

# NPTEL ASSIGNMENT -

## Problem Solving Through Programming In C

### WEEK 7 – MCQ QUIZ

## Week 7: Assignment 7

The due date for submitting this assignment has passed.

Due on 2023-09-13, 23:59 IST.

Assignment submitted on 2023-09-13, 23:36 IST

1) Which of the following statements are correct?

1 point

- 1) A string is a collection of characters terminated by '\0'.
- 2) The format specifier %s is used to print a string.
- 3) The length of the string can be obtained by strlen().
- 4) strcon() function is used to join two strings.

- ☐ a) 1,2  
☒ b) 1,2,3  
☐ c) 2,4  
☐ d) 1,3

Yes, the answer is correct.

Score: 1

Accepted Answers:

b) 1,2,3

2) The right method of initializing a 2D array is

1 point

- ☒ a) `int abc[2][2] = {1, 2, 3, 4}`  
☐ b) `int abc[ ][ ] = {1, 2, 3, 4}`  
☐ c) `int abc[2][ ] = {1, 2, 3, 4}`  
☐ d) all of the above

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) `int abc[2][2] = {1, 2, 3, 4}`

3) Array passed as an argument to a function is interpreted as

1 point

- ☐ a) Address of all the elements in an array  
☐ b) Value of the first element of the array  
☒ c) Address of the first element of the array  
☐ d) Number of element of the array

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) Address of the first element of the array

4)

```

What will be the output?
#include <stdio.h>
int main()
{
    int disp[3][4] = {{5, 6, 8, 2}, {4, 5, 3, 7}, {1,10,13,15}};
    printf("%d\n", disp[2][1]);
    return 0;
}
  
```

10

Hint

Yes, the answer is correct.

Score: 1

Accepted Answers:

(Type: Numeric) 10

1 point

5) Find the output of the following C program. 1 point

```
#include <stdio.h>
int main()
{
    char a[10][8] = {"hi", "hello", "fellows"};
    printf("%s", a[2]);
    return 0;
}
```

- ☒ a) fellows
- ☐ b) h
- ☐ c) fello
- ☐ d) Compiler error

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) fellows

6) What will be the output? 1 point

```
# include <stdio.h>
int main()
{
    char str1[] = "Week-7-Assignment";
    char str2[] = {'W', 'e', 'e', 'k', '-', '7', '-', 'A', 's', 's', 'i', 'g', 'n', 'm', 'e', 'n', 't'};
    int n1 = sizeof(str1)/sizeof(str1[0]);
    int n2 = sizeof(str2)/sizeof(str2[0]);
    printf("n1 = %d, n2 = %d", n1, n2);
    return 0;
}
```

- ☒ a) n1=18, n2=17
- ☐ b) n1=18, n2=18
- ☐ c) n1=17, n1=17
- ☐ d) n1=17, n2=18

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) n1=18, n2=17

7) Consider the following C program segment: 1 point

```
#include<stdio.h>
#include<string.h>
int main()
{
    char p[20];
    char s[] = "string";
    int length = strlen(s);
    int i;
    for (i = 0; i < length; i++)
        p[i] = s[length - i];
    printf("%s", p);
    return 0;
}
```

The output would be-

- ☐ a) gnirts
- ☐ b) gnirt
- ☐ c) string
- ☒ d) no output is printed

Yes, the answer is correct.

Score: 1

Accepted Answers:

d) no output is printed

8) If the starting address of an float array Arr[10][10] is 2000, what would be the memory address of the element Arr[5][6]? (float takes 4 bytes of memory) **1 point**

- ☐ a) 2268
- ☐ b) 2120
- ☒ c) 2224
- ☐ d) 2144

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) 2224

9) In C, the placement of elements of a two dimensional array is **1 point**

- ☒ a) Row wise
- ☐ b) Column wise
- ☐ c) Diagonal wise
- ☐ d) Bottom to top wise

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) Row wise

10) What will be the value of 'i' after the execution of the C code fragment given below?

```
static char str1[] = "dills";
static char str2[20];
static char str3[] = "daffo";
int i;
i = strcmp(strcat(str3, strcpy(str2, str1)), "daffodills");
```

Hint

Yes, the answer is correct.

