

National Institute of Technology, Patna



EE lab CSL (2601)

Assignment no 10

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Q.1. WAP in C to input your name and then count and display the number of vowels present in the name.

```
#include <stdio.h>
```

```
#include <string.h>
```

```
int main() {
```

```
    char name[40];
```

```
    int i, count = 0;
```

```
    printf("Enter your name : ");
```

```
    gets(name);
```

```
    for (i = 0 ; i < strlen(name) ; i++) {
```

```
        if (name[i] == 'a' || name[i] == 'A') {
```

```
            count++;
```

```
        }
```

```
        if (name[i] == 'e' || name[i] == 'E') {
```

```
            count++;
```

```
        }
```

```
        if (name[i] == 'i' || name[i] == 'I') {
```

```
            count++;
```

```
        }
```

```
        if (name[i] == 'o' || name[i] == 'O') {
```

```
            count++;
```

```
        }
```

```
        if (name[i] == 'u' || name[i] == 'U') {
```

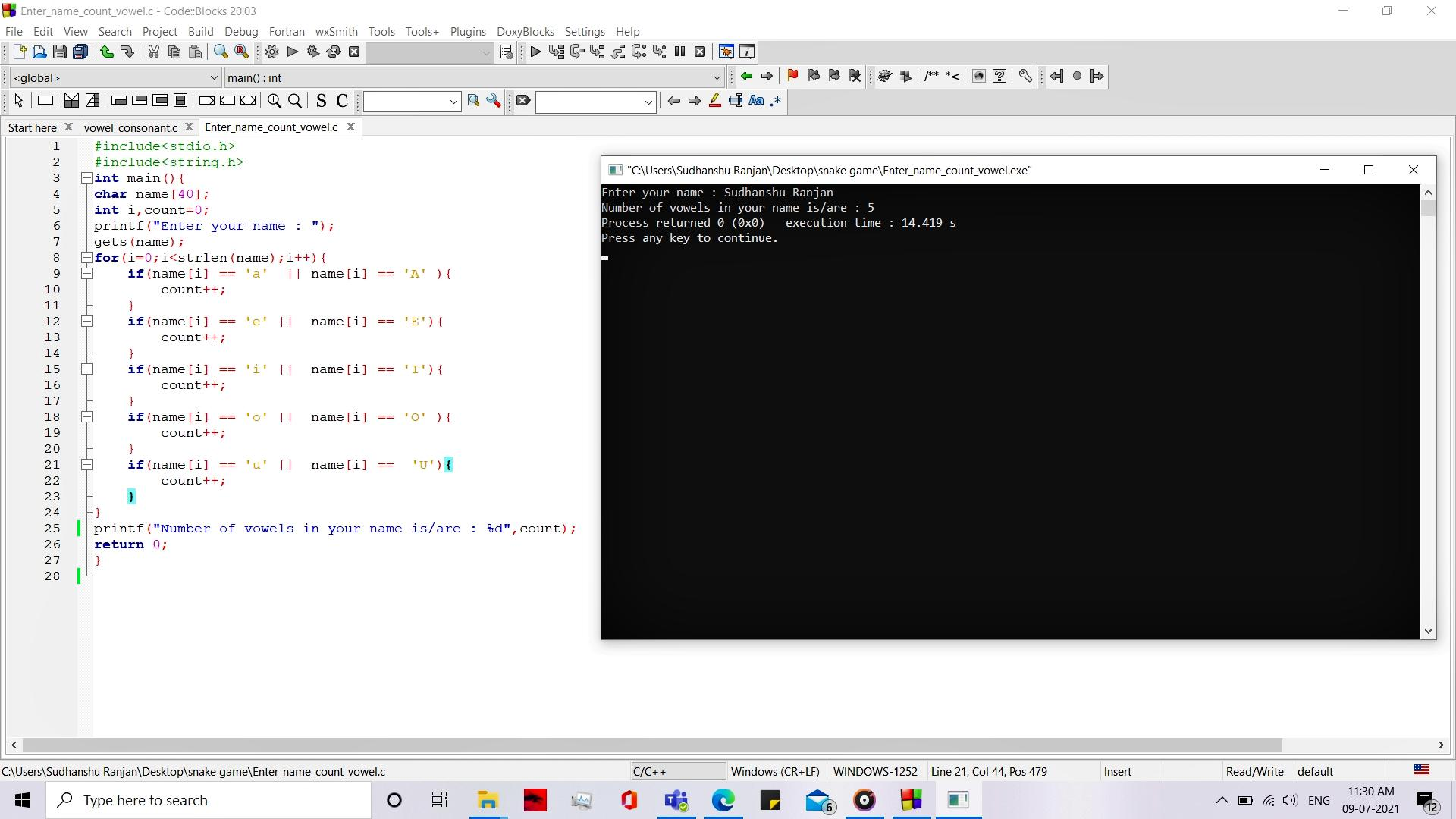
```
            count++;
```

```
        } }
```

```
    printf("Number of vowels in your name is/are : %d", count);
```

```
    return 0;
```

```
}
```



