

remDuplicates

Write a C function `remDuplicates()` that takes in an array `a` and array `size` as parameters. The array `a` contains integer numbers in sorted ascending order. The function removes duplicate values in the array and returns the new array size after removal. For example, if `a={1,2,3,3,5,6,6,9,9}` with `size=10`, then `a={1,2,3,5,6,9}` and the new array size of 6 will be returned to the calling function after executing the function. There is no need to check user input errors in your program.

A sample program template is given below:

```
#include <stdio.h>
#define N 20
int remDuplicates(int a[], int size);
int main()
{
    int a[N], i, size;

    printf("Enter array size: \n");
    scanf("%d", &size);
    printf("Enter %d data:\n", size);
    for (i=0; i<size; i++)
        scanf("%d", &a[i]);
    size=remDuplicates(a, size);
    printf("remDuplicates(): \n");
    for (i=0; i<size; i++)
        printf("%d ", a[i]);
    printf("\n");
    return 0;
}
int remDuplicates(int a[], int size)
{
    /* Write your code here */
}
```

```
#include <stdio.h>
#define N 20
int remDuplicates(int a[], int size);
int main()
{
    int a[N], i, size;

    printf("Enter array size: \n");
    scanf("%d", &size);
    printf("Enter %d data:\n", size);
    for (i=0; i<size; i++)
        scanf("%d", &a[i]);
    size=remDuplicates(a, size);
    printf("remDuplicates(): \n");
    for (i=0; i<size; i++)
        printf("%d ", a[i]);
    printf("\n");
    return 0;
}
int remDuplicates(int a[], int size)
{
    int n, i, j;

    n = i = size-1;
    while(i>=0)
    {
        if(*(a+i)==*(a+i-1))
        {
            for(j=i; j<=n; j++)
                *(a+j-1)=*(a+j);
            n--;
        }
        i--;
    }
    return n+1;
}
```

Some sample input and output sessions are given below:

(1) Test Case 1:
Enter array size:
10
Enter 10 data:
1 2 3 3 5 6 6 6 9 9
remDuplicates():
1 2 3 5 6 9

(2) Test Case 2:
Enter array size:
5
Enter 5 data:
1 2 3 3 5
remDuplicates():
1 2 3 5

check if equal

move every element back
one space

(3) Test Case 3:
Enter array size:

2
Enter 2 data:
1 2
remDuplicates():
1 2