Score: 1

Accepted Answers:

(Type: Numeric) 0

**1 point**

# WEEK 7 – PROGRAMMING ASSIGNMENT

## Week 7 : Programming Assignment 1

**Due on 2023-09-14, 23:59 IST**

Write a C Program to Count Number of Uppercase and Lowercase Letters in a given string. The given string may be a word or a sentence.

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	Problem Solving through Programming in C.	Uppercase Letters : 4\n Lowercase Letters : 31	Uppercase Letters : 4\n Lowercase Letters : 31	Passed
Test Case 2	AICTE Approved FDP Course	Uppercase Letters : 10\n Lowercase Letters : 12	Uppercase Letters : 10\n Lowercase Letters : 12	Passed

The due date for submitting this assignment has passed.

2 out of 2 tests passed.

You scored 100.0/100.

**Assignment submitted on 2023-09-14, 19:41 IST**

Your last recorded submission was :

```

1 #include<stdio.h>
2 int main() {
3     int upper = 0, lower = 0;
4     char ch[100];
5     scanf("%[^\n]s", ch); /*A word or a sentence is accepted from test case data */
6
7     /* Complete the remaining part of the code to store number of uppercase letters
8     in the variable upper and lowercase letters in variable lower.
9     The print part of already written. You can declare any variable if necessary */
10    int i = 0;
11    while (ch[i] != '\0')
12    {
13        if (ch[i] >= 'A' && ch[i] <= 'Z')
14            upper++;
15        if (ch[i] >= 'a' && ch[i] <= 'z')
16            lower++;
17        i++;
18    }
19
20    printf("Uppercase Letters : %d\n", upper); /*prints number of uppercase letters */
21    printf("Lowercase Letters : %d", lower); /*prints number of lowercase letters */
22
23    return (0);
24 }
```

## Week 7 : Programming Assignment 2

Due on 2023-09-14, 23:59 IST

Write a C program to find the sum of all elements of each row of a matrix.

Example: For a matrix

```
4 5 6
6 7 3
1 2 3
```

The output will be

```
15
16
6
```

Private Test cases used for evaluation

	Input	Expected Output	Actual Output	Status
Test Case 1	<pre>3 2 4 4 5 5 6 6</pre>	<pre>8\n 10\n 12</pre>	<pre>8\n 10\n 12\n</pre>	Passed
Test Case 2	<pre>3 4 1 -1 2 -2 5 -5 7 -7 8 -8 6 -6</pre>	<pre>0\n 0\n 0</pre>	<pre>0\n 0\n 0\n</pre>	Passed

The due date for submitting this assignment has passed.

2 out of 2 tests passed.

You scored 100.0/100.

Assignment submitted on 2023-09-14, 19:40 IST

Your last recorded submission was :

```
1 #include <stdio.h>
2 int main()
3 {
4     int matrix[20][20];
5     int i,j,r,c;
6
7     scanf("%d",&r); //Accepts number of rows
8     scanf("%d",&c); //Accepts number of columns
9
10    for(i=0;i< r;i++) //Accepts the matrix elements from the test case data
11    {
12        for(j=0;j< c;j++)
13        {
14            scanf("%d",&matrix[i][j]);
15        }
16    }
17    /*Complete the code to print the sum of each rows. Use the printf() statement as
18    printf("%d\n",sum); Where sum is the sum of a row.
19    */
20    int sum;
21    for(i=0;i< r;i++)
22    {
23        sum=0;
24        for(j=0;j< c;j++)
25        {
26            // printf("%d\t",matrix[i][j]);
27            sum += matrix[i][j];
28        }
29        printf("%d\n",sum);
30    }
31 }
```

## Week 7 : Programming Assignment 3

Due on 2023-09-14, 23:59 IST

Write a C program to find subtraction of two matrices i.e. matrix\_A - matrix\_B = matrix\_C.

