

Data structure day-2

1. Write c program to calculate sum of element ?

```
#include<Stdio.h>
int main()
{

    int n,i,sum=0;
    int a[n];
    printf("enter the array size");
    scanf("%d",&n);
    printf("enter array element:\n");

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

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

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

        sum=sum+a[i];
    }

    printf("sum of array=%d\n",sum);

    return 0;
}
```

```
C:\Users\perug\OneDrive\Doi  X + v
enter the array size5
enter array element:
1
2
3
4
5
sum of array=15

-----
Process exited after 11.63 seconds with return value 0
Press any key to continue . . . |
```

2.write c program to merage two array?

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

```
int main()
```

```
{
```

```
    int a[5],b[5],c[10];
```

```
    int i;
```

```
    printf("enter elements of array 1:");
```

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

```
    {
```

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

```
    }
```

```
    printf("enter elements of array 2:");
```

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

```
    {
```

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

```
    }
```

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

```
    {
```

```
        c[i]=a[i];
```

```
        c[i+5]=b[i];
```

```
    }
```

```

    for(i=0;i<10;i++)
    {
        printf("%d",c[i]);
    }
    return 0;
}

```

```

C:\Users\perug\OneDrive\Doi >
enter elements of array 1:1
2
3
4
5
enter elemnets of array 2:1
2
3
4
5
1234512345
-----
Process exited after 13.05 seconds with return value 0
Press any key to continue . . . |

```

3.write c program to insert array elements in the middle?

```

#include<stdio.h>
int main()
{
    int arr[100];
    int i, item, pos, size=7;
    printf("Enter 7 elements: ");
    for (i = 0; i < size; i++)
        scanf("%d",&arr[i]);
    printf("Array before insertion: ");
    for (i = 0; i < size; i++)

```

```

        printf("%d ", arr[i]);
    printf("\n");
    printf("Enter the element to be inserted: ");
    scanf("%d",&item);
    printf("Enter the position at which the element is to be inserted:");
    scanf("%d",&pos);
    Size++;
    for (i = size-1; i >= pos; i--)
        arr[i] = arr[i - 1];
    arr[pos - 1] = item;
    printf("Array after insertion: ");

    for (i = 0; i < size; i++)
        printf("%d ", arr[i]);
    printf("\n");

    return 0;
}

```

```

C:\Users\perug\OneDrive\Doi >
Enter 7 elements: 1
2
3
4
5
6
7
Array before insertion: 1 2 3 4 5 6 7
Enter the element to be inserted: 8
Enter the position at which the element is to be inserted: 4
Array after insertion: 1 2 3 8 4 5 6 7

-----
Process exited after 20.02 seconds with return value 0
Press any key to continue . . . |

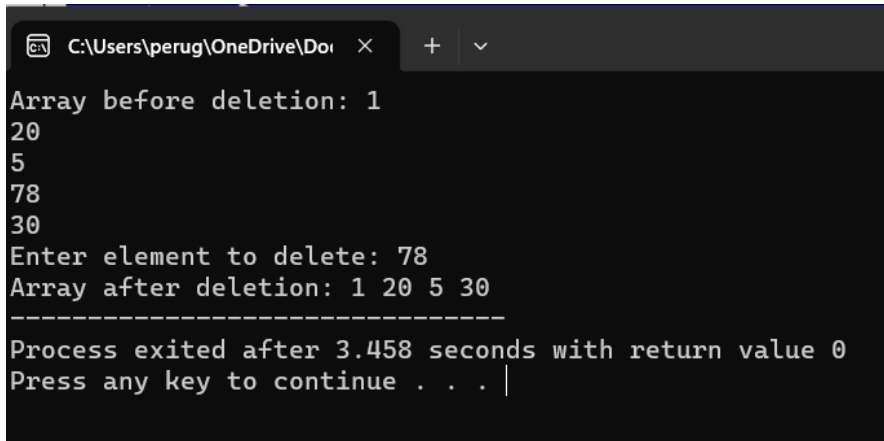
```

