**Introduction**

**How signed number are presented in computers?**

In Mathematics, negative numbers in any base are represented by prefixing them with a minus sign. However in computer system numbers are represented only as sequence of bits without extra symbols.

So to represent signed number in Binary number system four best methods are there:-

1. Signed and magnitude
2. One’s Complement
3. Two’s Complement
4. Excess-K

**What is Signed Magnitude Number?**

One method of representing signed number in a binary number system. The Most significant bit or the left most bit is used to determined the sign of a number, where 0 means positive, and the remaining bits to represent the magnitude (absolute value).

A 8-bit sign-magnitude number would appear as follows:

**Table 4.3. 8-bit sign-magnitude format**

| **Sign** | **Magnitude** |
| --- | --- |
| 7 | 6-0 |

**Range:-**

Since the magnitude is an unsigned binary number, range is computed as it is for unsigned binary, but with one less bit. Hence, for 8-bit sign-magnitude, the range is +/- 27-1.