Write a C program to find maximum between two numbers.

Write a C program to find maximum between three numbers.

Write a C program to check whether a number is negative, positive or zero.

Write a C program to check whether a year is leap year or not.

Write a C program to check whether a character is alphabet or not.

Write a C program to input any alphabet and check whether it is vowel or consonant.

Write a C program to input any character and check whether it is alphabet, digit or special character.

.Write a C program to find maximum between two numbers.

```
/**
 * C program to find maximum between two numbers
 */

#include <stdio.h>

int main()
{
    int num1, num2;

    /* Input two numbers from user */
    printf("Enter two numbers: ");
    scanf("%d%d", &num1, &num2);

    /* Compare num1 with num2 */
    if(num1 > num2)
    {
/* True part means num1 > num2 */
        printf("%d is maximum", num1);
    }
    else
    {
        /* False part means num1 < num2 */
        printf("%d is maximum", num2);
    }

    return 0;
        }

/**
 * C program to find maximum between two numbers using conditional operator
 */

#include <stdio.h>

int main()
{
    int num1, num2, max;

    /*
     * Input two number from user
     */
    printf("Enter two numbers: ");
    scanf("%d%d", &num1, &num2);

    /*
     * If num1 > num2 then
     *     assign num1 to max
     * else
     *     assign num2 to max
     */
    max = (num1 > num2) ? num1 : num2;

    printf("Maximum between %d and %d is %d", num1, num2, max);

    return 0;
}
```

## Write a C program to find maximum between three numbers.

```
/**
 * C program to find maximum between three numbers using ladder if else
 */

#include <stdio.h>

int main()
{
    int num1, num2, num3, max;

    /* Input three numbers from user */
    printf("Enter three numbers: ");
    scanf("%d%d%d", &num1, &num2, &num3);


    if((num1 > num2) && (num1 > num3))
    {
        /* If num1 is greater than both */
        max = num1;
    }
    else if((num2 > num1) && (num2 > num3))
    {
        /* If num2 is greater than both */
        max = num2;
    }
    else if((num3 > num1) && (num3 > num2))
    {
        /* If num3 is greater than both */
        max = num3;
    }
```

```
/**
 * C program to find maximum between three numbers using ladder if else if
 */

#include <stdio.h>

int main()
{
    int num1, num2, num3, max;

    /* Input three numbers from user */
    printf("Enter three numbers: ");
    scanf("%d%d%d", &num1, &num2, &num3);


    if((num1 > num2) && (num1 > num3))
    {
        /* If num1 > num2 and num1 > num3 */
        max = num1;
    }
    else if(num2 > num3)
    {
        /* If num1 is not > num2 and num2 > num3 */
        max = num2;
    }
    else
    {
        /* If num1 is not > num2 and num2 is also not > num3 */
        max = num3;
    }
```

```
    /* Print maximum number */
    printf("Maximum among all three numbers = %d", max);

    return 0;}
```

Write a C program to check whether a number is negative, positive or zero.

```
/**
 * C program to check positive negative or zero using simple if statement
 */

#include <stdio.h>

int main()
{
    int num;

    /* Input number from user */
    printf("Enter any number: ");
    scanf("%d", &num);


    if(num > 0)
    {
        printf("Number is POSITIVE");
    }
    if(num < 0)
    {
        printf("Number is NEGATIVE");
    }
    if(num == 0)
    {
        printf("Number is ZERO");
    }

    return 0;
}
```

Write a C program to check whether a year is leap year or not.

