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Comp 71 Technology

Binary

The binary system is what every computing devices use at the most simple and basic levels to represent and save data more easily and faster. We people usually use base 10 symbols/numerical numbers (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) but the binary system has only base 2 symbols. These two symbols are 0 and 1. Computers use binary because it is more easier for the computers to remember data and with just two switches like representing on and off. We can use numbers in electrical writings. 1 represents on and 0 represents off.

Here’s a table comparing Base-10 numbers to Binary:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Binary | 1000000 | 1000000 | 100000 | 10000 | 1000 | 100 | 10 | 1 |
| Base-10 | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |

Let’s try an example. How about we use the number 87 as an example? In our number system, 87 is 8 tens and 7 ones. But in binary, there is no 7. So you’ll have to know how to add.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Binary | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| Base-10 | 256 | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |

Since 1 means on and 0 means off, you add the on ones, based on the base-10 numbers. So 64, 16, 4, 2, and 1 are all on, you add them together and you’ll result in the sum of 87. That’s not really hard, is it?

**Learn More About Here:**

<https://www.brainpop.com/math/numbersandoperations/binary/>