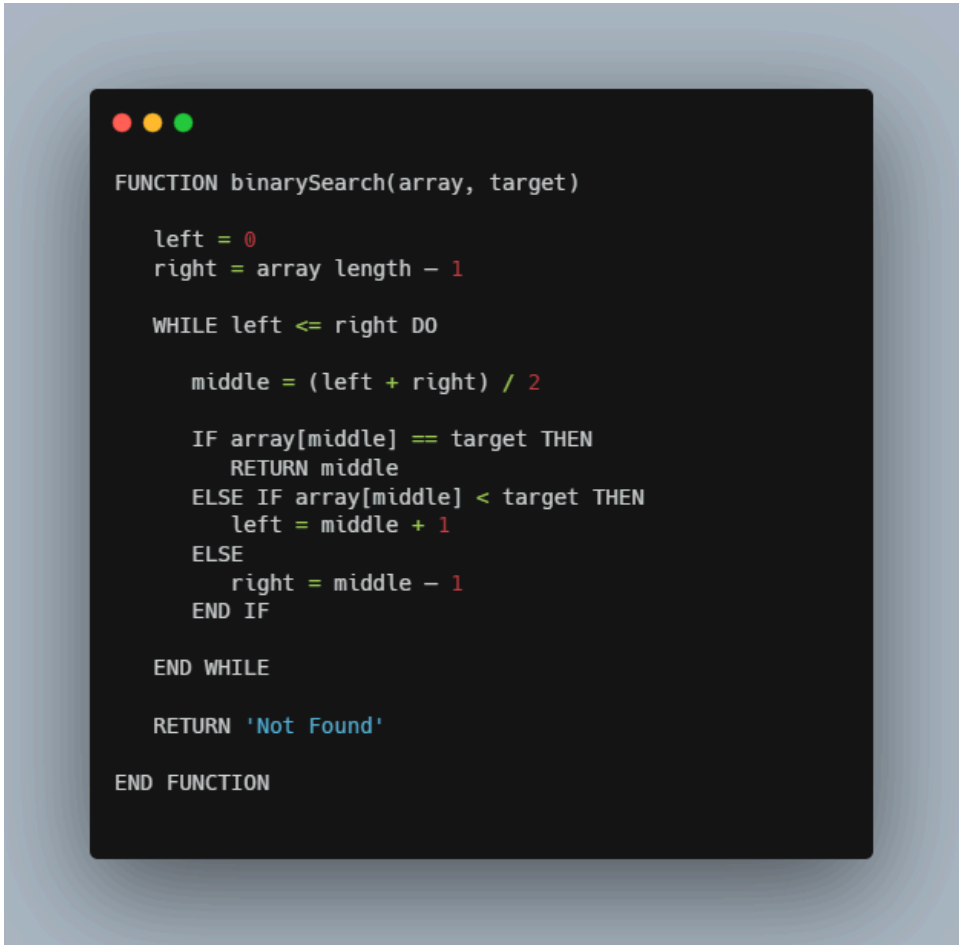
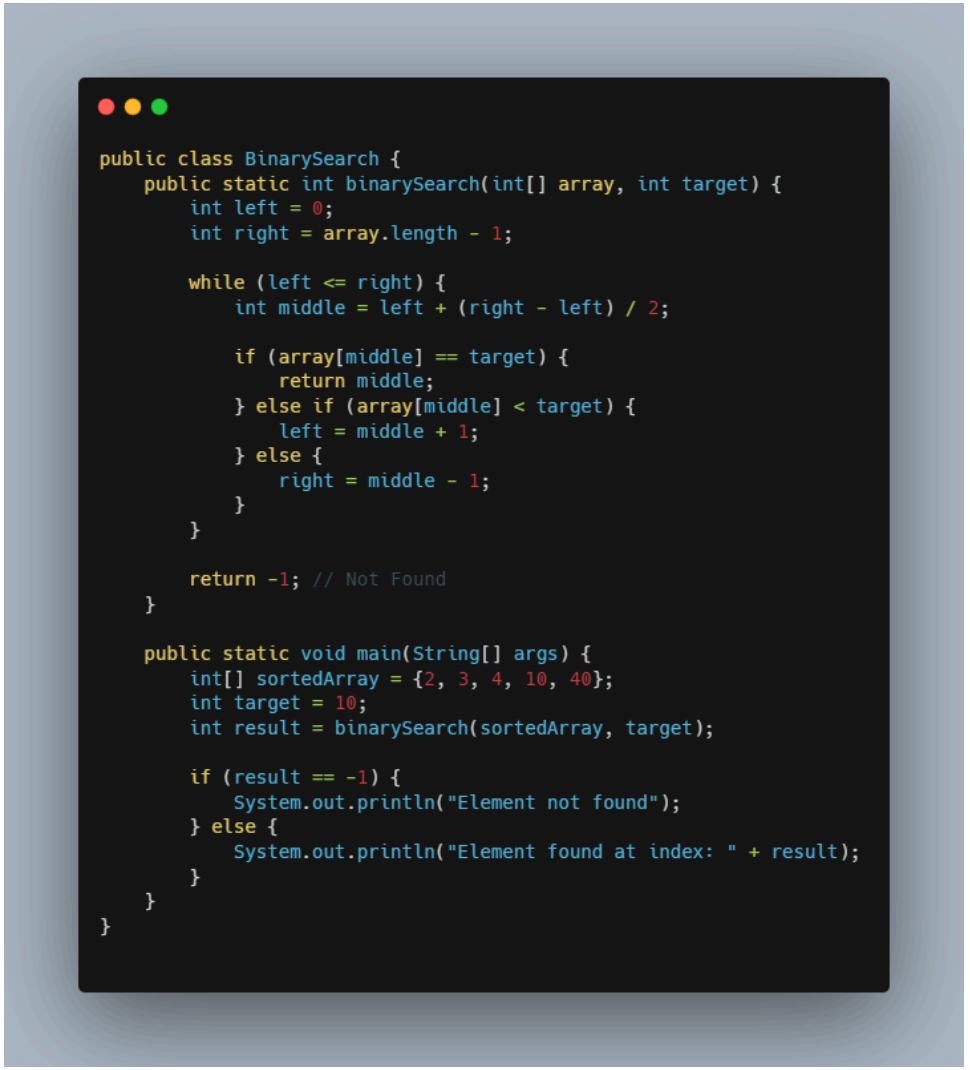
Binary Search Snippets

Pseudocode / Java



```
FUNCTION binarySearch(array, target)

   left = 0
   right = array length - 1

   WHILE left <= right DO

      middle = (left + right) / 2

      IF array[middle] == target THEN
         RETURN middle
      ELSE IF array[middle] < target THEN
         left = middle + 1
      ELSE
         right = middle - 1
      END IF

   END WHILE

   RETURN 'Not Found'

END FUNCTION
```



```
public class BinarySearch {
    public static int binarySearch(int[] array, int target) {
        int left = 0;
        int right = array.length - 1;

        while (left <= right) {
            int middle = left + (right - left) / 2;

            if (array[middle] == target) {
                return middle;
            } else if (array[middle] < target) {
                left = middle + 1;
            } else {
                right = middle - 1;
            }
        }

        return -1; // Not Found
    }

    public static void main(String[] args) {
        int[] sortedArray = {2, 3, 4, 10, 40};
        int target = 10;
        int result = binarySearch(sortedArray, target);

        if (result == -1) {
            System.out.println("Element not found");
        } else {
            System.out.println("Element found at index: " + result);
        }
    }
}
```