# Logic to check leap year

**Leap year** as a special year containing one extra day i.e. total 366 days in a year. A year is said to be leap year, if the year is exactly divisible by 4 but and not divisible by 100. Year is also a leap year if it is exactly divisible by 400.

```
/**
 * C program to check Leap Year
 */

#include <stdio.h>

int main()
{
    int year;

    /* Input year from user */
    printf("Enter year : ");
    scanf("%d", &year);
```

```
    /*
     * If year is exactly divisible by 4  and year is not divisible by 100
     * or year is exactly divisible by 400 then
     * the year is leap year.
     * Else year is normal year
     */
    if(((year % 4 == 0) && (year % 100 !=0)) || (year % 400==0))
    {
        printf("LEAP YEAR");
    }
    else
    {
        printf("COMMON YEAR");
    }

    return 0;
}
```

Write a C program to check whether a character is alphabet or not.

# Logic to check alphabets

In C every printable and non-printable symbol is treated as a character and has an ASCII value. ASCII value is unique integer value for every character. It is used to represent a character in memory. In memory every character is stored as an integer.

An input character is alphabet if it is in between a-z or A-Z.
**Note:** a and A both are different and have different ASCII values.

Step by step descriptive logic to check alphabets.

1. Input a character from user. Store it in some variable say ch.
2. Check if((ch >= 'a') && (ch <= 'z')) or if((ch >= 'A') && (ch <= 'Z')). Then it is alphabet otherwise not.

```
/**
 * C program to check whether a character is alphabet or not
 */

#include <stdio.h>

int main()
{
    char ch;

    /* Input a character from user */
    printf("Enter any character: ");
    scanf("%c", &ch);


    if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
    {
        printf("Character is an ALPHABET.");
    }
    else
    {
        printf("Character is NOT ALPHABET.");
    }
```

```
    return 0;
}
```

/**
Write a C program to input any alphabet and check whether it is vowel or consonant.

# Logic to check vowels or consonants

English alphabets a, e, i, o and u both lowercase and uppercase are known as vowels. Alphabets other than vowels are known as consonants.

Step by step descriptive logic to check vowels or consonant.

1. Input a character from user. Store it in some variable say ch.
2. Check conditions for vowel i.e. if(ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u'), then it is vowel.
3. If character is alphabet but not vowel then it is consonant. Means check ch >= 'a' && ch <= 'z' then, it is consonant.
4. If it is neither vowel nor consonant, then it is not alphabet.

Character in C is represented inside single quote. Do not forget to add single quote whenever checking for character constant.

```
 * C program to check whether a character is vowel or consonant
 */

#include <stdio.h>

int main()
{
    char ch;

    /* Input character from user */
    printf("Enter any character: ");
    scanf("%c", &ch);


    /* Condition for vowel */
    if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' ||
       ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')
    {
        printf("'%c' is Vowel.", ch);
    }
    else if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
    {
        /* Condition for consonant */
        printf("'%c' is Consonant.", ch);
    }
    else
    {
        /*
         * If it is neither vowel nor consonant
         * then it is not an alphabet.
         */
        printf("'%c' is not an alphabet.", ch);
    }

    return 0;
```

```
}
```

Write a C program to input any character and check whether it is alphabet, digit or special character.

# Logic to check alphabet, digit or special character

- A character is alphabet if it in between a-z or A-Z.
- A character is digit if it is in between 0-9.
- A character is special symbol character if it neither alphabet nor digit.

Step by step descriptive logic to check alphabet, digit or special character.

1. Input a character from user. Store it in some variable say ch.
2. First check if character is alphabet or not. A character is alphabet if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')).
3. Next, check condition for digits. A character is digit if(ch >= '0' && ch <= '9').
4. Finally, if a character is neither alphabet nor digit, then character is a special character.

```
/**
 * C program to check alphabet, digit or special character
 */

#include <stdio.h>

int main()
{
    char ch;

    /* Input character from user */
    printf("Enter any character: ");
    scanf("%c", &ch);


    /* Alphabet check */
    if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
    {
        printf("'%c' is alphabet.", ch);
    }
    else if(ch >= '0' && ch <= '9')
    {
        printf("'%c' is digit.", ch);
    }
    else
    {
        printf("'%c' is special character.", ch);
    }

    return 0;
}
```