Q3: Recursive Methods

Define each of the following problem recursively:

- Identify the base case (or base cases) that stops the recursion
- Define the smaller problem (or problems)
- Explain how to combine solutions of smaller problems to get the solution of original problem

Write recursive methods for the problems.

1. Reversing a string. For example, if the input is "this function writes the sentence in reverse", then the output should be "reverse in sentence the writes function this".

2. Determining whether a word is elfish or not. A word is considered elfish if it contains the letters: e, l, and f in it, in any order. For example, whiteleaf, tasteful, unfriendly, and waffles are some elfish words.

3. Sorting an array of elements using selection sort algorithm.

4. Evaluating a Prefix expression
5. Evaluating a Postfix expression

6. Printing the elements of an array on the screen as in the example below. (Spiral Form)
Input:

1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
17 18 19 20

Output: 1 2 3 4 8 12 16 20 19 18 17 13 9 5 6 7 11 15 14 10