

C SA0251 - C programming
Assignment - 1

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1. Program to calculate the factorial of the given no.

Ans input:-

```
#include <stdio.h>
int in main()
{
    int i, fact=1, n;
    printf ("Enter a number to find factorial: ");
    scanf ("%d", &n);
    for (i=1, i<=n; i++)
        fact = fact * i;
    printf ("factorial of %d is: %d", n, fact);
    return 0;
}
```

Output:-

Enter a number to find factorial : 6
factorial of 6 is : 720.

2. Write a C program to find length of the string and calculate the no. of vowels in it?

-Ans

Input:-

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

```
int main()
```

```
{
```

```
    char str[100];
```

```
    int i, vowels = 0;
```

```
    printf ("Enter the string");
```

```
    scanf ("%s", &str);
```

```
    for (i = 0; str[i] != '\0'; i++)
```

```
    {
```

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

```
        {
```

```
            vowels++;
```

```
        }
```

```
    }
```

```
    printf ("Total numbers of vowels: %d\n", vowels);
```

```
    return 0;
```

```
}
```


Output:-

Enter the string: I am Kaivalya

Total number of vowels = 6.

③

Write a C program for program of student Database using structure?

input:-

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

```
struct student
```

```
{
```

```
    char first name [50];
```

```
    int roll;
```

```
    float marks;
```

```
}
```

```
int main;
```

```
{
```

```
    int i;
```

```
    printf("Enter information of students:\n");
```

```
    for (i=0; i<2; i++)
```

```
    {
```

```
        S[i].roll = i+1;
```

```
        printf("\n for roll numbers %d, \n", S[i].roll;
```

```
        printf("Enter the first name: ");
```

```
        scanf("%f", &S[i].marks);
```

```

printf ("Enter marks:");
scanf ("%f", &S[i].marks);
}
printf ("Displaying information:\n\n");
for (i=0 ; i<2; i++)
{
    printf ("\n Roll number: %d\n", i+1);
    printf ("first name:");
    puts (S[i].first name);
    printf ("Marks: %.1f", S[i].marks);
    printf ("\n");
}
return 0;
}

```

Output:-

Roll number: 1

Enter first name: Anju

Enter marks 97

Roll number: 2

Enter first name: Kaifu

Enter marks 93.

Displaying information:

program to search an element in the given array using linear search?

input:-

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

```
#include <conio.h>
```

```
int main()
```

```
{
```

```
    scanf("%d", &i), i=0, ele=0, flag=1;
```

```
    printf("Enter array elements: ");
```

```
    for (i=0; i<10; i++)
```

```
    {
```

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

```
    }
```

```
    printf("Enter the element to search: ");
```

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

```
    for (i=0; i<10; i++)
```

```
    {
```

```
        if (a[i] == ele)
```

```
        {
```

```
            flag = 0;
```

```
            break;
```

```
        }
```

```
    }
```

```
if (flag == 0)
```

```
    printf ("element found");
```

```
else
```

```
    printf ("element not found");
```

```
return 0;
```

```
}
```

Output:-

Enter the element : Hydrogen
enter the element to search : element
found.

program to take input in a matrix (2D Matrix array) and print only the diagonal elements using multidimensional array.

input:-

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

```
int main ( )
```

```
{
```

```
int matrix [3][3];
```

```
int i, j, rows, cols;
```

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

```
scanf ("%d %d", &rows, &cols);
```

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

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

```
{
```

```
for (j=0; j < cols; j++)
```

```
{
```

```
if (i == j)
```

```
{
```

```
printf ("%d", matrix [i][j]);
```

```
}
```

```
}
```

```
}
```

```
return 0;
```

```
}
```


out put:-

Enter the number of rows and columns of
the matrix : 3

(0,0):1

Enter the elements of the circle of
matrix:

The diagonal elements of the matrix are: