

- 1. Write program to read seven days temperatures in an array and print deviations from average temperature for each day.**

```
#include<stdio.h>
#include<conio.h>
int main(){
    int i,temp,n,original[7],sum=0;
    float avg,std;
    printf("Enter the value of n..");
    scanf("%d",&n);
    printf("Enter the value in matrix..\n");
    for(i=0;i<n;i++){
        scanf("%d",&original[i]);
    }

    for(i=0;i<n;i++){
        sum=sum +original[i];
    }

    printf("\n The sum of numbers is \t:%d",sum);
    avg=sum/n;
    printf("\n The average of numbers is :%.2f",avg);

    for(i=0;i<n;i++){
        std=original[i]-avg;
        printf("\nThe standard deviation is %.2f:",std);
    }

    getch();
    return 0;
}
```

- 2. Write a program to read N number of persons' ages in an array and print minimum, maximum and average age.**

```
#include<stdio.h>
#include<conio.h>
int main(){
    int age[10],i,max=0,min=999,sum=0,avg;
    printf("Enter age of ten persons..\n");
    for(i=0;i<10;i++){
        scanf("%d",&age[i]);
```

```
        sum=sum+age[i];
    if(max <age[i])
        max=age[i];
    if(min>age[i])
        min=age[i];
}
avg=sum/10;
printf("The Sum is %d\n",sum );
printf("The maximum value is %d\n",max );
printf("The manimum value is %d\n",min );
printf("The average value is %d",avg );

}
```

3. Declare an array of nos. (21, 3, 61, 80, 9, 73, 0, 5, 1, 2) and interchange successive elements in the array and print both the original and interchanged arrays

```
#include<stdio.h>
#include<conio.h>
int main(){
    int i,temp;
    int original[10]={21, 3, 61, 80, 9, 73, 0, 5, 1, 2};
    printf("The original array is \n");
    for(i=0;i<10;i++){
        printf("%d \t",original[i]);
    }
    for(int i=0;i<10;i+=2)
    {
        temp=original[i];
        original[i]=original[i+1];
        original[i+1]=temp;
    }
    printf("The Exchanged array is \n");
    for(i=0;i<10;i++){
        printf("%d\t",original[i]);
    }
    getch();
    return 0;
}.
```

4. Read 10 nos. in to an array & print in reverse order.

```
#include<stdio.h>
#include<conio.h>
int main(){
    int array[10],i;
    printf("Enter the digits ....\n");
    for(i=0;i<10;i++)
    {
        scanf("%d",&array[i]);
    }
    for(i=9;i>=0;--i){
        printf("%d",array[i]);
    }
    getch();
    return 0;
}
```

5. Write a program to input a phrase in small letter & print in upper case.

```
#include<stdio.h>
#include<string.h>
int main(){
    char str[20];
    int i;
    printf("Enter any string in small letter->");
    scanf("%s",str);
    printf("The string is->%s",str);
    for(i=0;i<=strlen(str);i++){
        if(str[i]>=97&&str[i]<=122){//if(str[i]>=65&&str[i]<=90)
            str[i]=str[i]-32;//+32
        }
    }
    printf("\nThe string in uppercase is->%s",str);
    return 0;
}
```

6. Write a program to input a phrase and to test whether it is a palindrome or not.

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

```
int main()
{
    char a[100], b[100];
    printf("Enter the string to check if it is a palindrome\n");
    gets(a);
    strcpy(b,a);
    strrev(b);
    if (strcmp(a,b) == 0)
        printf("Entered string is a palindrome.\n");
    else
        printf("Entered string is not a palindrome.\n");
    return 0; }
```

Or,

```
#include<stdio.h>
#include<conio.h>
int main(){
    char string[20];
    int i,j,len=0,flag=0;
    printf("\n Enter any String:");
    gets(string);
    for(i=0;string[i]!='\0';i++)
        len++;
    i=0;
    j=len-1;
    while(i<len)
    {
        if(string[i]!=string[j]){
            flag=1;
            break;
        }
        i++;
        j--;
    }
    if(flag==0)
        printf("\n String is palindrome:");
    else
        printf("\n String is not palindrome:");
    getch();
}
```

```

    return 0;
}

