



Hijli College

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Affiliated to Vidyasagar University



Department:- Bachelor of Computer Application(BCA)

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Year:- 2020-2021

Subject:- Data Structure Laboratory

Subject Code:- 1297

Date:-15/05/2021

Assignment No: 1**Assignment Name:** Write a Program to check a Matrix is Sparse or Not.

```
#include <stdio.h>
int main()
{
    int matrix[10][10],r,c,i,j,count=0;
    printf("Enter the Row and Column of a matrix\n");
    scanf("%d%d",&r,&c);
    printf("Enter the Elements of the Matrix :\n");
    for(i=0;i<r;i++)
    {
        for(j=0;j<c;j++)
        {
            scanf("%d",&matrix[i][j]);
        }
    }
    for(i=0;i<r;i++)
    {
        for(j=0;j<c;j++)
        {
            if(matrix[i][j]==0)
            {
                count++;
            }
        }
    }
    if(count>(r*c)/2)
    {
        printf("Input Matrix is a Sparse Matrix\n");
    }
    else
    {
        printf("Input Matrix is Not a Sparse Matrix\n");
    }
    return 0;
}
```

Output:

```
Enter the Row and Column of a matrix
3 3
Enter the Elements of the Matrix :
0 5 0
3 0 0
0 0 7
Input Matrix is a Sparse Matrix
```

```
Enter the Row and Column of a matrix
3 3
Enter the Elements of the Matrix :
2 0 7
0 5 5
7 3 0
Input Matrix is Not a Sparse Matrix
```

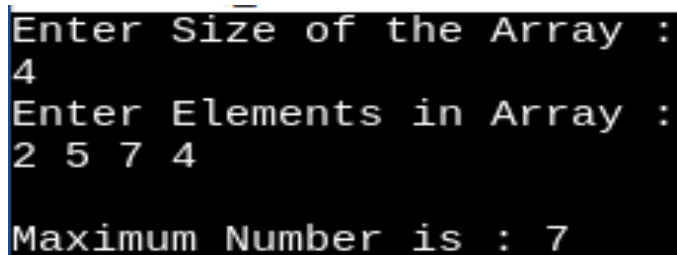
Assignment No: 2

Assignment Name: Write a Program to find the Maximum Number from a Linear Data Structure.

```
#include <stdio.h>
int main()
{
    int a[10],i,n,max;
    printf("Enter Size of the Array : \n");
    scanf("%d",&n);
    printf("Enter Elements in Array : \n");
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    max=a[0];
    for(i=1; i<n; i++)
    {
        if(max<a[i])
            max=a[i];
    }
    printf("\nMaximum Number is : %d\n",max);

    return 0;
}
```

Output:

A screenshot of a terminal window showing the output of the C program. The text is as follows:
Enter Size of the Array :
4
Enter Elements in Array :
2 5 7 4

Maximum Number is : 7