## Lab Task – 1

1. Write a C program to find the sum of elements in an array

using pointers.

#include<stdio.h>

int main()

{

    int x[100],\*y,n,s=0;

    y=x;

    printf("size of an array:");

    scanf("%d",&n);

    printf("enter the values in an array:");

    for(int i=0;i<n;i++)

    {

        scanf("%d",&x[i]);

    }

    for(int i=0;i<n;i++)

    {

        s+=(\*y);

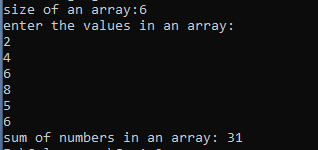
        y++;

    }

    printf("sum of numbers in an array: %d",s);

}

**Output :**

****

1. Write a C program to swap the values of two integers

using pointers

#include<stdio.h>

int main()

{

    int x,y,z,\*p,\*q;

    p=&x;

    q=&y;

    printf("enter the value of x & y\n");

    scanf("%d%d",&x,&y);

    z=\*q;

    \*q=\*p;

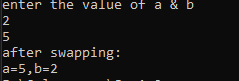
    \*p=z;

    printf("after swapping:\n");

    printf("x=%d,y=%d",\*p,\*q);

}

**Output :**

****

1. Write a C program to reverse a string using pointers

#include<stdio.h>

#include<string.h>

int main()

{

    char a[100],x,\*ptr;

    ptr=a;

    printf("Enter the string:");

    scanf("%s",&a);

    int n=strlen(a);

    for(int i=0;i<n/2;i++)

    {

        x=a[n-i-1];

        a[n-i-1]=a[i];

        a[i]=x;

    }

    printf("Reverse of the string : %s",ptr);

}

**Output :**

****

1. Write a C program to calculate the power of a number

using pointers to functions.

#include<stdio.h>

int power\_num(int,int,int\*);

int main()

{

    int p,b,res;

    printf("Enter base and power : ");

    scanf("%d%d",&b,&p);

    int (\*power)(int,int,int\*)=&power\_num;

    (\*power)(b,p,&res);

    printf("%d to the power of %d is %d",b,p,res);

}

int powerofnum(int x,int y,int\*ans)

{

    \*ans=1;

    for(int i=1;i<=y;i++)

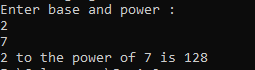
    {

        \*ans=(\*ans)\*x;

    }

}

**Output :**

****

1. Write a C program that dynamically allocates memory for

a 2D array based on user input.

#include<stdio.h>

#include<stdlib.h>

int main()

{

    int r,c,\*row,\*column,\*arr;

    row=&r;

    column=&c;

    printf("Enter number of rows and columns : \n");

    scanf("%d%d",&r,&c);

    arr=(int\*)malloc(r\*c\*sizeof(int));

    printf("Enter the values : \n");

    for(int i=0;i<(\*row);i++)

    {

        for(int j=0;j<(\*column);j++)

        {

            scanf("%d",&arr[i\*(\*column)+j]);

        }

    }

    printf("2D matrix\n");

    for(int i=0;i<(\*row);i++)

    {

        for(int j=0;j<(\*column);j++)

        {

            printf("%d ",arr[i\*(\*column)+j]);

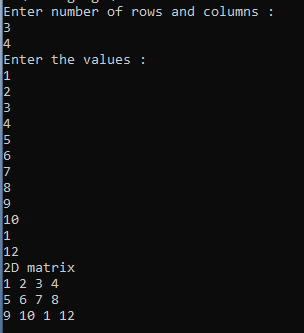
        }

        printf("\n");

    }

}

**Output :**

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