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#include <stdio.h>

#include <stdlib.h>

#include <math.h>

void CreateArray (char *, int);

int CheckLetters (char *, char , int );

char DisplayDuplicateLetter(char *, int);

int main(){

    int numLetters,i;

    printf("Please enter the number of letters (N)? ");

    scanf("%d",&numLetters);


    char *array;

    array = (char*)malloc(sizeof(char)*numLetters);

    CreateArray(array, numLetters);


    int controller = 0, returned;

    char guess;

    for(i=0;i<5;i++){

        fflush(stdin);

        printf("Guess the duplicate letter: ");

        scanf("%c",&guess);

        returned = CheckLetters(array,guess,numLetters);

        if (returned){

            printf("True char! Congrats!\n");

            controller = 1;

            break;

        }

    }
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        else{
            printf("Wrong character, try again!\n");
        }

    }

    if(controller)
        printf("You win!");
    else
        printf("Sorry you loose!");

    return 0;
}

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void CreateArray (char *array, int num){

    int i;

    for(i=0;i<num;i++){
        array[i] = 'A' + (rand() % 26);
    }
}

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int CheckLetters (char *array, char guess, int num){
    int i, controller=0;
    char duplicated;

    duplicated = DisplayDuplicateLetter(array, num);

    for(i=0;i<num;i++){
        if(array[i] == guess && guess == duplicated){

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        controller = 1;
        break;
    }
}

return controller;
}

char DisplayDuplicateLetter(char *array, int num){
    int i,j;
    char duplicated;

    for(i=0;i<num;i++){
        for(j=i+1;j<num;j++){
            if (array[j] == array[i]){
                duplicated = array[i];
            }
        }
    }

    printf("The duplicate letter: %c",duplicated);

}

```