



Software Engineering Lab

Home ► My courses ► Previous Years ► 2020-21 ► Spring Semester (2020-21) ►
Software Engineering Lab ► Class Test 3 ► Class Test 3

Started on Wednesday, 31 March 2021, 3:30 PM

State Finished

Completed on Wednesday, 31 March 2021, 3:42 PM

Time taken 12 mins 8 secs

Grade 20.00 out of 20.00 (100%)

Question 1

Complete

Mark 10.00 out of
10.00

Flag question

Consider the following c function for checking whether the input string "S[]" of length "n" is of the form aa, where a is any string. The function returns 1 if the "S[]" is of the form aa, 0 otherwise. However, the function has bug. Write a test case with inputs "S[]" and "n" and expected return value which detects the bug.

Note that in the test cases "n" is indeed the length of the string "S[]".

```
int checkaa(char S[], int n) {  
    int i, j = n/2 + 1;  
    for(i=0; i < (n/2); i++) {  
        if(S[i] == S[j]) j++;  
        else return 0;  
    }  
    return 1;  
}
```

S[] = "abab"

n = 4

Expected = 1

Returns = 0 (matches first character (index 0) with fourth character (index 3) and they are not same, hence returns 0)

Bug is in setting j to (n/2)+1

Comment:

correct

Question 2

Complete

Mark 10.00 out of
10.00

Consider the following c function for sorting an input integer array "arr[]" containing "n" elements. The sorting function has bug. Write a test case with inputs "arr[]" and "n" and expected output "arr[]" which detects the bug.

Note that in the test cases “n” is indeed the length of the array “arr”.

```
void Sort(int arr[], int n)
{
    int i, j, min_idx, temp;
    for (i = 0; i < n - 1; i++)
    {
        min_idx = i;
        for (j = i+1; j < n - 1; j++)
            if (arr[j] < arr[min_idx]) min_idx = j;
        temp = arr[min_idx];
        arr[min_idx] = arr[i];
        arr[i] = temp;
    }
}
```

arr[] = 4 3 2 1

n = 4

Expected = 1 2 3 4

Actual = 2 3 4 1 (it only checks for the minimum index till the last 2nd position and hence the number at last position will not reach its correct place)

Comment:
correct

Finish review

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1 **2**

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Finish review