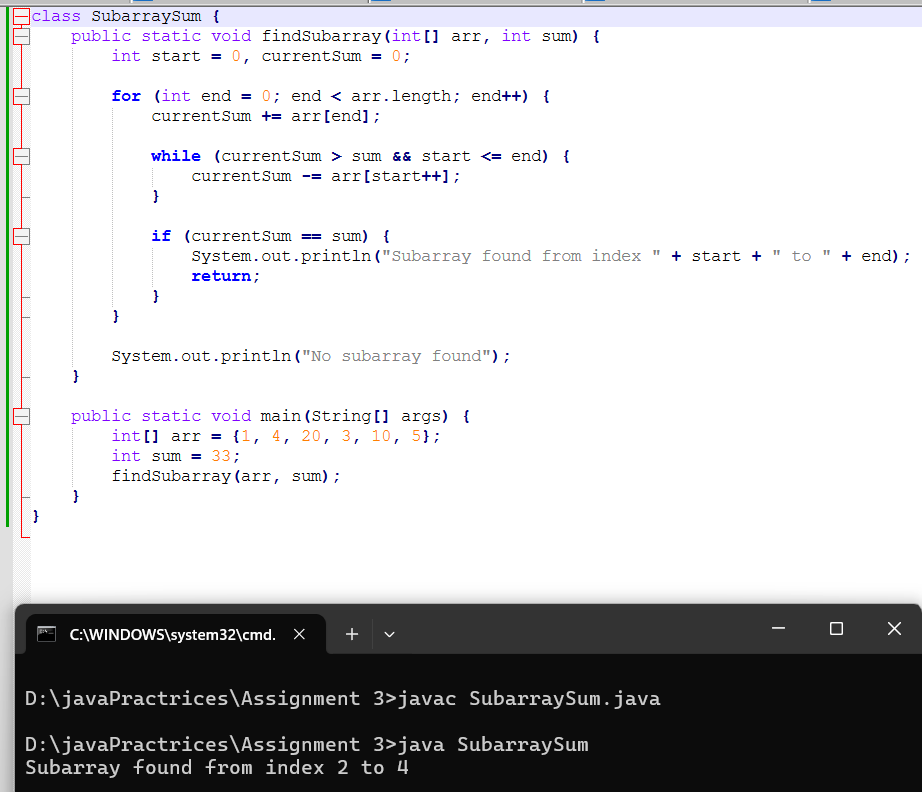
13. Write a program to accept the marks in Physics, Chemistry and Maths secured by 20 class students in a single Dimensional Array. Find and display the following: ○ Number of students securing 75% and above in aggregate. ○ Number of students securing 40% and below in aggregate.



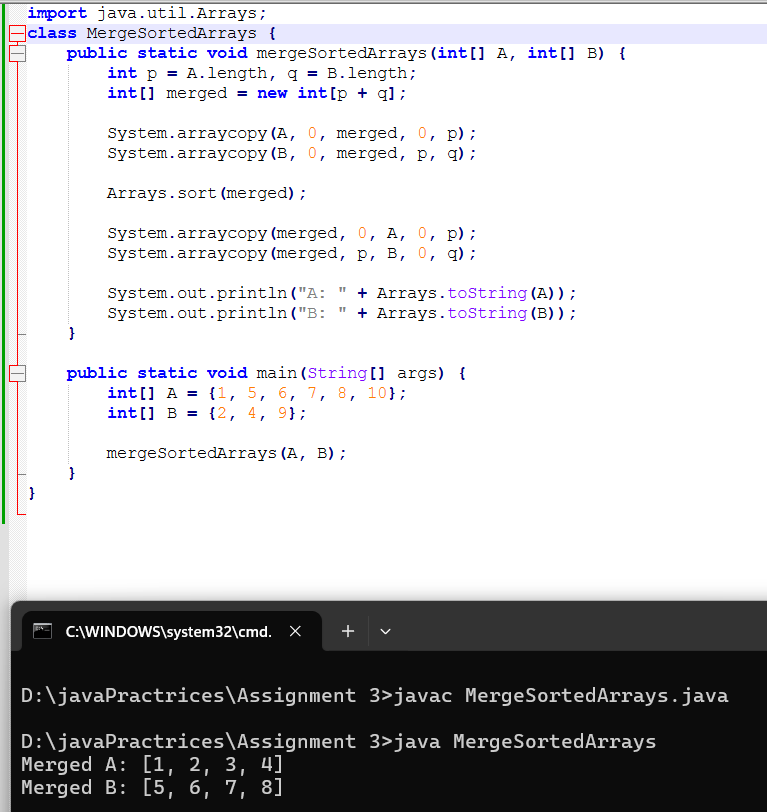
14. Write a program in Java to accept 20 numbers in a single dimensional array arr[20]. Transfer and store all the even numbers in an array even[ ] and all the odd numbers in another array odd[ ]. Finally, print the elements of the even & the odd array.



