

ASSIGNMENT-7

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1. #include<stdio.h>

int main()

{

int i,no[100],a;

printf("Enter the range ");

scanf("%d",&a);

printf("Enter the data ");

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

{

scanf("%d",&no[i]);

}

for(i=a-1;i>=0;i--)

{

printf(" %d ",no[i]);

}

return(0);

}

Output:-

Enter the range 5

Enter the data 1

2

3

4

5

5 4 3 2 1

2. #include<stdio.h>

int main()

{

int i,n,a[100],sum;

sum=0;

printf("Enter the range ");

scanf("%d",&n);

printf("Enter the data ");

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

{

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

}

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

{

sum=sum+a[i];

```
    }  
    printf("Addition is %d",sum);  
    return(0);  
}
```

Output:-

Enter the range 4

Enter the data 50

50

50

50

Addition is 200

3. #include<stdio.h>

int main()

{

int i,n,a[100],b[100];

printf("Enter the range ");

scanf("%d",&n);

printf("Enter the data ");

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

{

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

```

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

    return(0);
}

```

Output:-

Enter the range 4

Enter the data 14

25

36

74

14

25

36

74

14 25 36 74

4. #include <stdio.h>

int main()

{

int a[100],i,j,size,count=0;

printf("Enter size of the array ");

scanf("%d", &size);

printf("Enter elements in array ");

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

{

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

}

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

{

for(j=i+1;j<size;j++)

{

if(a[i]==a[j])

{

```

        count++;

        break;
    }

}

}

printf("\nTotal number of duplicate elements found in array %d",count);

return 0;

}

```

Output:-

Enter size of the array 5

Enter elements in array 10

20

30

10

30

Total number of duplicate elements found in array 2

5. #include <stdio.h>

int main()

{

int a[100],i,mx,mn,n;

printf("Enter the size of array ");

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

printf("Enter the elements in array\n",n);

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

{

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

}

mx = a[0];

mn = a[0];

for(i=1;i<n;i++)

{

    if(a[i]>mx)

    {

        mx=a[i];

    }

    if(a[i]<mn)

    {

        mn=a[i];

    }

}

printf("Maximum element is %d\n", mx);

printf("Minimum element is %d\n\n", mn);

return(0);
```

```
}
```

Output:-

Enter the size of array 5

Enter the elements in array

10

20

30

40

50

Maximum element is 50

Minimum element is 10

6. #include<stdio.h>

```
int main()
```

```
{
```

```
    int a[100],b[100],c[100],i,j=0,k=0,n;
```

```
    printf("Enter the size of array ");
```

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

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

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

```
    {
```

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



```
}  
for(i=0;i<n;i++)  
{  
    if(a[i]%2==0)  
    {  
        b[j]=a[i];  
        j++;  
    }  
    else  
    {  
        c[k]=a[i];  
        k++;  
    }  
}  
printf("The even element are");  
for(i=0;i<j;i++)  
{  
    printf("%d\n",b[i]);  
}  
printf("Odd element are");  
for(i=0;i<k;i++)  
{
```

```

        printf("%d",c[i]);
    }
    printf("\n\n");
    return(0);
}

```

Output:-

Enter the size of array 2

Enter the element 20

99

The even element are 20

Odd element are 99

7. #include <stdio.h>

int main()

{

int a[100],pos,i,n,value;

printf("Enter the size of elements in array ");

scanf("%d",&n);

printf("Enter the elements\n");

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

{

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

```

    }

    printf("Enter the location for insert an element\n");
    scanf("%d",&pos);

    printf("Enter the value to insert\n");
    scanf("%d", &value);

    for (i=n-1;i>=pos-1;i--)
    {
        a[i+1]=a[i];

        a[pos-1]=value;
    }

    printf("Resultant array is\n");
    for (i=0;i<=n;i++)
    {
        printf("%d\n",a[i]);
    }

    return 0;
}

```

Output:-

Enter the siz of elements in array 5

Enter the elements

10

20

30

40

50

Enter the location for insert an element

5

Enter the value to insert

60

Resultant array is

10

20

30

40

60

50

8. #include <stdio.h>

int main()

{

int a[100],pos,i,n;

printf("Enter the size of elements in array\n");

scanf("%d", &n);

printf("Enter the elements\n");

```
for (i=0;i<n;i++)
{
    scanf("%d",&a[i]);
}

printf("Enter the location where you wish to delete element\n");

scanf("%d", &pos);

if (pos>=n+1)
{
    printf("Deletion not possible");
}

else
{
    for (i=pos-1;i<n-1;i++)
    {
        a[i]=a[i+1];
    }

    printf("Resultant array\n");
    for (i=0;i<n-1;i++)
    {
        printf("%d\n",a[i]);
    }
}
```

```
    return 0;  
}
```

Output:-

Enter the size of elements in array

5

Enter the elements

10

20

30

40

50

Enter the location where you wish to delete element

5

Resultant array

10

20

30

40

9. #include <stdio.h>

#include <limits.h>

int main()

```
{  
    int a[100],size,i;  
    int max1,max2;  
    printf("Enter size of the array ");  
    scanf("%d", &size);  
    printf("Enter elements in the array ");  
    for(i=0;i<size;i++)  
    {  
        scanf("%d",&a[i]);  
    }  
    max1=max2=INT_MIN;  
    for(i=0;i<size;i++)  
    {  
        if(a[i]>max1)  
        {  
            max2=max1;  
            max1=a[i];  
        }  
        else if(a[i]>max2&&a[i]<max1)  
        {  
            max2=a[i];  
        }  
    }
```

```

    }

    printf("Second largest = %d", max2);

    return 0;
}

```

Output:-

Enter size of the array 5

Enter elements in the array 10

20

30

40

50

Second largest = 40

11. #include<stdio.h>

int main()

{

int a[10][10],b[10][10],d[10][10],n,n2,r,c,k;

printf("Enter the rows and colomns ");

scanf("%d %d",&n,&n2);

printf("Enter the value for first array ");

for(r=0;r<n;r++)

{


```
        for(c=0;c<n2;c++)
            scanf("%d",&a[r][c]);
    }
    printf("Enter the value for second array ");
    for(r=0;r<n;r++)
    {
        for(c=0;c<n2;c++)
            scanf("%d",&b[r][c]);
    }
    for(r=0;r<n;r++)
    {
        for(c=0;c<n2;c++)
        {
            d[r][c]=0;
            for(k=0;k<n2;k++)
            {
                d[r][c]=d[r][c]+(a[r][k]+b[k][c]);
            }
        }
    }
    printf("Multiplication array: ");
    for(r=0;r<n;r++)
```

```
    {  
        for(c=0;c<n2;c++)  
            printf("\n %d \n",d[r][c]);  
    }  
    return(0);  
}
```

Output:--

Enter the rows and colomns 2

2

Enter the value for first array 10

10

10

10

Enter the value for second array 10

10

10

10

Multiplication array:

40

40

40

40

12. #include <stdio.h>

int main()

{

int a[10][10],trans[10][10],r,c,i,j;

printf("Enter rows and columns ");

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

printf("\nEnter matrix elements\n");

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

{

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

{

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

}

}

printf("\nEnter matrix \n");

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

{

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

{

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

if (j==c-1)

```

        printf("\n");
    }
}
for (i=0;i<r;++i)
    {
        for (j=0;j<c;++j)
            {
                trans[j][i]=a[i][j];
            }
    }
printf("\nTranspose of the matrix\n");
for (i=0;i<c;++i)
    {
        for (j=0;j<r;++j)
            {
                printf("%d ",trans[i][j]);

                if (j==r-1)
                    printf("\n");
            }
    }
return 0;
}

```

Output:-

Enter rows and columns 2

3

Enter matrix elements

10

20

30

40

50

60

Entered matrix

10 20 30

40 50 60

Transpose of the matrix

10 40

20 50

30 60

13. #include<stdio.h>

int main()

{

```

int i,j,rows,col,a[10][10],sum=0;

printf("\nEnter the size of rows and columns ");

scanf("%d %d",&i,&j);

printf("\nEnter the Elements\n");

for(rows=0;rows<i;rows++)
{
    for(col=0;col<j;col++)
    {
        scanf("%d",&a[rows][col]);
    }
}

for(rows=0;rows<i;rows++)
{
    sum=sum+a[rows][rows];
}

printf("\nThe sum of diagonal elements of matrix= %d",sum);

return 0;
}

```

Output:-

Enter the size of rows and columns 2

3

Enter the Elements

10

20

30

40

50

60

70

80

90

The sum of diagonal elements of matrix= 150

14. #include <stdio.h>

int main()

{

int a[100][100],r,c,i,j,n=1;

printf("Enter the size of rows ");

scanf("%d", &r);

printf("Enter the size of Columns ");

scanf("%d",&c);

printf("Enter the elements in the matrix\n");

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

{

```

    for(j=0;j<c;j++)
    {
        scanf("%d",&a[i][j]);
    }
}

printf("The matrix is\n");
for(i=0;i<r;i++)
{
    for(j=0;j<c;j++)
        printf(" %d ",a[i][j]);
    printf("\n");
}

for(i=0;i<r;i++)
{
    for(j=0;j<c;j++)
    {
        if(a[i][j]!=1&&a[j][i]!=0)
        {
            n = 0;
            break;
        }
    }
}

```



```
}  
if(n==1)  
{  
    printf("The matrix is an identity matrix");  
}  
  
else  
{  
    printf("The matrix is not an identity matrix");  
}  
return(0);  
}
```

Output:-

Enter the size of rows 3

Enter the size of Columns 3

Enter the elements in the matrix

1

0

0

0

1

0

0

0

1

The matrix is

1 0 0

0 1 0

0 0 1

The matrix is an identity matrix