Q.2. WAP in C to input your name and then display the name in upper case.

```
#include <string.h>
#include <stdio.h>

int main() {
    char name[30];
    int i;
    printf("Enter your name : ");
    gets(name);
    char upper[30];
    printf("your name in upper case : ");
    for (i = 0; i < name[i] != '\0'; i++) {
        if (name[i] <= 'z' && name[i] >= 'a') {
            upper[i] = name[i] - 32;
            printf("%c", upper[i]);
        }
    }
    return 0;
}
```

FileEditSelectionViewGoRunTerminalHelp

CPH JUDGE: RESULTS

This document does not have a CPH problem associated with it.

Create Problem

How to use this extension

0.0 Kbps

0.0 Kbps

lower_to_upper_case.c - Visual Studio Code

Small_to_capital.clower_to_upper_case.c

C: > Users > Sudhanshu Ranjan > Desktop > snake game > lower_to_upper_case.c > main()

```
1 #include<string.h>
2 #include<stdio.h>
3 int main(){
4     char name[30];
5     int i;
6     printf("Enter your name : ");
7     gets(name);
8     char upper[30];
9     printf("your name in upper case : ");
10    for(i=0;i< name[i]!='\0';i++){
11        if(name[i]<='z' && name[i]>='a'){
12            upper[i] = name[i] - 32;
13            printf("%c",upper[i]);
14        }
15    }
16    return 0;
17 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Code

Windows PowerShell

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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS C:\Users\Sudhanshu Ranjan> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game" ; if (\$?) { gcc lower_to_upper_case.c -o lower_to_upper_case } ; if (\$?) { .\lower_to_upper_case }
Enter your name : sudhanshurajan
your name in upper case : SUDHANSHURANJAN
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

Run Testcases

00

Live Share

Ln 15, Col 6

Spaces: 4

UTF-8

CRLF

C

Win32

09:36 AM

08-07-2021

Q.3. WAP in C to check whether the given string is palindrome or not.

```
#include <string.h>
#include <stdio.h>
int main() {
    char string[30], reversed[30];
    int i, count = 0, temp;
    printf("Enter the string to check whether it is
    palindrome or not : ");
    gets(string);
    for (i = 0; string[i] != '\0'; i++) {
        count++;
    }
    for (i = 0; i < count/2; i++) {
        if (string[i] == string[count - i - 1]) {
            temp++;
        }
        if (temp == i) {
            printf("Given string is palindrome");
        }
        if (temp != i) {
            printf("Given string is not palindrome");
        }
    }
    return 0;
}
```


FileEditSelectionViewGoRunTerminalHelp

CPH JUDGE: RESULTS

This document does not have a CPH problem associated with it.

Create Problem

How to use this extension

0.0 Kbps0.0 Kbps

Type here to search

palindrome_string.c - Visual Studio Code

lower_to_upper_case.cpalindrome_string.c

C: > Users > Sudhanshu Ranjan > Desktop > snake game > palindrome_string.c > ...

```
1 #include<string.h>
2 #include<stdio.h>
3 int main(){
4     char string[30],reversed[30];
5     int i,count=0,temp;
6     printf("Enter the string to check whether it is palindrome of not :");
7     gets(string);
8     for(i=0;string[i] != '\0';i++){
9         count++;
10    }
11    for(i=0;i<count/2;i++){
12        if(string[i] == string[count-i-1]){
13            temp++;
14        }
15    }
16    if(temp==i){
17        printf("Given string is palindrome");
18    }
19    if(temp!=i){
20        printf("Given string is not palindrome");
21    }
22    return 0;
23 }
24
```

PROBLEMSOUTPUTDEBUG CONSOLETERMINAL

Code

Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS C:\Users\Sudhanshu Ranjan> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game\" ; if (\$?) { gcc palindrome_string.c -o palindrome_string } ; if (\$?) { .\palindrome_string }

Enter the string to check whether it is palindrome of not :madam

Given string is palindrome

PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

Run Testcases00Live Share

Ln 1, Col 1Spaces: 4UTF-8CRLFWin32

09:40 AM08-07-2021

Q.4) WAP in C to find the maximum element of an array using function.

```
#include <stdio.h>

void greatestNum (int num[], int m) {
    for (int i = 0; i < m; ++i) {
        if (num[0] < num[i])
        {
            num[0] = num[i];
        }
    }
    printf ("Largest is : %d", num[0]);
}

int main () {
    int m;
    printf ("Enter the number of elements to find\n", 'greatest : ');
    scanf ("%d", &m);
    int num[m];
    for (int i = 0; i < m; i++) {
        printf ("Enter the number %d : ", i+1);
        scanf ("%d", &num[i]);
    }
    greatestNum (num, m);
    return 0;
}
```

CPH JUDGE: RESULTS

This document does not have a CPH problem associated with it.

+ Create Problem

How to use this extension

lower_to_upper_case.c

palindrome_string.c

max_min_function.cpp

greatest_number_array.c

C: > Users > Sudhanshu Ranjan > Desktop > snake game > C greatest_number_array.c > ...

```
1 #include<stdio.h>
2 void greatestNum(int num[],int m){
3     for(int i=0;i<m;++i){
4         if(num[0]<num[i])
5         {
6             num[0]=num[i];
7         }
8     }
9     printf("Largest is : %d",num[0]);
10 }
11 int main(){
12     int m;
13     printf("Enter the number of elements to find greatest :");
14     scanf("%d",&m);
15     int num[m];
16     for(int i=0;i<m;i++){
17         printf("Enter the number %d : ",i+1);
18         scanf("%d",&num[i]);
19     }
20     greatestNum(num,m);
21     return 0;
22 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Code

Windows PowerShell
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Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS C:\Users\Sudhanshu Ranjan> cd "c:\Users\Sudhanshu Ranjan\Desktop\snake game\" ; if (\$?) { gcc greatest_number_array.c -o greatest_number_array } ; if (\$?) { .\greatest_number_array }
Enter the number of elements to find greatest :5
Enter the number 1 : 7
Enter the number 2 : 22
Enter the number 3 : 6
Enter the number 4 : 3
Enter the number 5 : 90
Largest is : 90
PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

Run Testcases

0 0 0

Live Share

1.0 Kbps

0.4 Kbps

Ln 1, Col 1

Spaces: 4

UTF-8

CRLF

C

Win32

Q.5) WAP in C to search an element in an array using function -

```
#include <stdio.h>
```

```
void SearchElement (int search, int n[15]) {
```

```
    int a = 0;
```

```
    for (int i = 0; i < 15; i++) {
```

```
        if (n[i] == search) {
```

```
            a = i + 1;
```

```
        }
```

```
    } else {
```

```
        a = search;
```

```
    }
```

```
    }
```

```
    if (a >= 0 && a <= 15) {
```

```
        printf ("Element is found, Location of the number  
in the array is %d", a);
```

```
    }
```

```
    else {
```

```
        printf ("Location of the number in the array  
is not found");
```

```
    }
```

```
}
```

```
int main () {
```

```
    int n[15] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15};
```

```
    int search, a = 0;
```

```
    printf ("Enter the number you want to search: \n");
```

```
    scanf ("%d", &search);
```

```
    SearchElement (search, n);
```

```
    return 0;
```

```
}
```


CPH JUDGE: RESULTS

This document does not have a CPH problem associated with it.

