

Problem 6: Given two sorted arrays of size m and n respectively, you are tasked with finding the element that would be at the k th position of the final sorted array.

```
def find_kth_element(array1, array2, k):
```

```
    m, n = len(array1), len(array2)
```

```
    i, j = 0, 0
```

```
    count = 0
```

```
    while i < m and j < n:
```

```
        if array1[i] <= array2[j]:
```

```
            current_element = array1[i]
```

```
            i += 1
```

```
        else:
```

```
            current_element = array2[j]
```

```
            j += 1
```

```
    count += 1
```

```
    if count == k:
```

```
        return current_element
```

```
    while i < m:
```

```
        count += 1
```

```
    if count == k:
```

```
        return array1[i]
```

```
    i += 1
```

```
    while j < n:
```

```
        count += 1
```

```
    if count == k:
```

```
        return array2[j]
```

```
    j += 1
```

```
    return "Error: k exceeds the total number of elements."
```

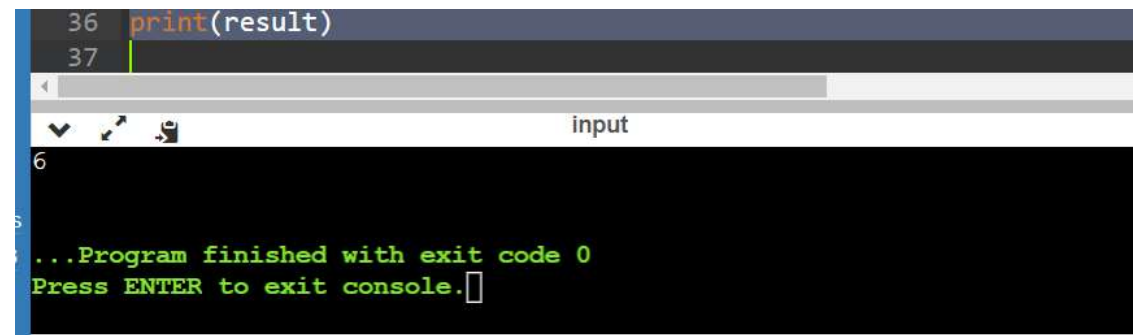
```
array1 = [2, 3, 6, 7, 9]
```

```
array2 = [1, 4, 8, 10]
```

```
k = 5
```

```
result = find_kth_element(array1, array2, k)
```

```
print(result)
```

A screenshot of a code editor and its console output. The code editor shows two lines of Python code: line 36 with `print(result)` and line 37 with a cursor. Below the code editor is a console window with a title bar that says "input". The console shows the number "6" on the first line, followed by a second line with the text "...Program finished with exit code 0" and "Press ENTER to exit console." with a cursor at the end.

```
36 print(result)
37
input
6
...Program finished with exit code 0
Press ENTER to exit console.
```