Events Module

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Events Module

The events module allows us to work with events in Node.js

An event is an action or an occurrence that has happened in our application that we can respond to

Using the events module, we can dispatch our own custom events and respond to those custom events in a non-blocking manner

Events Module - Scenario

Let's say you're feeling hungry and head out to Dominos to have pizza

At the counter, you place your order for a pizza

When you place the order, the line cook sees the order on the screen and bakes the pizza for you

Order being placed is the event

Baking a pizza is a response to that event

Detour

Character sets

Encoding

Streams and buffers

Asynchronous JavaScript

Binary data

Computers store and represent data in binary format which is a collection of 0s and 1s

Each 0 or 1 is called a binary digit or bit for short

To work with a piece of data, a computer needs to convert that data into its binary representation

1	1
2	10
3	11
4	100
5	101
6	110
7	111
8	1000
9	1001
10	1010

$$1 \qquad 0 \qquad 0$$

$$2^2 * 1 \quad + \quad 2^1 * 0 \quad + \quad 2^0 * 0$$

$$4 \quad + \quad 0 \quad + \quad 0 \quad = \quad 4$$
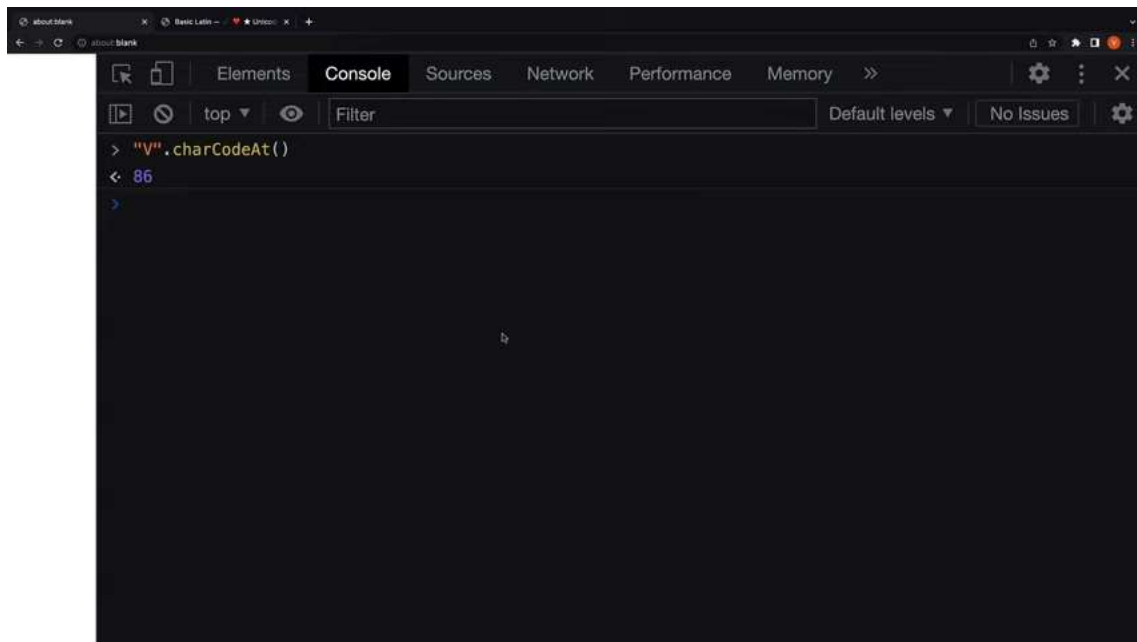
Character in binary format

V?

Computers will first convert the character to a number, then convert that number to its binary representation

Computers will first convert V to a number that represents V

86 is the numeric representation of the character V

It is also called character code

How does the computer know V should be represented as 86

```
> "V".charCodeAt()
< 86
>
```

Character Sets

Character Sets are predefined lists of characters represented by numbers

Popular character sets - Unicode and ASCII

Unicode character set dictates that 86 should represent character V

Character Encoding

Character encoding dictates how to represent a number in a character set as binary data before it can be stored in a computer

It dictates how many bits to use to represent the number

Example of a character encoding system is UTF-8

UTF-8 states that characters should be encoded in bytes (8 bits)

Eight 1s or 0s should be used to represent the code of any character in binary

4 => 100 => 00000100

V => 86 => 01010110

Similar guidelines also exist on how images and videos should be encoded and stored in binary format