A Micro Project Report

on

Problem Solving using C Language

Submitted by

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET

(AUTONOMOUS)

Accredited by NAAC with A+ Grade and NBA under Tier-1

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2024-2025

NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET

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CERTIFICATE

This is to certify that Yeruva Bala Rajashekar Reddy , Roll No: 23471A05F7, a Second Year Student of the Department of Computer Science and Engineering, has completed the Micro Project Satisfactorily in "Problem Solving using C Language" for the Academic Year 2024-2025..

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SUM OF PRINCIPAL DIAGONAL ELEMENTS

AIM:

Write a program to find the sum of all the principal diagonal elements

```
#include<stdio.h>
void main()
{
int i,j,n,sum=0;
printf("enter the size of array:");
scanf("%d",&n);
int a[n][n];
for(i=0;i<n;i++){
for(j=0;j<n;j++){
scanf("%d",&a[i][j]);
}
}
for(i=0;i<n;i++){
sum+=a[i][i];
}
printf("sum of the elements of principal diagonal elements: %d",sum);
}
```

Input:

enter the size of array:4

4 5 6 7

2 5 4 3

3 7 6 5

9 8 7 43

Output:

sum of the elements of principal diagonal elements:58

```
enter the size of array:4
4 5 6 7
2 5 4 3
3 7 6 5
9 8 7 43
sum of the elements of principal diagonal elements: 58
```

SUM OF BOTH DIAGONAL ELEMENTS

Aim : write a program to find sum of both diagonal elements of square matrix

```
#include<stdio.h>
void main()
{
int i,j,n,sum=0;
printf("enter the size of array:");
scanf("%d",&n);
int a[n][n];
for(i=0;i<n;i++){
for(j=0;j<n;j++){
scanf("%d",&a[i][j]);
}
}
for(i=0;i<n;i++){
sum+=a[i][i];
sum+=a[i][n-1-i];
}
printf("sum of the elements of both diagonals is: %d",sum);
}
```

Input:

Enter the size of array:3

1 2 3

4 5 6

7 8 9

Output:

Sum of elements of both diagonals is:30

```
enter the size of array:3
1 2 3
4 5 6
7 8 9
sum of the elements of both diagonals is: 30
```

REPLACE PRINCIPAL DIAGONAL ELEMENTS WITH LARGEST ELEMENT IN ARRAY

Aim: write a program to replace the principal diagonal elements by largest element in the matrix

```
#include<stdio.h>
void main()
{
int i,j,n,lar;
printf("enter the size of array:");
scanf("%d",&n);
int a[n][n];
for(i=0;i<n;i++){
for(j=0;j<n;j++){
scanf("%d",&a[i][j]);
}
}
printf("\n");
lar=0;
for(i=0;i<n;i++){
for(j=0;j<n;j++){
if(a[i][j]>lar)
 lar=a[i][j];
}
}
for(i=0;i<n;i++){
a[i][i]=lar;
}
printf(“The updated array is:”);
for(i=0;i<n;i++){
for(j=0;j<n;j++){
```

```
printf("%d ",a[i][j]);
}
printf("\n");
}
}
}
```

Input:

Enter the size of array:3

12 3 4

12 2 4

54 2 8

Output:

The updated array is:

54 3 4

12 54 4

54 3 4

```
enter the size of array:3
12  3  4
12  2   4
54   2  8

The updated array is:
54 3 4
12 54 4
54 2 54
```

LIBRARY FINE FOR THE NUMBER OF DAYS THE BOOK IS LATE TO RETURN

Aim: A library charges a fine for every book returned late. For first 5 days the fine is 50 paise, for 6-10 days the fine is 1 rupee and above 10 days the fine is 5 rupees. If you return the book after 30 days your membership will be canceled. Write a program to accept the no of days the member is late to return the book and display the for the appropriate message

```
#include<stdio.h>
void main()
{
int n;
printf("enter a number of days");
scanf("%d",&n);
if(n<=5)
printf("your fine is %0.2f",n*0.5);
else if (n>5&&n<=10)
printf("your fine is %0.2f",(5*0.5)+(n-5)*1);
else if (n>10&&n<=30)
printf("your fine is %0.2f",(5*0.5)+(5)+(n-10)*5);
else
printf("your membership will be cancelled");
}
```

Input:

Enter the number of days24

Output:

Your fine is 77.50

```
enter a number of days24
your fine is 77.50
```