4.write c program to delete array elements in the middle?

```
include<stdio.h>
int main()
{
    int key, i, pos = -1, size=5;
    int arr[5] = {1, 20, 5, 78, 30};
    printf("Array before deletion: ");
    for (i = 0; i < size; i++)
        printf("%d \n", arr[i]);
    printf("Enter element to delete: ");
    scanf("%d",&key);
    for(i = 0; i < size; i++)
    {
        if(arr[i] == key)
        {
            pos = i;
            break;
        }
    }
    if(pos!=-1)
    {
        for(i = pos; i < size - 1; i++)
            arr[i] = arr[i+1];
        printf("Array after deletion: ");
        for(i = 0; i < size - 1; i++)
            printf("%d ",arr[i]);
    }
    else
```

```
    printf("Element Not Found\n");

    return 0;
}
```



```
C:\Users\perug\OneDrive\Doi >
Array before deletion: 1
20
5
78
30
Enter element to delete: 78
Array after deletion: 1 20 5 30
-----
Process exited after 3.458 seconds with return value 0
Press any key to continue . . . |
```

5.write a c program reverse string?

```
#include <stdio.h>
#include <string.h>
int main()
{
    char str[50] = "HARIKA";

    printf("The given string is =%s\n", str);

    printf("After reversing string is =%s", strrev(str));

    return 0;
}
```

```
C:\Users\perug\OneDrive\Doi  X + v
The given string is =HARIKA
After reversing string is =AKIRAH
-----
Process exited after 0.01698 seconds with return value 0
Press any key to continue . . . |
```

6.write c program to check given string is palindrome or not?

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

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

```
int main()
```

```
{
```

```
    char str[] = { "abbba" };
```

```
    int l = 0;
```

```
    int h = strlen(str) - 1;
```

```
    while (h > l) {
```

```
        if (str[l++] != str[h--]) {
```

```
            printf("%s is not a palindrome\n", str);
```

```
            return 0;
```

```
        }
```

```
    }
```

```
    printf("%s is a palindrome\n", str)
```

```
    return 0;
```

```
}
```

6.write c program to such a particular charcater in string?

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

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

```
int main()
```

```
{
```

```
    char s[1000],c;
```

```
    int i;
```

```
    printf("enter thestring:");
```

```
    gets(s);
```

```
    printf("enter the  character to be searched ");
```

```
    c=getchar();
```

```
    for(i=0;s[i];i++)
```

```
    {
```

```
        if(s[i]==c)
```

```
        {
```

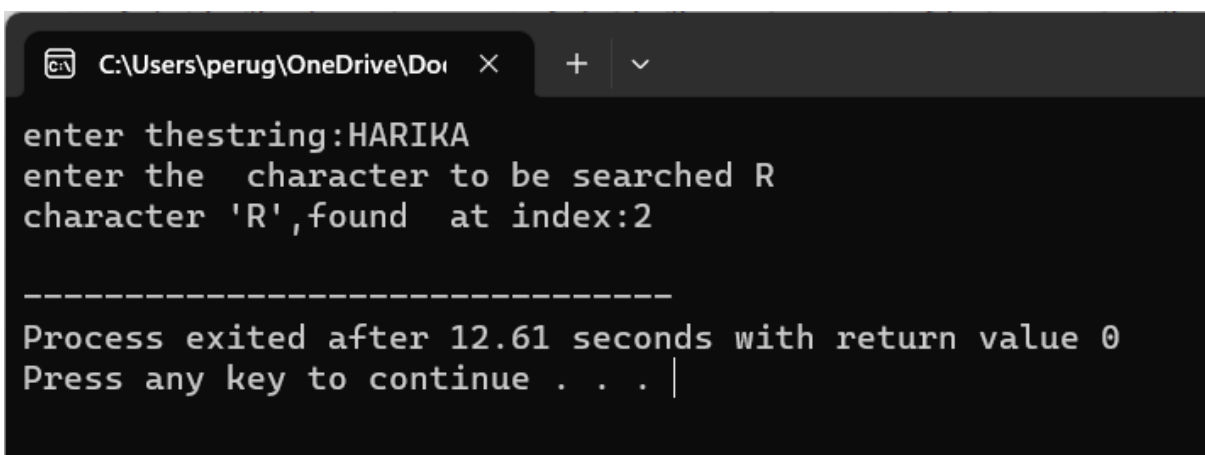
```
            printf("character '%c',found  at index:%d\n",c,i);
```

```
        }
```

```
    }
```

```
    return 0;
```

```
}
```



```
C:\Users\perug\OneDrive\Doi  X  +  v

enter thestring:HARIKA
enter the  character to be searched R
character 'R',found  at index:2

-----
Process exited after 12.61 seconds with return value 0
Press any key to continue . . . |
```


7.write c program to count vowel percentage in the given string?

