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Lesson 18 Octal

As we learned, the **decimal system** is **base 10** and all the decimal numbers are made by combining digits ranging from **0** to **9**.

For example:

- 1,000,000: only two digits (0 and 1) are used.
- 123: only three digits (1, 2 and 3) are used.

A computer uses only two states (on and off states) represented as **0's** and **1's**. So, the **binary system** is **base 2**.

Is there a base-30 system?

- yes, but we'll need 30 symbols to represent the digits.

In this lesson, we'll discuss the base-8 system:

The **octal system** uses **8** as a base and the numbers range from **0** to **7**.

Base-eight numerals: 0,1,2,3,4,5,6,7

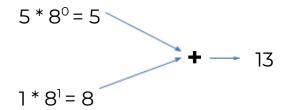
System:	Base:	Digits:
Binary	2	1,2
Octal	8	0,1,2,3,4,5,6,7
Decimal	10	0,1,2,3,4,5,6,7,8,9

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Converting octal into decimal:

Example: 15



- 15 is the octal equivalent of the decimal number 13.

How to print an octal number:

```
int x = 13;
printf("%o", x);
```