**Problem Statement 1:** WAP in C to check whether an input character is alphabet, digit or special symbol?

**Code:**

#include<stdio.h>

#include<conio.h>

int main() {

char ch;

int asciiCode;

printf("Enter any character: ");

scanf("%c", &ch);

asciiCode = ch;

// Check character is number.

If (asciiCode >= 48 && asciiCode <= 57) {

printf("Character '%c' is an number.", ch);

}

// Check character is alphabet.

else if ((asciiCode >= 65 && asciiCode <= 90) || (asciiCode >= 97 && asciiCode <= 122)) {

printf("Character '%c' is an Alphabet.", ch);

}

// Check character is special symbol.

else {

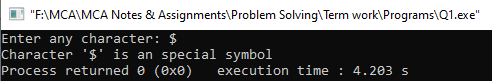
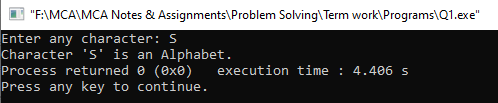
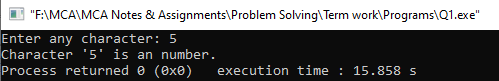
printf("Character '%c' is an special symbol", ch);

}

return 0;

}

**Output:**



**Problem Statement 2:** WAP in C to check whether a triangle is valid or not by providing all the sides. If valid then check whether the triangle is equilateral, isosceles, or scalene?

**Code:**

#include<stdio.h>

#include<conio.h>

int main(){

int side1, side2, side3;

printf("Enter three sides of the triangle:");

scanf("%d%d%d", &side1, &side2, &side3);

// Triangle is valid.

if(side1 + side2 > side3 && side1 + side3 > side2 && side2 + side3 > side1)

{

// Check Equilateral Triangle.

if(side1 == side2 && side1 == side3 && side2 == side3){

printf("The triangle you entered is a Equilateral Triangle.");

}

// Check Isosceles Triangle.

else if(side1 == side2 || side1 == side3 || side2 == side3){

printf("The triangle you entered is a Isosceles Triangle.");

}

// Check Scalene Triangle.

else{

printf("The triangle you entered is a Scalene Triangle.");

}

}

// Triangle is Invalid.

else

{

printf("The triangle is invalid!");

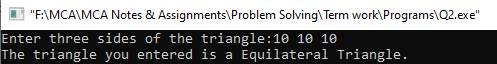
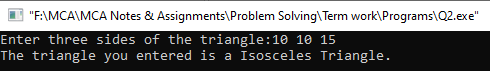
}

getch();

return 0;

}

**Output:**



**Problem Statement 3:** WAP in C to enter the marks in three subjects for a student and find percentage and Scholarship. Rules for the semester scholarship are as follows:

Below 50 = 0

51 to 60 = 5%

61 to 74 = 20%

75 to 84 = 30%

85 & above = 50%

Semester fee is Rs. 125000/- print the net amount payable.

Ask the user to enter marks in 5 subjects and display the corresponding grade.

**Problem Statement 4:** WAP in C to check whether an input year is leap-year or not?

**Code:**

#include<stdio.h>

#include<conio.h>

int main() {

int year;

printf("Enter any year to check whether it is a leap year or not: ");

scanf("%d", &year);

if(year%4 == 0 || (year%100 == 0 && year%400 == 0 )) {

printf("The year %d is a leap year", year);

}

else {

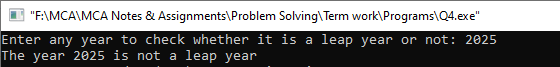
printf("The year %d is not a leap year", year);

}

return 0;

}

Output:



**5.** Write a program in C to print first n palindrome number.

**Code:**

#include<stdio.h>

#include<conio.h>

int checkNumberIsPalindrome(int n){

int num = n, reversed = 0, remainder;

while(num != 0){

remainder = num%10;

reversed = reversed \* 10 + remainder;

num = num/10;