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

```
int main()
```

```
{
```

```
    int c = 0, count = 0;
```

```
    char s[1000];
```

```
    printf("Input a string\n");
```

```
    gets(s);
```

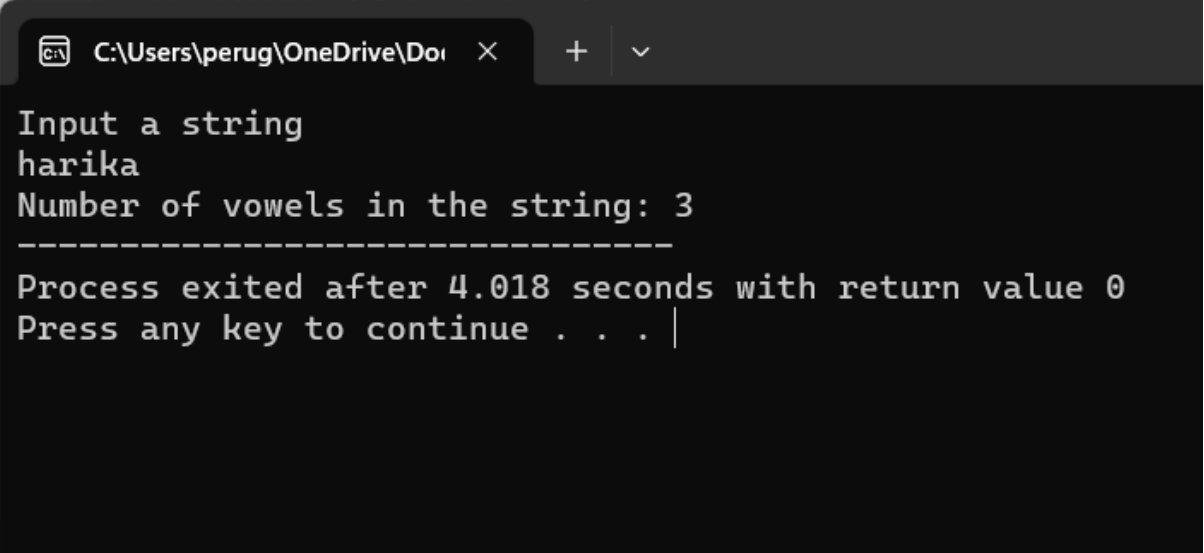
```
    while (s[c] != '\0') {
```

```
        if (s[c] == 'a' || s[c] == 'A' || s[c] == 'e' || s[c] == 'E' || s[c] == 'i' ||  
s[c] == 'I' || s[c] == 'o' || s[c] == 'O' || s[c] == 'u' || s[c] == 'U')
```

```
            count++;
```

```
            c++;
```

```
    }
```



```
C:\Users\perug\OneDrive\Doi > Input a string  
harika  
Number of vowels in the string: 3  
-----  
Process exited after 4.018 seconds with return value 0  
Press any key to continue . . . |
```

8. Write c program to find the matrix multiplication?

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

```
#include <stdlib.h>
```

```

#define R1 3
#define C1 2
#define R2 2
#define C2 3

void multiplyMatrix(int m1[][C1], int m2[][C2])
{
    int result[R1][C2];

    printf("Resultant Matrix is:\n");

    for (int i = 0; i < R1; i++) {
        for (int j = 0; j < C2; j++) {
            result[i][j] = 0;

            for (int k = 0; k < R2; k++) {
                result[i][j] += m1[i][k] * m2[k][j];
            }

            printf("%d\t", result[i][j]);
        }

        printf("\n");
    }
}

int main()
{

    int m1[R1][C1] = { { 1, 1 }, { 2, 2 } };

