**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 DESABOINA VENKATAVINOD, Roll No: 23471A05BR, 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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**Numbers to Roman Numerals**

**AIM**: **C Program to convert Numbers to Roman Numerals**

#include <stdio.h>

void intToRoman(int num)

{

char \*roman[] = {"I", "IV", "V", "IX", "X", "XL", "L", "XC", "C", "CD", "D", "CM"};

int values[] = {1, 4, 5, 9, 10, 40, 50, 90, 100, 400, 500, 900};

for (int i = 11; i >= 0; i--)

{

while (num >= values[i])

{

printf("%s", roman[i]);

num -= values[i];

}

}

}

int main()

{

int number;

printf("Enter an integer: ");

scanf("%d", &number);

if (number < 1 || number > 3999)

{

printf("Please enter a number between 1 and 3999.\n");

}

Else

{

printf("Roman numeral: ");

intToRoman(number);

printf("\n");}

return 0;

}

**Out Put:**

Enter an integer: 17

Roman numeral: XVII

**Roman Numerals to Decimals DdDDdddddrgagdDecimals**

**AIM: C Program to convert Roman Numerals to Decimals**

#include <stdio.h>

int romanToDecimal(char roman)

{

if (roman == 'I') return 1;

if (roman == 'V') return 5;

if (roman == 'X') return 10;

if (roman == 'L') return 50;

if (roman == 'C') return 100;

if (roman == 'D') return 500;

if (roman == 'M') return 1000;

return 0;

}

int main()

{

char roman[100];

printf("Enter a Roman numeral: ");

scanf("%s", roman);

int decimalValue = 0;

int i = 0;

while (roman[i] != '\0')

{

int current = romanToDecimal(roman[i]);

int next = romanToDecimal(roman[i + 1]);

if (current < next)

{

decimalValue -= current;

}

else

{

decimalValue += current;

}

i++;

}

printf("The decimal value is: %d\n", decimalValue);

return 0;

}

**Out Put:**

Enter a Roman numeral: XVI

The decimal value is: 16

**Amount of values to Words**

**AIM: C Program to convert Amount of values to Words**

#include <stdio.h>

#include <string.h>

const char\* ones[] = {" ", "One", "Two", "Three", "Four", "Five", "Six", “seven", "Eight", "Nine"};

const char\*ones with ten[]={ "Ten", "Eleven", "Twelve", "Thirteen", "Fourteen", "Fifteen", "Sixteen", "Seventeen", "Eighteen", "Nineteen"};

const char\* tens[] = { " ", " ", "Twenty", "Thirty", "Forty", "Fifty",

"Sixty", "Seventy", "Eighty", "Ninety"};

void numberToWords(int n, char\* result)

{

if (n == 0)

{

strcpy(result, "Zero");

return;

}

else if (n >= 100)

{

int hundreds = n / 100;

strcat(result, ones[hundreds]);

strcat(result, " Hundred ");

n %= 100;

}

else if (n >= 20)

{

int tenPlace = n / 10;

strcat(result, tens[tenPlace]);

strcat(result, " ");

n %= 10;

}

Else if (n > 0)

{

strcat(result, ones[n]);

}

}

int main()

{

int amount;

char result[100] = "";

printf("Enter an amount (0 to 9999): ");

scanf("%d", &amount);

if (amount < 0 || amount > 9999)

{

printf("Please enter a valid amount between 0 and 9999.\n");

return 1;

}

numberToWords(amount, result);

printf("Amount in words: %s\n", result);

return 0;

}

**Out Put**:

Enter an amount (0 to 9999): 999

Amount in words: Nine Hundred Ninety Nine