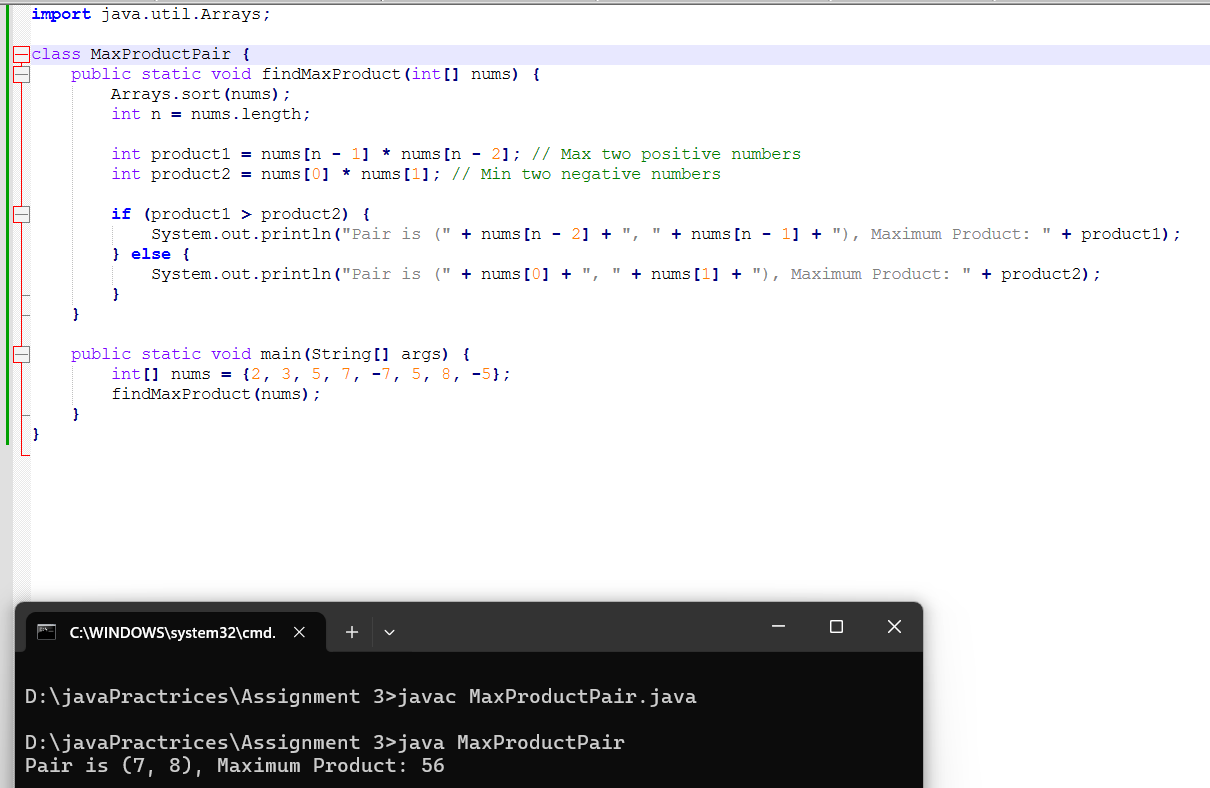
15. Write a Java program to print all sub-arrays with 0 sum present in a given array of integers. Example: Input : nums1 = { 1, 3, -7, 3, 2, 3, 1, -3, -2, -2 } nums2 = { 1, 2, -3, 4, 5, 6 } nums3= { 1, 2, -2, 3, 4, 5, 6 } Output: Sub-arrays with 0 sum : [1, 3, -7, 3] Sub-arrays with 0 sum : [3, -7, 3, 2, 3, 1, -3, -2] Sub-arrays with 0 sum : [1, 2, -3] Sub-arrays with 0 sum : [2, -2] CDAC Mumbai



