CODING TASK - 1

1.Write a program to swap two numbers without a third variable.

2. Logical Operators: Write a C program to check if a given year is a leap year using logical operators (&&, ||).

3. Right-Angled Triangle Check: Write a program that takes three sides of a triangle as input and checks if they can form a right-angled triangle using conditional statements.

Sample Input: Enter the three sides: 3 4 5

Output:

The given sides form a right-angled triangle.

4. Write a program in C to find all the prime numbers between two numbers inputted by the user.

Sample Input: Enter lower limit: 5 Enter upper limit: 15

Output: The prime numbers between 5 and 15 are: 7 11 13

5. Write a program to display the following pattern.

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    *
   * *
  * * *
 * * * *
* * * * *
```

6. Selection Sort: Implement the selection sorting algorithm and then find the smallest and largest element in an array.

Sample Input: Enter the number of elements: 5

Enter the elements: 12 7 3 15 9

Output: Maximum element: 15

Minimum element: 3

7. Find Triplet with Given Sum: Write a program to find three elements in an array that add up to a given sum.

Sample Input: Enter the number of elements: 5

Enter elements: 1 2 3 4 5

Enter the desired sum: 9

Output: Triplets with sum 9: (2, 3, 4)

8. Write a C program to find the union and intersection of two integer arrays.

Sample Input:

Enter the number of elements in first array: 4

Enter elements of first array: 1 2 3 4

Enter the number of elements in second array: 5

Enter elements of second array: 3 4 5 6 7

Output:

Union: 1 2 3 4 5 6 7

Intersection: 3 4

9. Check Symmetric Matrix: Implement a C program to check if a given matrix is symmetric (i.e., matrix is equal to its transpose).

Sample Input: Enter the number of rows and columns: 3 3

Enter the matrix elements:

1 2 3

2 4 5

3 5 6

Output: The matrix is Symmetric.

10.Write a C program to check whether a given number is an Armstrong number or not.
An Armstrong number (also known as a narcissistic number) is a number that is equal to the sum of its digits raised to the power of the number of digits.

Sample Input**:** 153

1^3+5^3+3^3=153

153 is an Armstrong number

11. Write a C program to rotate the elements of an array by k positions. The user should input the size of the array, its elements, the value of k, and the direction of rotation (left or right).