}

if(reversed == n){ return 1; }

else{ return 0; }

}

int main(){

int size, count = 0, num = 0, result;

printf("Enter how much first palindrome numbers you want: ");

scanf("%d", &size);

while(count <= size){

result = checkNumberIsPalindrome(num);

if(result != 0){

printf("\n%d", num);

count++;

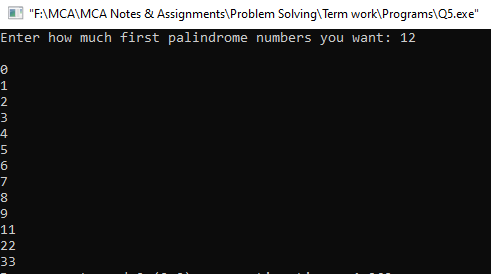
}

num++;

}

return 0;

}

**Output:**

**6.** Write a program in C to convert a Decimal number into Binary, Octal and Hexadecimal number.

**Code:**

#include<stdio.h>

#include<conio.h>

#include<stdlib.h>

int main(){

int number, rem, base, choice, index = -1;

char result[100], ch;

printf("Enter any decimal number: ");

scanf("%d", &number);

printf("1. Convert into Binary \n");

printf("2. Convert into Octal \n");

printf("3. Convert into HexaDecimal \n");

printf("Please enter your choice: ");

scanf("%d", &choice);

switch(choice){

case 1:

base = 2; break;

case 2:

base = 8; break;

case 3:

base = 16; break;

default:

printf("Invalid choice!!"); exit(0);

}

while(number != 0){

rem = number%base;

switch(rem){

case 10:

ch = 'A'; break;

case 11:

ch = 'B'; break;

case 12:

ch = 'C'; break;

case 13:

ch = 'D'; break;

case 14:

ch = 'E'; break;

case 15:

ch = 'F'; break;

default:

ch = rem+48; break;

}

index++;

result[index] = ch;

number = number/base;

}

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

{

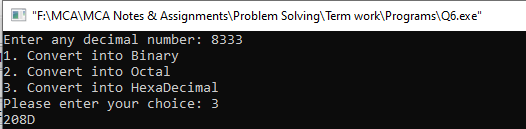
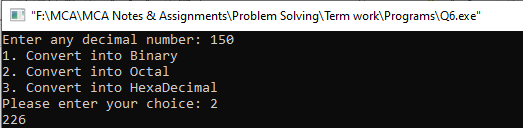
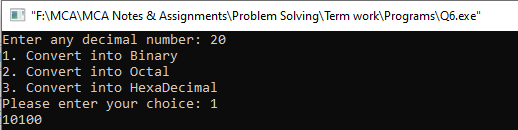
printf("%c", result[i]);

}

return 0;

}

**Output:**



**Problem Statement 7:** Write a C program to print the digits of a number in words.

Sample example of Output will be:

Enter any number: 2481

Two Four Eight One

**Problem Statement 8:** Write a C program to compute the sum of first N terms for the following series.

1. S=1 + 22/2! + 33/3! + 44/4! + …
2. S=1 + 2/2! + 32/3! + 43/4! + …
3. S=1 -2! + 3! - 4! + 5! -6! + …

**Problem Statement 9:** Write a program in C to find out the highest common factor (HCF) and lowest common multiple (LCM) of two number.

**Problem Statement 10:** Write C code to print the following patterns:

(i) (ii)

1 E

1 2 1 E D E

1 2 3 2 1 E D C D E

1 2 3 4 3 2 1 E D C B C D E

1 2 3 4 5 4 3 2 1 E D C B A B C D E

1 2 3 4 3 2 1 E D C B C D E

1 2 3 2 1 E D C D E

1 2 1 E D E

1 E

**Problem Statement 11:** WAP in C to input time in hour, minutes, and seconds. Display it in proper format. Then input two time-instance and add them and display the added time again in proper format.

First time is 10:12:34

Second time 21:21:59

Added time 31:34:33