Problems on Pointer

(a) Basic problems

1. Write a C program that creates and initializes a pointer with a variable, and takes input and shows output using pointer.
2. Write a C program to add two numbers using pointers.
3. Write a C program to swap two numbers using pointers.

(b) Pointer arithmetic (arrays)

For the following problems, use pointer arithmetic only. You must not use array indexing.

1. Write a C program to input and print the elements of an array.
2. Write a C program to copy the elements of an array to another.
3. Write a C program to input an array, and print the values in the even/odd indices.
4. Write a C program to input an integer array, and print only the even/odd elements.
5. Write a C program to print an array in the reverse order.
6. Write a C program to reverse an array.
7. Write a C program to search an element in an array.

(c) Pointer in functions

1. Write a function that accepts an integer parameter, and increases it by 5.
2. Write a function that accepts two integer numbers a and b, and adds b to a.
3. Write a function that swaps its two parameters.
4. Write a function that takes as parameters two arrays src and dest, and copies the elements of src to dest.
5. Write a function that reverses a given array.

(d) Pointer for strings

For each of the following problems, use pointer arithmetic only. First try to solve them in the main function. Then try to solve them by creating separate functions. Using string.h functions is not allowed.

1. Write a C program that calculates the length of a string.
2. Write a C program that compares two strings (like strcmp).
3. Write a C program that copies one string to another one.
4. Write a C program that concatenates one string to another one.
5. Write a C program that reverses a given string.
6. Write a C program that finds out if a substring exists in a given string.