# LAB EXAM

**1. Write a program to read the elements into an array and print it. Remove the duplicate elements in the array and return the new length of the array and print the elements.**

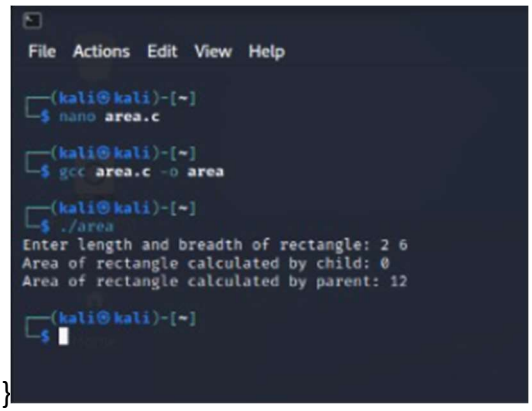
```
package copexam.demo;

import java.util.Scanner;

public class DuplicateMain {

     public static int removeDuplicates(int[] arr) {
    int newLength = arr.length;



    for (int i = 0; i < newLength; i++) {
       for (int j = i + 1; j < newLength; j++) {
          if (arr[i] == arr[j]) {
                for (int k = j; k < newLength - 1; k++) {
              arr[k] = arr[k + 1];
             }
             newLength--;
             j--;
          }
       }
    }
    System.out.print("Unique elements: ");
    for (int i = 0; i < newLength; i++) {
       System.out.print(arr[i] + " ");
    }
    System.out.println();
```

```
        // Return the new length of the array
        return newLength;
    }
public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);


    System.out.print("Enter the number of elements in the array: ");
    int n = scanner.nextInt();
    int[] arr = new int[n];
    System.out.print("Enter the elements of the array: ");
    for (int i = 0; i < n; i++) {
        arr[i] = scanner.nextInt();
    }


    System.out.print("Original array: ");
    for (int element : arr) {
        System.out.print(element + " ");
    }
    System.out.println();


    int newLength = removeDuplicates (arr);
    System.out.println("New length of the array: " + newLength);
}
}
```


**2. Write a C Program to create a child process which calculates the area of rectangle and parent process will prints the Area result after the child execution completed. Implement it using fork system call. Area = Length x Breadth.**

```
#include <stdio.h>
#include <unistd.h>

int main() {
   int area, length, breadth;
   pid_t pid;

   printf("Enter length and breadth of rectangle: ");
   scanf("%d %d", &length, &breadth);

   pid = fork();

   if (pid == 0) {

      area = length * breadth;
      printf("Area of rectangle calculated by child: %d\n", area);
   } else {
      wait(NULL);
      printf("Area of rectangle calculated by child: %d\n", area);
```

```
}

return 0;
```


File Actions Edit View Help
(kali㉿kali)-[~]
$ nano area.c
(kali㉿kali)-[~]
$ gcc area.c -o area
(kali㉿kali)-[~]
$ ./area
Enter length and breadth of rectangle: 2 6
Area of rectangle calculated by child: 0
Area of rectangle calculated by parent: 12
(kali㉿kali)-[~]
$

```
}
```