

- 1) Given a string, find the number of uppercase alphabetical characters (A-Z).

Input: HeLLoW0R1d

Output: 5

```
Static int (String str) {
```

```
}
```

- 2) Write a recursive binary search algorithm that searches for a given target in a sorted array.

- 3) Given the definition of a linked list Node, return a string that concatenates all the values in the linked list except for the head and tail values using comma as a delimiter. Linked list is guaranteed to have at least 2 nodes, head and tail.

Input: 1 -> 2 -> 3 -> 4

Output: 2,3

```
Class Node {
```

```
int value;
```

```
Node next;
```

```
}
```

```
Static String represent (Node head) {
```

```
}
```

****Be careful, you only have the definition of a Node class, use what you have, don't suppose we have any other built-in method. The argument given to the method, which is the head, contains pointers to all the other elements in the linked list (nothing new).**

- 4) Implement a stack using an array

Think of a problem that you can solve using this stack and solve it.

- 5) Traverse the binary tree

- 6) Given the definition of a binary tree Node, write a method that returns the height of a given node.

```
Class TreeNode {
```

```
Int value;
```

```
TreeNode left;
```

```
TreeNode right;
```

```
}
```

```
Static int height (TreeNode position) {
```

```
}
```

**** Use only the definition of a TreeNode, don't suppose we have other built-in methods.**