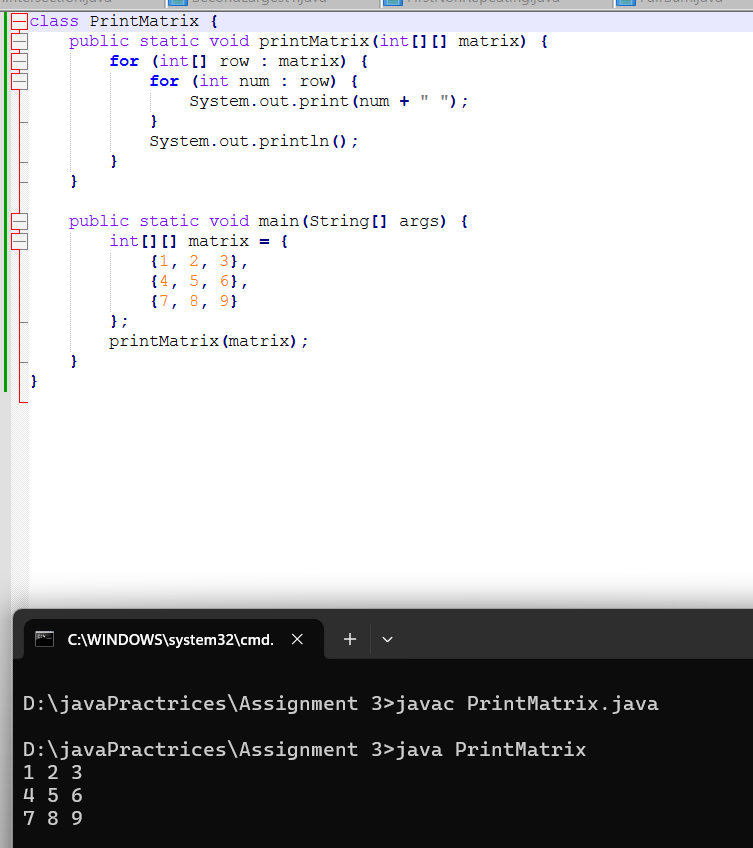
16. Given two sorted arrays A and B of size p and q, write a Java program to merge elements of A with B by maintaining the sorted order i.e. fill A with first p smallest elements and fill B with remaining elements. Example: Input : int[] A = { 1, 5, 6, 7, 8, 10 } int[] B = { 2, 4, 9 } Output: Sorted Arrays: A: [1, 2, 4, 5, 6, 7] B: [8, 9, 10]



17. Write a Java program to find the maximum product of two integers in a given array of integers. Example: Input : nums = { 2, 3, 5, 7, -7, 5, 8, -5 } Output: Pair is (7, 8), Maximum Product: 56



18. Print a Matrix ○ Given an m x n matrix, print all its elements row-wise.

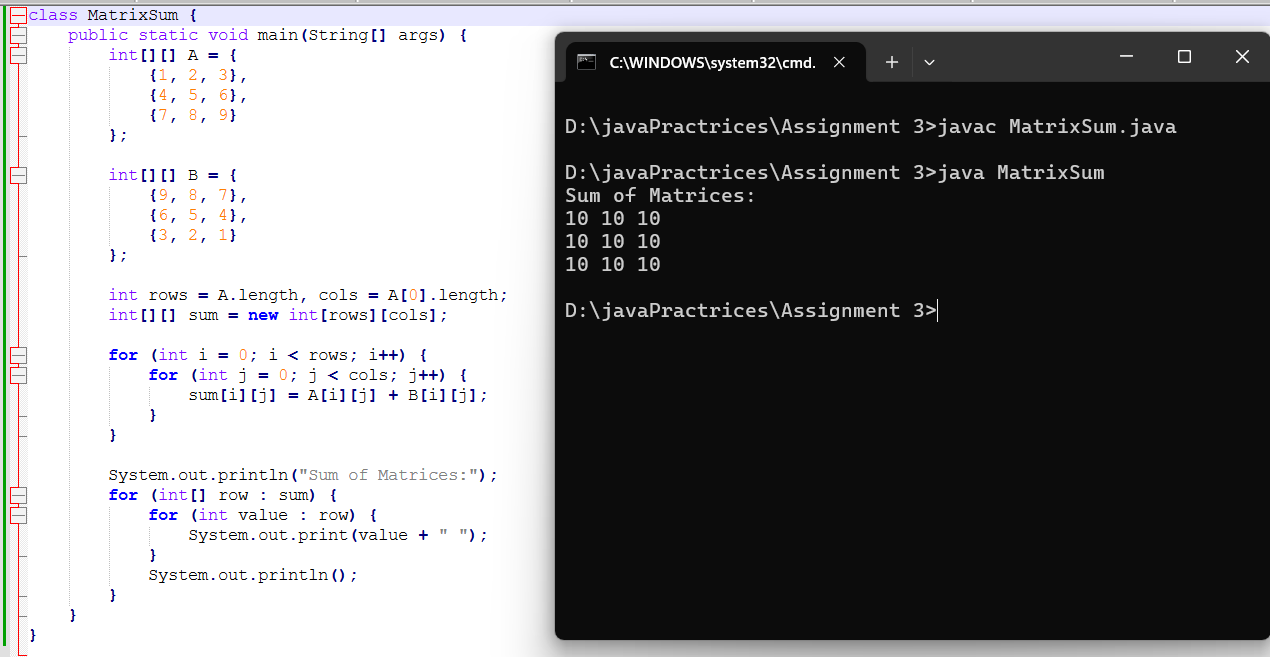


19. Transpose of a Matrix ○ Given a matrix, return its transpose (swap rows and columns).

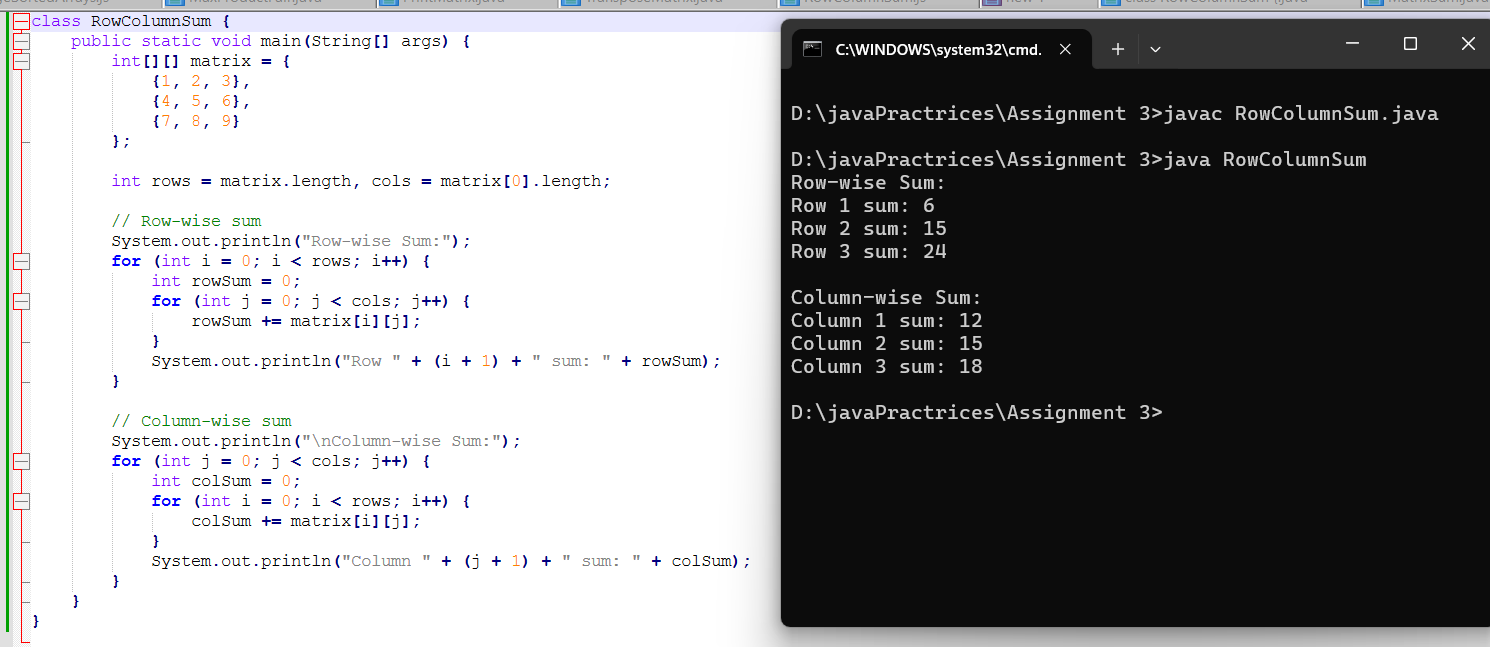
A screenshot of a computer program

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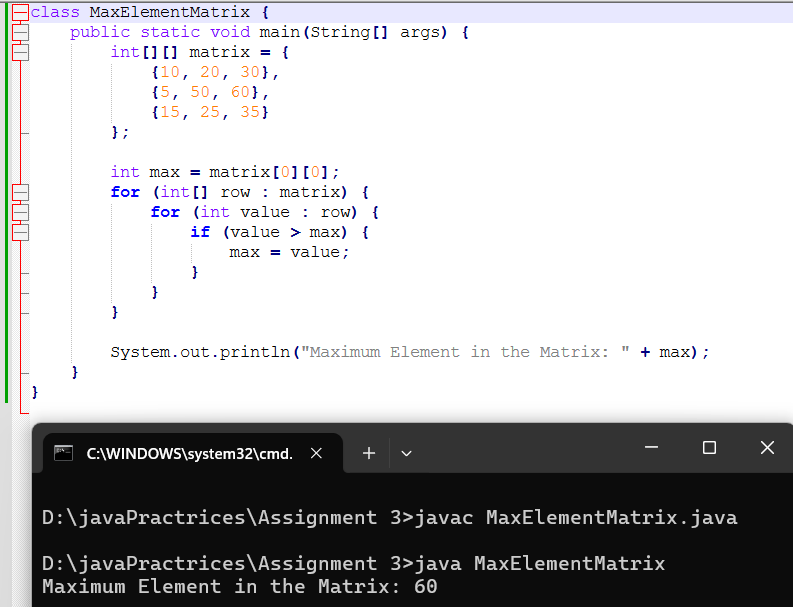
20. Sum of Two Matrices ○ Given two matrices of the same size, compute their sum.



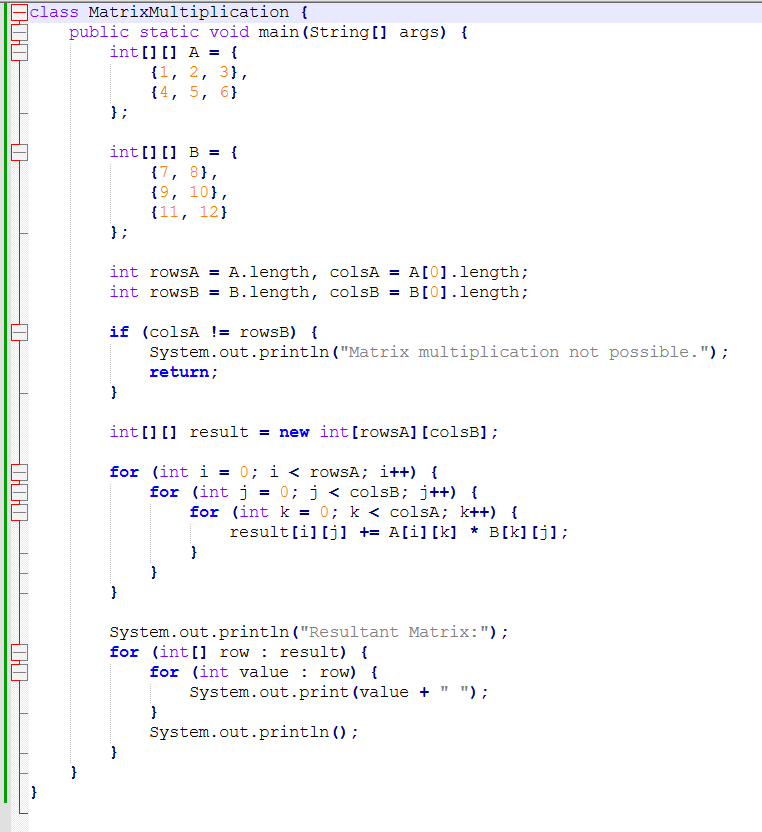
21. Row-wise and Column-wise Sum ○ Find the sum of each row and each column of a given matrix.



22. Find the Maximum Element in a Matrix ○ Find the largest element in a given matrix.



23. Matrix Multiplication ○ Multiply two matrices and return the resultant matrix.



A screenshot of a computer program

AI-generated content may be incorrect.

24. Rotate a Matrix by 90 Degrees ○ Rotate a given N x N matrix by 90 degrees clockwise.

A screenshot of a computer program

AI-generated content may be incorrect.

A screenshot of a computer program

AI-generated content may be incorrect.

25. Find the Diagonal Sum ○ Compute the sum of both diagonals in a square matrix.

