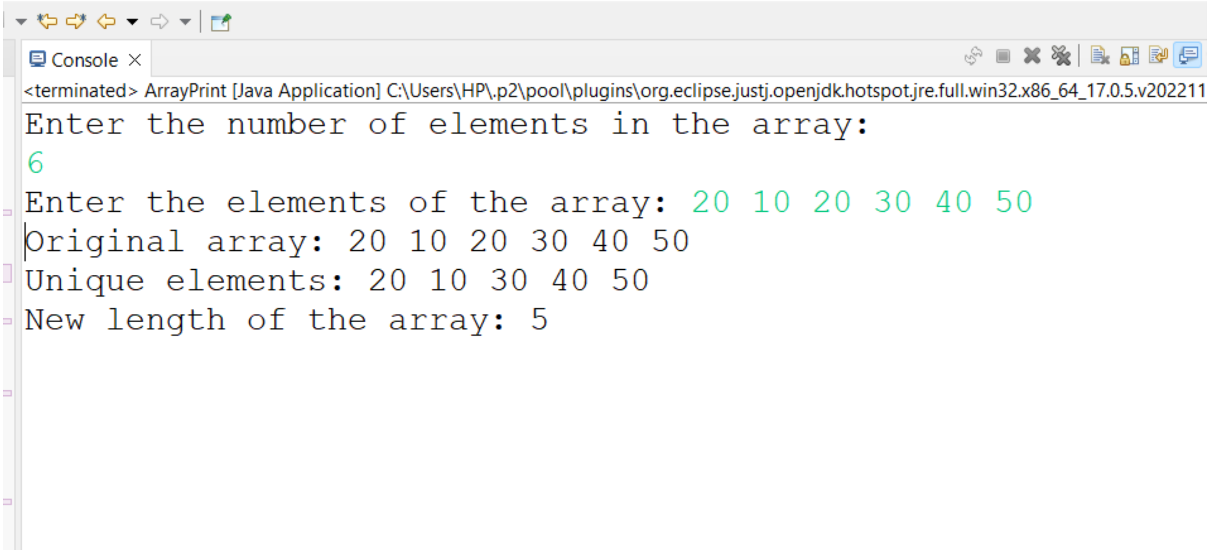
Niraj patil:

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.

Code:

```
package com.exam;

import java.util.Scanner;

public class ArrayPrint {
    public static int removeDuplicates(int[]
arr) {
        int l = arr.length;


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

        // Return the new length of the array
        return l;
    }
public static void main(String[] args) {
    @SuppressWarnings("resource")
    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);
}


}
```

Result:



```
<terminated> ArrayPrint [Java Application] C:\Users\HP\.p2\pool\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86_64_17.0.5.v202211
Enter the number of elements in the array:
6
Enter the elements of the array: 20 10 20 30 40 50
Original array: 20 10 20 30 40 50
Unique elements: 20 10 30 40 50
New length of the array: 5
```

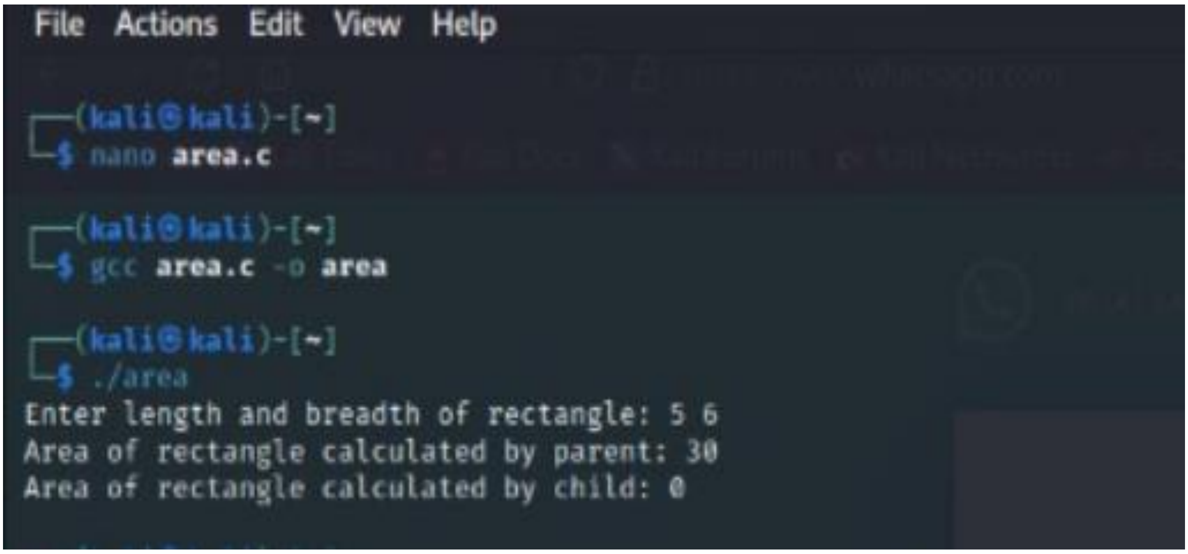
Q2)

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

    return 0;
}
```

Output:



```
┌──(kali㉿kali)-[~]
└─$ nano area.c

┌──(kali㉿kali)-[~]
└─$ gcc area.c -o area

┌──(kali㉿kali)-[~]
└─$ ./area
Enter length and breadth of rectangle: 5 6
Area of rectangle calculated by parent: 30
Area of rectangle calculated by child: 0
```