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# Software Testing Mid Lab

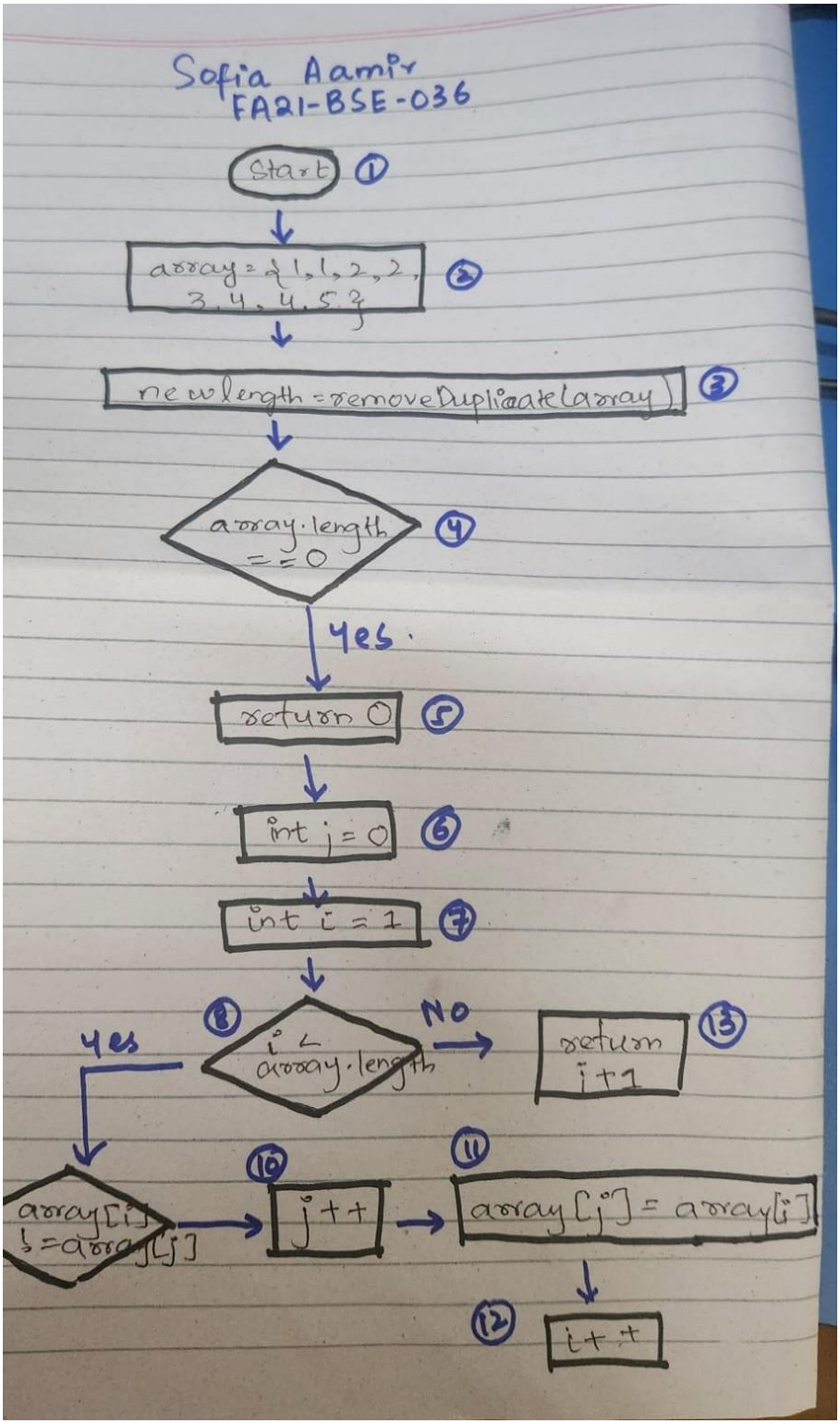
## Contents



## Algorithm 3:

```
import java.util.Arrays;

public class RemoveDuplicates {

 public static void main(String[] args) {

 int[] array = {1, 1, 2, 2, 3, 4, 4, 5};

 int newLength = removeDuplicates(array);

 System.out.println("Array after removing duplicates: " +

Arrays.toString(Arrays.copyOf(array, newLength)));

 }

 public static int removeDuplicates(int[] array) {

 if (array.length == 0) return 0;

 int j = 0;

 for (int i = 1; i < array.length; i++) {

 if (array[i] != array[j]) {

 j++;

 array[j] = array[i];

 }

 }

 return j + 1;

 }

}
```

- Control Flow Graph:



- Test Paths:

1-2-3-4-5-6-7-8(yes)-10-11-12

1-2-3-4-5-6-7-8(no)-13

1-2-3-4-5-6-7-8(yes)-10-11-12

1-2-3-4-5-6-7-8(no)-13

- Test Cases:

| ID | Description | Test Input | Expected Result | Actual Result | Result |
|---|---|---|---|---|---|
| TC-01 | No duplicates in the array | [1, 2, 3, 4, 5,6,7,8] | Array after removing duplicates: [1, 2, 3, 4, 5,6,7,8] | Array after removing duplicates: [1, 2, 3, 4, 5,6,7,8] | Pass |
| TC-02 | All duplicates in the array | [7,7,7,7,7] | Array after removing duplicates: [7] | Array after removing duplicates: [7] | Pass |
| TC-03 | Some duplicates in the array | [1, 1, 2, 2, 3, 4, 4, 5] | Array after removing duplicates: [1, 2, 3, 4, 5] | Array after removing duplicates: [1, 2, 3, 4, 5] | Pass |
| TC-04 | No elements in the array | [] | Array after removing duplicates: [] | Array after removing duplicates: [] | Pass |
| TC-05 | Single element in the array | [7] | Array after removing duplicates: [7] | Array after removing duplicates: [7] | Pass |
| TC-06 | Large numbers in the array | [100, 100, 200, 300, 300, 400] | Array after removing duplicates: [100, 200, 300, 400] | Array after removing duplicates: [100, 200, 300, 400] | Pass |
| TC-07 | Consecutive duplicates in the array | [2, 2, 2, 3, 4, 4, 5, 5, 6, 6, 6, 7] | Array after removing duplicates: [2, 3, 4, 5, 6, 7] | Array after removing duplicates: [2, 3, 4, 5, 6, 7] | Pass |
| TC-08 | Alternating duplicates in the array | [1, 2, 1, 2, 1, 2, 1, 2] | Array after removing duplicates: [1, 2] | Array after removing duplicates: [1, 2, 1, 2, 1, 2, 1, 2] | Fail |
| TC-09 | Unsorted array with duplicates in the array | [4, 1, 2, 4, 3, 1] | Array after removing duplicates: [1, 2, 3, 4] | Array after removing duplicates: [4, 1, 2, 4, 3, 1] | Fail |
| TC-10 | Mixed positive and negative numbers in the array | [-3, -2, -2, -1, 0, 0, 1, 1, 2, 3] | Array after removing duplicates: [-3, -2, -1, 0, 1, 2, 3] | Array after removing duplicates: [-3, -2, -1, 0, 1, 2, 3] | Pass |