# Lesson 48 CPP Negative in Binary

Negative numbers can be distinguishable with the help of an extra bit or flag called sign bit or sign flag in the Binary number representation system for signed numbers. It is not possible to add minus or plus symbols in front of a binary number because a binary number can have only two symbols either 0 or 1 for each position or bit. That's why we use this extra bit called sign bit or sign flag. The value of the sign bit is 1 for negative binary numbers and 0 for positive numbers.

When an integer binary number is positive, the sign is represented by 0 and the magnitude by a positive binary number. When the number is negative, the sign is represented by 1 but the rest of the number may be represented in the Sign-Magnitude **method.**

## Signed Magnitude Method:

In this method, the number is divided into two parts: Sign bit and Magnitude. If the number is positive then sign bit will be 0 and if the number is negative then sign bit will be 1. Magnitude is represented with the binary form of the number to be represented.

Example: Let we are using a 5 bit register. The representation of **-5** to **+5** will be as follows: