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Department of Computer Science
CS 1011 –Programming Laboratory
Lab Sheet 08

1. Take 10 integer inputs from user and store them in an array and print them on screen. Find largest and smallest elements of an array.

2. Take 20 integer inputs from user into a integer array and print the following:
   number of positive numbers
   number of negative numbers
   number of odd numbers
   number of even numbers
   number of 0.

3. Take an array of 10 elements. Split it into middle and store the elements in two different arrays. E.g.-

   INITIAL array :
   58   24   13   15   63   9   8   81   1   78
   After spliting :
   58   24   13   15   63
   9   8   81   1   78

4. Take 10 integer inputs from user and store them in an array. Now, copy all the elements in another array but in reverse order.

5. Write a program to shift every element of an array to circularly right.
   (You can get the array elements from the user)
   E.g.-
   INPUT : 1 2 3 4 5
   OUTPUT : 5 1 2 3 4

6. Sorting refers to arranging data in a particular format. Sort an array of integers in ascending order. One of the algorithms is selection sort. Use below explanation of selection sort to do this. (You can get the array elements from the user)

INITIAL ARRAY :

2	3	1	45	15

First iteration : Compare every element after first element with first element and if it is larger then swap. In first iteration, 2 is larger than 1. So, swap it.

1	3	2	45	15

Second iteration : Compare every element after second element with second element and if it is larger then swap. In second iteration, 3 is larger than 2. swap it.

1	2	3	45	15

Third iteration : Nothing will swap as 3 is smaller than every element after it.

1	2	3	45	15

Fourth iteration : Compare every element after fourth element with fourth element and if it is larger then swap. In fourth iteration, 45 is larger than 15. So, swap it.

1	2	3	15	45

7. In this program, user is asked to enter the number of rows r and columns c. The value of r and c should be less than 10 in this program.
The user is asked to enter elements of the matrix.
Then, the program computes the transpose of the matrix and displays it on the screen.

8. Initialize a 2D integer array of 3*3 matrix. E.g.-

1	2	3
4	5	6
7	8	9

Check if the matrix is symmetric or not.

9. Write a program to display the addition of two 3x3 matrices. Values of the elements should get from the user.

10. Write a program to multiply two matrices. Your output should be as follows.
Output
Enter rows and column for first matrix: 3
2
Enter rows and column for second matrix: 3
2
Error! column of first matrix not equal to row of second.

Enter rows and column for first matrix: 2
3
Enter rows and column for second matrix: 3
2

Enter elements of matrix 1:
Enter elements a11: 3
Enter elements a12: -2
Enter elements a13: 5
Enter elements a21: 3
Enter elements a22: 0
Enter elements a23: 4

Enter elements of matrix 2:
Enter elements b11: 2
Enter elements b12: 3
Enter elements b21: -9
Enter elements b22: 0
Enter elements b31: 0
Enter elements b32: 4

Output Matrix:
24 29
6 25