```

7. Write a program to input first two terms and generate N Fibonacci terms.

```

#include<stdio.h>
#include<conio.h>
int main(){
    int A[10],i;
    A[0]=0;
    A[1]=1;
    for(i=2;i<9;i++){
        A[i]=A[i-1]+A[i-2];
    }
    printf("The fibonacci series is:\n");
    for(i=2;i<9;i++){
        printf("%d\t",A[i]); }
    getch();
    return 0;
}

```

8. Declare two matrices in your program

A =	2	1	3	7	6	B =	0	1	2	3	4
	8	13	4	0	1		9	1	2	6	7
	1	2	3	4	3		4	0	3	7	1

And obtain matrix C = A + B and print

```

#include<stdio.h>
#include<conio.h>
int main(){
    int i,j;
    int first[3][5]={2,1,3,7,6,8,13,4,0,1,1,2,3,4,3};
    int second[3][5]={0,1,2,3,4,9,1,2,6,7,4,0,3,7,1};
    int sum[3][5];

    printf("Sum of array..\n");
    for(i=0;i<3;i++)
    for(j=0;j<5;j++)
    sum[i][j]=first[i][j]+second[i][j];
    for(i=0;i<3;i++){
        printf("\n");
    }
}

```

```
        for(j=0;j<5;j++){
            printf("%d\t",sum[i][j]);
        }
    }

    getch();
    return 0;
}
```

9. Read two 3 x 4 matrices in your program and print them and subtraction matrix.

```
#include<stdio.h>
#include<conio.h>
int main(){
    int i,j;
    int first[3][4];
    int second[3][4];
    int sum[3][4];
    printf("Enter the first array...\n");
    for(i=0;i<3;i++)
        for(j=0;j<4;j++)
            scanf("%d",&first[i][j]);
    printf("Enter the second array...\n");
    for(i=0;i<3;i++)
        for(j=0;j<4;j++)
            scanf("%d",&second[i][j]);
    printf("Sum of array..\n");
    for(i=0;i<3;i++)
        for(j=0;j<4;j++)
            sum[i][j]=first[i][j]-second[i][j];
    for(i=0;i<3;i++){
        printf("\n");
        for(j=0;j<4;j++){
            printf("%d\t",sum[i][j]);
        }
    }
    getch();
    return 0;
}
```

10. Read a matrix of 3 x 4 and calculate transpose of the matrix and print them.

```
#include<stdio.h>

#include<conio.h>

int main(){

    int i,j;

    int original[3][4];

    int transpose[4][3];

    int sum[3][4];

    printf("Enter the first array...\n");

    for(i=0;i<3;i++)

        for(j=0;j<4;j++)

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


    printf("The orginal array is");

    for(i=0;i<3;i++){

        printf("\n");

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

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

        }

    }


    for(i=0;i<3;i++){

        printf("\n");

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

            transpose[j][i]=original[i][j];

        }

    }

    printf("The Transpose array is\n");

    for (i = 0; i < 4; i++)
```

```
{  
    for (j= 0; j< 3; j++)  
    {  
        printf(" %d\t", transpose[i][j]);  
    }  
    printf("\n");  
}  
  
    getch();  
    return 0;  
}
```

11. Write a program to read 5 x 5 matrix & find
a) Sum of diagonal elements

```
#include<stdio.h>  
#include<conio.h>  
  
int main(){  
    int i,j,m,n;  
    int original[3][4];  
    int sum=0;  
  
    printf("Enter the value for row matrix");  
    scanf("%d",&m);  
  
    printf("Enter the value of coloum matrix");  
    scanf("%d",&n);  
  
    for(i=0;i<m;i++)  
        for(j=0;j<n;j++)  
            scanf("%d",&original[i][j]);  
  
    printf("The orginal array is");  
    for(i=0;i<m;i++){
```



```
printf("\n");
for(j=0;j<n;j++){
    printf("%d\t",original[i][j]);
}

}

for(i=0;i<m;i++){
    for(j=0;j<n;j++){
        if(i==j)
            sum=sum+original[i][j];
    }
}

printf("\n\nSum of the diagonal elements of a matrix is: %d",sum);

return 0;

}
```

b) Sum of all elements

```
#include<stdio.h>
#include<conio.h>
int main(){
    int i,j,m,n;
    int original[3][4];
    int sum=0;

    printf("Enter the value for row matrix\t");
    scanf("%d",&m);

    printf("Enter the value of coloum matrix\t");
    scanf("%d",&n);

    printf("Enter the elements in matrix to find summation");

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

```
        for(j=0;j<n;j++){
            scanf("%d",&original[i][j]);
        }
    printf("The original array is");
    for(i=0;i<m;i++){
        printf("\n");
        for(j=0;j<n;j++){
            printf("%d\t",original[i][j]);
        }
    }
    for(i=0;i<m;i++){
        for(j=0;j<n;j++){
            sum=sum+original[i][j];
        }
    }
    printf("\n\nSum of the diagonal elements of a matrix is: %d",sum);
    return 0;
}
```

12. Read 10 nos. in an array and reorder the array from smallest to greatest.

```
#include<stdio.h>

#include<conio.h>

int main()
{
    int ar[100],j,n,i,tmp;

    printf(" Enter the size of the array \t");

    scanf("%d",&n);

    printf("Now enter the elements in the array \t");

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

```
{
    scanf("%d",&ar[i]);
}

printf("\n Array is - ");

for(i=0;i<n;i++)
{
    printf("\t %d",ar[i]);
}

for(i=0;i<n;i++)
{
    for(j=0;j<n-i;j++)
    {
        if(ar[j]>ar[j+1])
        {
            tmp=ar[j];
            ar[j]=ar[j+1];
            ar[j+1]=tmp;
        }
    }
}

printf("\n\n Array in the ascending order is - \n");

for(i=0;i<n;i++)
{
    printf("\t %d",ar[i]);
}

getch();
}
```

13. Write a program to arrange characters in a word in alphabetical order.

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

```
#include <conio.h>

#include <string.h>

int main()
{
    char a[40],t;
    int i,j;

    printf("\n Enter the String :- ");

    gets(a);
    for(i=0;a[i]!='\0';i++)
    {
        for(j=i+1;a[j]!='\0';j++)
        {
            if(a[i]>a[j])
            {
                t=a[i];
                a[i]=a[j];
                a[j]=t;
            }
        }
    }

    printf("the alphabet wise is :- %s",a);

    getch();
}
```

14. Consider the table

	Course 1	Course 2	Course 3	Course 4
Student1	50	65	70	90
Student2	40	45	55	80
Student3	65	55	40	85
Student4	25	30	40	35
Student5	90	85	60	75

Write a program to read marks in an array and calculate the courses mark average as per course and students mark average as per student.

15. Write a program to declare names of 15 persons in an array in the program already and input any name from keyboard and display message

- i) "You may enter, oh honored one!" if found in name list
- ii) "Guards! Remove this person!" if not found in the list.

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
int main(){
    int i;
    char key[7];
    char names[5][7]={"Anshu","Ram","Sita","gita","mina"};

    printf("Enter the string you want to search...\n");
    gets(key);
    for(i=0;i<5;i++){

        if(strcmp(names[i],key)==0){
            printf("You may enter, oh honored one!\n");
            getch();
            return;
        }
    }
    printf("Guards! Remove this person!");
    getch();
    return 0;
}
```

16. Write a program to scan names of different persons and arrange them in alphabetic order

```
#include<stdio.h>

#include<string.h>

#include<conio.h>

int main() {
```

```
char s[5][20], t[20];

int i, j;

printf("\nEnter any five strings : ");

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

    scanf("%s", &s[i]);

for (i = 1; i < 5; i++) {

    for (j = 1; j < 5; j++) {

        if (strcmp(s[j - 1], s[j]) > 0) {

            strcpy(t, s[j - 1]);

            strcpy(s[j - 1], s[j]);

            strcpy(s[j], t);

        }

    }

}

printf("\nStrings in order are : ");

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

    printf("\n%s", s[i]);

getch();

}
```