

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)**

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NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET
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CERTIFICATE

This is to certify that **Shiak.Gousia parveen**, Roll No: **23471A05EY**, 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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To convert decimal to octal and hexadecimal.

Aim:

C program to convert decimal to octal and hexadecimal number.

Source code:

```
#include<stdio.h>
#include<conio.h>
int end,j,x,a[20];
void octal(int x)
{
    int i=0;
    while(x>0)
    {
        a[i]=x%8;
        i++;
        x=x/8;
    }
    end=i;
    printf("the octal number is:");
    for(j=end;j>=0;j--)
    {
        printf("%d ",a[j]);
    }
}
void hecxa(int y)
{
    printf("hexadecimal number is:%X",y);
}
void main()
{
    octal(4324);
    hecxa(500);
}
```

output:

```
the octal number is:10344
hexadecimal number is:1F4
```

c program to delete number in given position in Array

Aim:

c program to delete number in given position in Array

source code:

```
#include<stdio.h>
#include<conio.h>
int main()
{
    int a[10],i,p,j=0,n;
    clrscr();
    printf("enter no of elements in array:");
    scanf("%d",&n);
    printf("enter the elements:");
    for(i=0;i<n;i++)
    {
        scanf("%d",&a[i]);
    }
    printf("Enter a position where do you want to delete a number in array\n");
    scanf("%d",&p);
    while(j<p-1)
    {
        j++;
    }
    a[j]=a[j+1];
    printf("after deleting the element:");
    for(j=0;j<n-1;j++)
    {
        printf("%d ",a[j]);
    }
    return 0;
}
```

output:

enter no of elements in array:6

enter the elements:

1

2

3

4

10

18

enter a position where do you want to delete a number in array

5

after deleting the element:

1 2 3 4 18

To convert the decimal number to roman numerals

Aim:

Write a c program to convert the decimal number to roman numerals

Source code:

```
#include<stdio.h>
int main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    printf("Roman numerals: ");
    while(num != 0)
    {
        if (num >= 1000)
        {
            printf("M");
            num = num-1000;
        }
        else if (num >= 900)
        {
            printf("CM");
            num = num-900;
        }
        else if (num >= 500)
        {
            printf("D");
            num = num- 500;
        }
        else if (num >= 400)
        {
            printf("CD");
            num = num-400;
        }
        else if (num >= 100)
        {
            printf("C");
            num = num-100;
        }
        else if (num >= 90)
        {
            printf("XC");
            num = num- 90;
        }
        else if (num >= 50)
        {
            printf("L");
            num = num-50;
        }
        else if (num >= 40)
        {
            printf("XL");
            num = num-40;
        }
    }
}
```

```
        printf("XL");
        num =num- 40;
    }
    else if (num >= 10)
    {
        printf("X");
        num =num- 10;
    }
    else if (num >= 9)
    {
        printf("IX");
        num =num- 9;
    }
    else if (num >= 5)
    {
        printf("V");
        num =num- 5;
    }
    else if (num >= 4)
    {
        printf("IV");
        num =num- 4;
    }
    else if (num >= 1)
    {
        printf("I");
        num = num-1;
    }
}
return 0;
}
```

Output:

Enter a number: 55
Roman numerals:LV

C program to convert Roman numbers to decimal number

Aim:

C program to convert Roman numbers to decimal number

Source code:

```
#include<stdio.h>
#include<string.h>
#include<conio.h>
int digit(char);
int main()
{
    char roman_number[1000];
    int i=0;
    long int number=0;
    clrscr();
    printf("enter any roman number valid digits are I,V,X,L,C,D,M\n");
    scanf("%s",&roman_number);
    while(roman_number[i])
    {
        if(digit(roman_number[i])>=digit(roman_number[i+1]))
        {
            number=number+digit(roman_number[i]);
        }
        else
        {
            number=number+digit(roman_number[i+1])-digit(roman_number[i]);
        }
        i++;
    }
    printf("its decimal value is :%ld",number);
    return 0;
}
int digit(char c)
{
    int value;
    switch(c)
    {
        case 'I':value=1;break;
```

```
        case 'V':value=5;break;
        case 'X':value=10;break;
        case 'L':value=50;break;
        case 'C':value=100;break;
        case 'D':value=500;break;
        case 'M':value=1000;break;
        case '0':value=0;break;
        default:value=-1;
    }
    return value;
}
```

output:

enter any roman number valid digits are I,V,X,L,C,D,M

XXX

its decimal value is:30

enter any roman number valid digits are I,V,X,L,C,D,M

IC

its decimal value is:99

Match sticks game

Aim:

write a program for a match stick game being played between the computer and user.

Your program should ensure that the computer always wins. Rules for the game are as follows:

- there are 21 match sticks.
- the computer asks the player to pick 1,2,3,4 matchsticks.
- after the person picks, the computer does its picking.
- whoever is forced to pickup the last matchstick loses the game.

Source code:

```
#include<stdio.h>
int main()
{
    int m=21,c,human;
    while(m>1)
    {
        printf("number of match sticks are:%d\n",m);
        printf(" enter the human choice in the range of 1 to 4:\n");
        scanf("%d",&human);
        if(human==0 && human>4)
        {
            printf("please enter a valid choice");
        }
        c=5-human;
        printf("the computer choice is %d\n",c);
        m=m-human-c;
        if(m==1)
        {
            printf("THE NUMBER OF MATCH STICKS ARE %d\n",m);
            printf("you lost the game");
        }
    }

    return 0;
}
```

Output:

```
number of match sticks are:21
 enter the human choice in the range of 1 to 4:
2
the computer choice is 3
number of match sticks are:16
 enter the human choice in the range of 1 to 4:
3
```

the computer choice is 2
number of match sticks are:11
enter the human choice in the range of 1 to 4:
4
the computer choice is 1
number of match sticks are:6
enter the human choice in the range of 1 to 4:
2
the computer choice is 3
THE NUMBER OF MATCH STICKS ARE 1
you lost the game