```

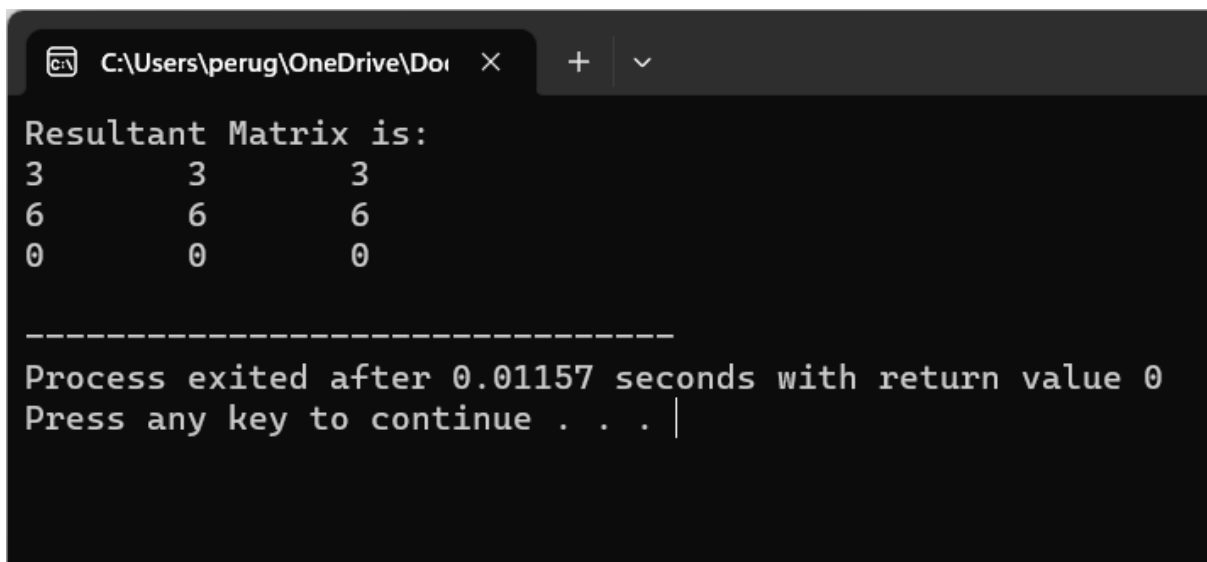
```

int m2[R2][C2] = { { 1, 1, 1 }, { 2, 2, 2 } };
if (C1 != R2) {
    printf("The number of columns in Matrix-1 must be "
           "equal to the number of rows in "
           "Matrix-2\n");
    printf("Please update MACROs value according to "
           "your array dimension in "
           "#define section\n");

    exit(EXIT_FAILURE);
}

multiplyMatrix(m1, m2);
return 0;
}

```



```

C:\Users\perug\OneDrive\Doi >
Resultant Matrix is:
3      3      3
6      6      6
0      0      0

-----
Process exited after 0.01157 seconds with return value 0
Press any key to continue . . . |

```

9.write c program tp peform all string manuplation?

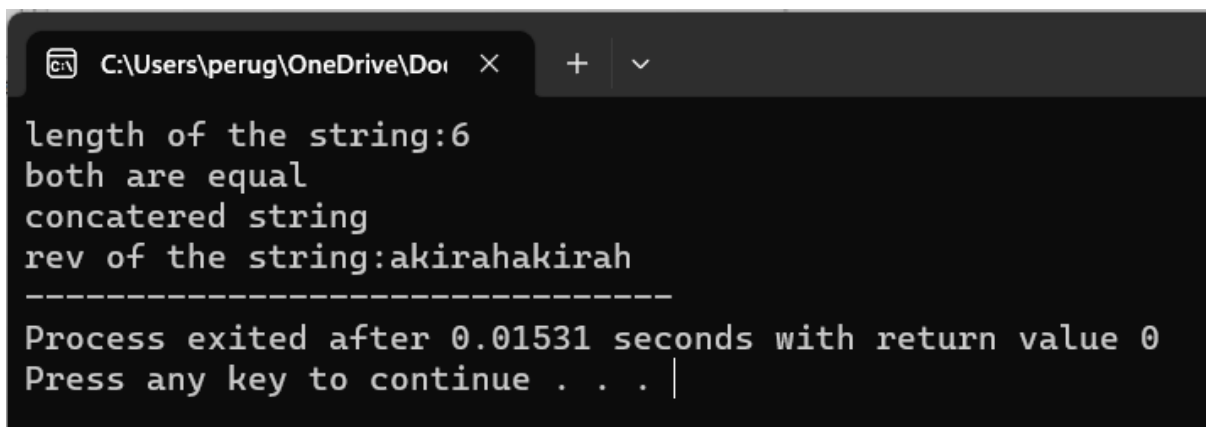
```

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

```

```
int main()
{
    char s[]="harika",s1[]="harika";
    printf("length of the string:%d\n",strlen(s));
    if(strcmp(s,s1)==0)
    {
        printf("both are equal\n");
    }
    else
    {
        printf("both are different");
    }
    printf("concatated string %s\n",strcat(s,s1));
    printf("rev of the string:%s\t",strrev(s));

    return 0;
}
```



```
C:\Users\perug\OneDrive\Doi >
length of the string:6
both are equal
concatated string
rev of the string:akirahakirah
-----
Process exited after 0.01531 seconds with return value 0
Press any key to continue . . . |
```