If the given matrix are

2 3 5 and 1 5 2 Then the output will be 1 -2 3

4 5 6          2 3 4                          2 2 2

6 5 7          3 3 4                          3 2 3

The elements of the output matrix are separated by one blank space

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	<pre> 3 4 5 6 7 8 3 2 5 6 1 3 1 9 5 2 9 3 1 2 5 1 2 3 4 1 </pre>	<pre> 3 -3 4 7 \n 1 -3 4 4 \n -1 0 5 4 </pre>	<pre> 3 -3 4 7 \n 1 -3 4 4 \n -1 0 5 4 \n </pre>	Passed

The due date for submitting this assignment has passed.

1 out of 1 tests passed.

You scored 100.0/100.

Assignment submitted on 2023-09-14, 19:40 IST

Your last recorded submission was :

```

1 #include <stdio.h>
2 int main()
3 {
4     int matrix_A[20][20], matrix_B[20][20], matrix_C[20][20];
5     int i,j,row,col;
6     scanf("%d",&row); //Accepts number of rows
7     scanf("%d",&col); //Accepts number of columns
8
9     /* Elements of first matrix are accepted from test data */
10    for(i=0; i<row; i++)
11    {
12        for(j=0; j<col; j++)
13        {
14            scanf("%d", &matrix_A[i][j]);
15        }
16    }
17
18    /* Elements of second matrix are accepted from test data */
19
20    for(i=0; i<row; i++)
21    {
22        for(j=0; j<col; j++)
23        {
24            scanf("%d", &matrix_B[i][j]);
25        }
26    }
27
28    /* Complete the program to get the desired output. Use printf() statement as below
29    printf("%d ", matrix_C[i][j]); You can declare your own variables if required.
30    */
31    for(i=0; i<row; i++)
32    {
33        for(j=0; j<col; j++)
34        {
35
36            matrix_C[i][j] = matrix_A[i][j] - matrix_B[i][j];
37        }
38    }
39
40    for(i=0; i<row; i++)
41    {
42        for(j=0; j<col; j++)
43        {
44            printf("%d ", matrix_C[i][j]);
45        }
46        printf("\n");
47    }
48    return 0;
49 }
50

```

## Week 7 : Programming Assignment 4

Due on 2023-09-14, 23:59 IST

Write a C program to print Largest and Smallest Word from a given sentence. If there are two or more words of same length, then the first one is considered. A single letter in the sentence is also consider as a word.

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	AICTE Approved FDP Course.	Largest Word is: Approved\ Smallest word is: FDP	Largest Word is: Approved\ Smallest word is: FDP\ 	Passed

The due date for submitting this assignment has passed.

1 out of 1 tests passed.

You scored 100.0/100.

Assignment submitted on 2023-09-14, 19:40 IST

Your last recorded submission was :

```

1 #include<stdio.h>
2 #include<string.h>
3 int main()
4 {
5     char str[100]={0},substr[100][100]={0};
6     //str[100] is for storing the sentence and substr[50][50] is for storing each word.
7
8     scanf("%[^\n]s", str); //Accepts the sentence from the test case data.
9
10    /* Complete the program to get the desired output.
11    The print statement should be as below
12
13    printf("Largest Word is: %s\nSmallest word is: %s\n", -----,-----);
14
15    */
16    int i=0,j=0,k=0,a,minIndex=0,maxIndex=0,max=0,min=0;
17    char c;
18    while(str[k]!='\0') //for splitting sentence into words
19    {
20        j=0;
21        while(str[k]!=' ' &&str[k]!='\0' && str[k]!='.')
22        {
23            substr[i][j]=str[k];
24            k++;
25            j++;
26        }
27        substr[i][j]='\0';
28        i++;
29        if(str[k]!='\0')
30        {
31            k++;
32        }
33    }
34    int len=i;
35    max=strlen(substr[0]);
36    min=strlen(substr[0]);
37
38    //After splitting getting length of string and finding its index having max length and index having min length
39    for(i=0;i<len;i++)
40    {
41        a=strlen(substr[i]);
42        if(a>max)
43        {
44            max=a;
45            maxIndex=i;
46        }
47        if(a<min)
48        {
49            min=a;
50            minIndex=i;
51        }
52    }
53    printf("Largest Word is: %s\nSmallest word is: %s\n",substr[maxIndex],substr[minIndex]);
54    return 0;
55 }
56
57

```