Create Problem

How to use this extension

Json

lower_to_upper_case.c

palindrome_string.c

max_min_function.cpp

greatest_number_array.c

searching_element_array_function.c

C: > Users > Sudhanshu Ranjan > Desktop > snake game > C searching_element_array_function.c > ...

```
1 #include<stdio.h>
2 void SearchElement(int search,int n[15]){
3     int a=0;
4     for(int i = 0; i<15;i++){
5         if(n[i] == search){
6             a=i+1;
7         }
8         else{
9             a = search;
10        }
11    }
12    if(a>=0 && a<=15){
13        printf("Element is found, \nLocation of the number in the array is %d ", a);
14    }
15    else{
16        printf("Location of the number in the array is not found");
17    }
18 }
19 int main(){
20     int n[15] = {1,2,3,4,5,6,7,8,9,10,11,12,13,14,15};
21     int search,a =0;
22     printf("Enter the number you want to search : \n");
23     scanf("%d",&search);
24     SearchElement(search,n);
25     return 0;
26 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS C:\Users\Sudhanshu Ranjan> cd "C:\Users\Sudhanshu Ranjan\Desktop\sake game\" ; if (\$?) { gcc searching_element_array_function.c -o searching_element_array_function } ; i
f (\$?) { .\searching_element_array_function }
Enter the number you want to search :
17
Location of the number in the array is not found
PS C:\Users\Sudhanshu Ranjan\Desktop\sake game>

1.4 Kbps

1.5 Kbps

Run Testcases000Live ShareLn 1, Col 1Spaces: 4UTF-8CRLFWin32

Q.6) WAP in C to implement bubble sort technique using function..

```
#include <stdio.h>

Void bubbleSort (int a[], int size) {
    int temp, i, j;
    for (i = 0; i < size; i++) {
        for (j = 0; j < size - 1; j++) {
            if (a[j] > a[j+1]) {
                temp = a[j];
                a[j] = a[j+1];
                a[j+1] = temp;
            }
        }
    }
}

int main() {
    int a[30], n, i;
    printf("\n Enter the size of array : ");
    scanf("%d", &n);
    printf("\n Enter the array elements : \n");
    for (i = 0; i < n; i++) {
        scanf("%d", &a[i]);
    }
    printf("\n The sorted array is \n");
    for (i = 0; i < n; i++) {
        printf("%d \t", a[i]);
    }
    return 0;
}
```

CPH JUDGE: RESULTS

This document does not have a CPH problem associated with it.

Create Problem

How to use this extension

lower_to_upper_case.c

palindrome_string.c

max_min_function.cpp

greatest_number_array.c

searching_element_array_function.c

Bubble_sort_function.c

C: > Users > Sudhanshu Ranjan > Desktop > snake game > C Bubble_sort_function.c > main()

```
1 #include<stdio.h>
2 void bubbleSort(int a[],int size){
3     int temp,i,j;
4     for(i=0;i<size;i++){
5         for(j=0;j<size-1;j++){
6             if(a[j]>a[j+1]){
7                 temp=a[j];
8                 a[j]=a[j+1];
9                 a[j+1]=temp;
10            }
11        }
12    }
13 }
14 int main(){
15     int a[30],n,i;
16     printf("\n Enter the size of the array : ");
17     scanf("%d",&n);
18     printf("\n Enter the array elements: \n");
19     for(i=0;i<n;i++){
20         scanf("%d",&a[i]);
21         bubbleSort(a,n);
22         printf("\n The sorted array is\n");
23         for(i=0;i<n;i++){
24             printf("%d\t",a[i]);
25         }
26     }
27 }
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Enter the size of the arrays

Enter the array elements:

2 6 3 9 3

The sorted array is

2 3 3 6 9

PS C:\Users\Sudhanshu Ranjan\Desktop\snake game>

0.0 Kbps

0.0 Kbps

Ln 22, Col 38 Spaces: 2 UTF-8 CRLF C Win32

Q.7.1 WAP to find the sum of two matrices using function.

```
#include <stdio.h>
```

```
void SumofMatrix (int a[10][10], int b[10][10], int r, int c) {
```

```
    int sum[10][10];
```

```
    for (int j=0; j<r; j++) {
```

```
        for (int k=0; k<c; k++) {
```

```
            sum[j][k] = a[j][k] + b[j][k];
```

```
        }
```

```
    }
```

```
    for (int i=0; i<r; i++) {
```

```
        for (int j=0; j<c; j++) {
```

```
            printf ("%d\t", sum[i][j]);
```

```
        }
```

```
        printf ("\n");
```

```
    }
```

```
int main() {
```

```
    int a[10][10], b[10][10], r, c;
```

```
    printf ("Enter the number of rows : ");
```

```
    scanf ("%d", &r);
```

```
    printf ("Enter the number of columns : ");
```

```
    scanf ("%d", &c);
```

```
    printf ("Enter the first matrix : \n");
```

```
    for (int i=0; i<r; i++) {
```

```
        for (int j=0; j<c; j++) {
```

```
            scanf ("%d", &a[i][j]);
```

```
        }
```

```
    }
```



```
printf("Enter the second matrix: \n");
```

```
for (int i=0; i<r; i++) {
```

```
    for (int j=0; j<c; j++) {
```

```
        scanf("%d", &b[i][j]);
```

```
    }
```

```
}
```

```
printf("Sum of the matrices A and B is : \n");
```

```
sumofMatrix(a, b, r, c);
```

```
return 0;
```

```
}
```


sum_of_matrices.c - Code::Blocks 20.03

FileEditViewSearchProjectBuildDebugFortranwxSmithToolsTools+PluginsDoxyBlocksSettingsHelp

<global>

main0 : int

S

C

Management

ProjectsFilesFSy

CA\

Mask:

CA\

Anaconda

Intel

MinGW

MSI

PerLogs

Program Files

Program Files (x86)

Recovery

src

User Manual

Users

Windows

Start here

*sum_of_matrices.c

1#include<stdio.h>

2void SumofMatrix(int a[10][10],int b[10][10],int r,int c){

3int sum[10][10];

4for(int j=0;j<r;j++){

5for(int k=0;k<c;k++){

6sum[j][k] = a[j][k]+b[j][k];

7}

8}

9for(int i=0;i<r;i++){

10for(int j=0;j<c;j++){

11printf("%d\t",sum[i][j]);

12}

13printf("\n");}

14}

15int main(){

16int a[10][10],b[10][10],r,c;

17printf("Enter the number of rows : ");

18scanf("%d",&r);

19printf("Enter the number of columns : ");

20scanf("%d",&c);

21printf("Enter the first matrix : \n");

22for(int i=0;i<r;i++){

23for(int j=0;j<c;j++){

24scanf("%d",&a[i][j]);

25}

26}

27printf("\nEnter the second matrix : \n");

28for(int i=0;i<r;i++){

29for(int j=0;j<c;j++){

30scanf("%d",&b[i][j]);

31}

32}

33printf("Sum of the matrices A and B is : \n ");

34SumofMatrix(a,b,r,c);

35return 0;

36}

"C:\Users\Sudhanshu Ranjan\Desktop\sake game\sum_of_matrices.exe"

Enter the number of rows : 3

Enter the number of columns : 3

Enter the first matrix :

2 3 1

1 2 3

1 2 4

Enter the second matrix :

2 3 1

1 2 3

1 2 4

Sum of the matric A and B is :

462

246

248

Process returned 0 (0x0) execution time : 36.552 s

Press any key to continue.

C:\Users\Sudhanshu Ranjan\Desktop\sake game\sum_of_matrices.c

C/C++

Windows (CR+LF)

WINDOWS-1252

Line 34, Col 26, Pos 929

Insert

Modified

Read/Write

default

11:28 AM

08-07-2021