Assignment - 2

1. Write a function to convert decimal numbers into octal format.
   For eg: 453 -> 705

2. Write a program that takes two numbers 'n1' & 'n2' and a character 'ch' as input.
   - If ch = '*' returns multiplication of the numbers
   - If ch = '/' returns quotient after division of the numbers
   - If ch = '%' returns remainder after division of the numbers
   - If ch = '+' returns addition of the numbers
   - If ch = '-' returns subtraction of the numbers

3. Write a function that accepts a character and prints if it is "Uppercase" or "Lowercase".

4. Write a program to reverse a number: 38105 -> 50183

5. Write a program to calculate inverse of a number.
   (For calculating inverse, you should have a valid input i.e, for a number of n digits, the value of each digit should be 1 to n and is unique.)
   25413 -> 41532 (in "25413" 2 is at 1st place therefore 1 is placed on 2nd place in "41532". 5 is at 2nd place in "25413" therefore 2 is at 5th place in "41532" and so on.

6. Write a function that takes two integers 'a' & 'b' and returns its GCD.

7. Write a function that takes two integers 'a' & 'b' and returns its LCM.

8. Write a program to count multiple of 5 in an array. Take the input array from the user.
   For eg: {5, 45, 23, 63, 27, 80, 15, 2, 65, 30}
   Ans: 6

9. Write a program to count prime numbers in an array.

10. Write a function to check if an array is sorted or not.

11. Write a program sort an array that contains only 0's & 1's
    For eg: {1,0,1,1,1,0,0,0,1,0,0,1,1}
    Ans: {0,0,0,0,0,0,1,1,1,1,1,1,1}

12. Write a program to sort odd and even numbers without taking extra space. (place even numbers first then all the odd numbers}
    For eg: {3,8,5,13,6,12,18,5}
    Ans: {8,6,12,18,3,5,13,5}

13. Write a function to reverse an array without taking extra space.

14. Write a program to input an array and a target value, a number. Write a function which prints all pairs of numbers which sum equals to the target.
    For eg: For this array => {3, 1, 11, 2, 9, 7, 4, 5, -1, 13, 6} and target of 8
    Ans: (3,5), (1,7), (2,6), (9,-1)

15. Write a program to input an array and a target value, a number. Write a function which prints all triplets of numbers which sum equals to the target.
    For eg: For this array => {3, 1, 2, 9, 7, 5, -1, 6} and target of 9
    Ans: (3,1,5), (3,7,-1), (1,2,6), (1,9,-1)

16. Write a program to input an array & print all possible subsets of the array
    For eg: for [7, 2, 6] the following subsets are possible
    {}
    {7}
    {2}
    {6}
    {7,2}
    {7,6}
    {2,6}
    {7,2,6}

17. Write a program to input an array & print all possible permutations of the array
    For eg: for [7, 2, 6] the following subsets are possible
    {7,2,6}
    {7,6,2}
    {2,7,6}
    {2,6,7}
    {6,2,7}
    {6,7,2}

18. Leetcode Problems:
    a. https://leetcode.com/problems/sum-of-all-odd-length-subarrays/
    b. https://leetcode.com/problems/kids-with-the-greatest-number-of-candies/
    c. https://leetcode.com/problems/number-of-good-pairs/
    d. https://leetcode.com/problems/count-good-triplets/
    e. https://leetcode.com/problems/sort-array-by-parity/
    f. https://leetcode.com/problems/squares-of-a-sorted-array/
    g. https://leetcode.com/problems/best-time-to-buy-and-sell-stock/
    h. https://leetcode.com/problems/best-time-to-buy-and-sell-stock-ii/
    i. https://leetcode.com/problems/create-target-array-in-the-given-order/
    j. https://leetcode.com/problems/final-prices-with-a-special-discount-in-a-shop/