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) 1 point

Find the output of the following C program.

```
#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) 1 point

What will be the output?

```
# 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) 1 point

Consider the following C program segment:

```
#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");
```

0

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 :

```c
#include<stdio.h>
int main() {
   int upper = 0, lower = 0;
   char ch[100];
   scanf(" %[^\n]s", ch);  /*A word or a sentence is accepted from test case data */

/* Complete the remaining part of the code to store number of uppercase letters
in the variable upper and lowercase letters in variable lower.
The print part of already written. You can declare any variable if necessary */
int i = 0;
   while (ch[i] != '\0')
   {
      if (ch[i] >= 'A' && ch[i] <= 'Z')
         upper++;
      if (ch[i] >= 'a' && ch[i] <= 'z')
         lower++;
      i++;
   }

printf("Uppercase Letters : %d\n", upper); /*prints number of uppercase letters */
   printf("Lowercase Letters : %d", lower); /*prints number of lowercase letters */

   return (0);
}
```

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	3 2 4 4 5 5 6 6	8\n 10\n 12	8\n 10\n 12\n	Passed
Test Case 2	3 4 1 -1 2 -2 5 -5 7 -7 8 -8 6 -6	0\n 0\n 0	0\n 0\n 0\n	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 :

```c
#include <stdio.h>
int main()
{
    int matrix[20][20];
    int i,j,r,c;

    scanf("%d",&r); //Accepts number of rows
    scanf("%d",&c); //Accepts number of columns

    for(i=0;i< r;i++) //Accepts the matrix elements from the test case data
    {
        for(j=0;j< c;j++)
        {
            scanf("%d",&matrix[i][j]);
        }
    }
/*Complete the code to print the sum of each rows. Use the printf() statement as
 printf("%d\n",sum); Where sum is the sum of a row.
*/
    int sum;
    for(i=0;i< r;i++)
    {
        sum=0;
        for(j=0;j< c;j++)
        {
          //  printf("%d\t",matrix[i][j]);
            sum +=  matrix[i][j];
        }
        printf("%d\n",sum);
    }
}
```

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 martix 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	3 4 5 6 7 8 3 2 5 6 1 3 9 5 2 9 3 1 2 5 1 2 2 3 4 1	3 -3 4 7 \n 1 -3 4 4 \n -1 0 5 4	3 -3 4 7 \n 1 -3 4 4 \n -1 0 5 4 \n	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 :

```c
#include <stdio.h>
int main()
{
    int matrix_A[20][20], matrix_B[20][20], matrix_C[20][20];
    int i,j,row,col;
    scanf("%d",&row); //Accepts number of rows
    scanf("%d",&col); //Accepts number of columns

    /* Elements of first matrix are accepted from test data */
    for(i=0; i<row; i++)
    {
        for(j=0; j<col; j++)
        {
            scanf("%d", &matrix_A[i][j]);
        }
    }

     /* Elements of second matrix are accepted from test data */

    for(i=0; i<row; i++)
    {
        for(j=0; j<col; j++)
        {
            scanf("%d", &matrix_B[i][j]);
        }
    }

/* Complete the program to get the desired output. Use printf() statement as below
    printf("%d ", matrix_C[i][j]); You can declare your own variables if required.
*/
 for(i=0; i<row; i++)
      {
          for(j=0; j<col; j++)
          {

              matrix_C[i][j] = matrix_A[i][j] - matrix_B[i][j];
          }
      }

      for(i=0; i<row; i++)
      {
          for(j=0; j<col; j++)
          {
              printf("%d ", matrix_C[i][j]);
          }
          printf("\n");
      }
      return 0;
}

```

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\n Smallest word is: FDP	Largest Word is: Approved\n Smallest word is: FDP\n	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 :

```c
#include<stdio.h>
#include<string.h>
int main()
{
    char str[100]={0},substr[100][100]={0};
//str[100] is for storing the sentence and substr[50][50] is for storing each word.

scanf("%[^\n]s", str); //Accepts the sentence from the test case data.

/* Complete the program to get the desired output.
The print statement should be as below

printf("Largest Word is: %s\nSmallest word is: %s\n", -------,--------);

*/
    int i=0,j=0,k=0,a,minIndex=0,maxIndex=0,max=0,min=0;
    char c;
    while(str[k]!='\0')  //for splitting sentence into words
    {
        j=0;
        while(str[k]!=' '&&str[k]!='\0' && str[k]!='.')
        {
            substr[i][j]=str[k];
            k++;
            j++;
        }
        substr[i][j]='\0';
        i++;
        if(str[k]!='\0')
        {
            k++;
        }
    }
    int len=i;
    max=strlen(substr[0]);
    min=strlen(substr[0]);

    //After splitting getting length of string and finding its index having max length and index having min length
    for(i=0;i<len;i++)
    {
       a=strlen(substr[i]);
       if(a>max)
        {
            max=a;
            maxIndex=i;
        }
        if(a<min)
        {
            min=a;
            minIndex=i;
        }
    }
    printf("Largest Word is: %s\nSmallest word is: %s\n",substr[maxIndex],substr[minIndex]);
    return 0;
}
```