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

**NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET**

**(AUTONOMOUS)**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**



**CERTIFICATE**

**This is to certify that BARATAM SRIMANTH, Roll No: 23471A05BC, 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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**Asst. Professor Professor**

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| SUM OF THE DIAGONAL MATRIX |

AIM**:**

**C PROGRAM TO FIND SUM OF PRINCIPLE DIAGONAL ELEMENTS OF SQUARE MATRIX**

**#include<stdio.h>**

**void main()**

**{**

**int i,j,sum=0,A[3][3];**

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

**{**

**for(j=0;j<3;j++)**

**{**

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

**}**

**}**

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

**{**

**for(j=0;j<3;j++)**

**{**

**if(i==j)**

**{**

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

**}**

**}**

**printf("sum of diagonal elements is %d",sum);**

**}**

**}**

**Output:**

**1 2 3**

**4 5 6**

**7 8 9**

**sum of diagonal elements is 1sum of diagonal elements is**

**6sum of diagonal elements is 15**

|  |
| --- |
| **SUM OF THE BOTH DIAGONAL ELEMENTS OF THE SQUARE MATRIX** |

AIM**:**

**c program to find Sum of both diagonal elements of square matrix**

**#include <stdio.h>**

**void main ()**

**{**

**static int array[10][10];**

**int i, j, m, n, a = 0, sum = 0;**

**printf("Enetr the order of the matix \n");**

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

**if (m == n )**

**{**

**printf("Enter the co-efficients of the matrix\n");**

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

**{**

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

**{**

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

**}**

**}**

**printf("The given matrix is \n");**

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

**{**

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

**{**

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

**}**

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

**}**

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

**{**

**sum = sum + array[i][i];**

**a = a + array[i][m - i - 1];**

**}**

**printf("\nThe sum of the main diagonal elements is = %d\n", sum);**

**printf("The sum of the off diagonal elements is = %d\n", a);**

**}**

**else**

**printf("The given order is not square matrix\n");**

**}**

**Output:**

**Enetr the order of the matix**

**3 3**

**Enter the co-efficients of the matrix**

**1 2 3**

**4 5 6**

**7 8 9**

**The given matrix is**

**1 2 3**

**4 5 6**

**7 8 9**

**The sum of the main diagonal elements is = 15**

**The sum of the off diagonal elements is = 15**

|  |
| --- |
| **SUM OF THE REPLACING DIAGONAL ELEMENTS BY LARGEST SQUARE MATRIX** |

**AIM:**

**C program to replacing principal diagonal elements by**

**largest in square matrix**

**#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;**

**}**

**Output:**

**Enter order of matrix:**

**3 3**

**Enter matrix elements:**

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

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

**a[1][0]=3**

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

**a[1][2]=5**

**a[2][0]=6**

**a[2][1]=7**

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

**Resultant matrix is:**

**8.001.002.00**

**3.008.005.00**

**6.007.008.00**

|  |
| --- |
| A LIBRARY CHARGES A FINE FOR EVERYBOOK RETURNS |

AIM:  
A LIBRARY CHARGES A FINE FOR EVERY BOOKRETURNED LATE.FOR FIRST 5 days the fine is 50 paise, for 6-10 days fine is one rupee and above 10 days fine is 5 rupees. if you return the book after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine or the appropriate message.

**#include<stdio.h>**

**int main ()**

**{**

**int days;**

**float fine;**

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

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

**if (days > 0 && days <= 5)**

**fine = 0.50 \* days;**

**if (days >= 6 && days <= 10)**

**fine = 1 \* days;**

**if (days > 10)**

**fine = 5 \* days;**

**if (days > 30)**

**{**

**printf("Your membership would be canceled.\n");**

**}**

**printf("You have to pay Rs. %.2f fine.", fine);**

**}**

**Output:**

**Enter the number of days: 5**

**You have to pay Rs. 2.50 fine.**

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