**A Micro Project Report**

**on**

**Problem Solving using C Language**

Submitted by

#### Gundlapalli srividya (23471A05FQ)



**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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**2024-20****25**

**NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET**

**(AUTONOMOUS)**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**



**CERTIFICATE**

**This is to certify that Gundlapalli srividya, Roll No: 23471A05FQ, 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.**.

Project Co-Ordinator HEAD OF THE DEPARTMENT

Mr.M.Venkata Rao , M.Tech. DR.S.N .Tirumala Rao,M.Tech.Ph.D.

Asst.professor proffessor

**Sum of principal diagonal elements**

**Aim:**

**1.c programme to find sum of principle diagonal diagonal elements of square matrix.**

**Source code:**

**#include<stdio.h>**

**int main()**

**{**

**int i, j, rows, columns, a[10][10], Sum = 0;**

**printf("\n Please Enter Number of rows and columns : ");**

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

**printf("\n Please Enter the Matrix Elements \n");**

**for(rows = 0; rows < i; rows++)**

**{**

**for(columns = 0;columns < j;columns++)**

**{**

**scanf("%d", &a[rows][columns]);**

**}**

**}**

**for(rows = 0; rows < i; rows++)**

**{**

**Sum = Sum + a[rows][rows];**

**}**

**printf("\n The Sum of Diagonal Elements of a Matrix = %d", Sum );**

**return 0;**

**}**

**input:**

**Please Enter Number of rows and columns : 3**

**3**

**Please Enter the Matrix Elements**

**10**

**20**

**30**

**40**

**40**

**50**

**60**

**70**

**80**

**Output:**

**sum=130**

**Sum of both diagonal of square matrix**

**Aim:**

**c programme to find sum of both diagonal elements of square matrix**

**source code:**

**#include<stdio.h>**

**int main()**

**{**

**int i,j,n, float a[10][10], sum=0.0;**

**printf("Enter order of matrix:\n");**

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

**printf("Enter matrix elements:\n");**

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

**{**

**for(j=0;j< n;j++)**

**{**

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

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

**}**

**}**

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

**{**

**for(j=0;j< n;j++)**

**{**

**if(i==j || i+j==n-1)**

**{**

**sum = sum + a[i][j];**

**}**

**}**

**}**

**printf("Sum = %f\n", sum);**

**return 0;**

**}**

**Input:**

**Enter order of matrix:**

**3**

**Enter matrix elements:**

**a[0][0]=1**

**a[0][1]=2**

**a[0][2]=3**

**a[1][0]=4**

**a[1][1]=5**

**a[1][2]=6**

**a[2][0]=7**

**a[2][1]=8**

**a[2][2]=9**

**output:**

**Sum = 25.000000**

**Replacing principal diagonal elements by largest in square matrix**

**Aim:**

**c programme to replacing principle diagonal elements by largest in square matrix.**

**Source code:**

**#include<stdio.h>**

**int main()**

**{**

**int i,j,n;**

**float a[10][10], lg;**

**printf("Enter order of matrix:\n");**

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

**printf("Enter matrix elements:\n");**

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

**{**

**for(j=0;j< n;j++)**

**{**

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

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

**}**

**}**

**lg = a[0][0];**

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

**{**

**for(j=0;j< n;j++)**

**{**

**if(a[i][j]>lg)**

**{**

**lg = a[i][j];**

**}**

**}**

**}**

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

**{**

**for(j=0;j< n;j++)**

**{**

**if(i==j)**

**{**

**a[i][j] = lg;**

**}**

**}**

**}**

**printf("Resultant matrix is:\n");**

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

**{**

**for(j=0;j< n;j++)**

**{**

**printf("%0.2f\t", a[i][j]);**

**}**

**printf("\n");**

**}**

**return 0;**

**}**

**input:**

**Enter order of matrix:**

**3**

**Enter matrix elements:**

**a[0][0]=1**

**a[0][1]=2**

**a[0][2]=3**

**a[1][0]=4**

**a[1][1]=5**

**a[1][2]=6**

**a[2][0]=7**

**a[2][1]=8**

**a[2][2]=9**

**output:**

**Resultant matrix is:**

**9.00 2.00 3.00**

**4.00 9.00 6.00**

**7.00 8.00 9.00**

**To calculate library charges**

**Aim:**

.A library charges a fine for every book returned late .for first 5 days the fine is 50 paise ,6-10 days fine is one rupee and above

10days the fine is 5 rupees.if you return the bbok after 30 days your membership will be cancelled.write a programme to accept the number

of days the member is late to return the the book and display or the appropriate message.

Source code:

#include <stdio.h>

int main()

{

int n;

printf("Enter the number of days late: ");

scanf("%d", &n);

if (n > 0 && n <= 5)

{

printf("The fine is 50 paise\n");

}

else if (n > 5 && n <= 10)

{

printf("The fine is one rupee\n");

}

else if (n > 10 && n <= 30)

{

printf("The fine is five rupees\n");

}

else if (n > 30)

{

printf("Your membership will be cancelled\n");

}

else

{

printf("Invalid input\n");

}

    return 0;

}

Input:

Enter the number of days late: 15

Output:

The fine is five rupees

Input:

Enter the number of days late:25

Output:

The fine is five rupees

Input:

Enter the number of days late:3

Output:

The fine is fifty paise.