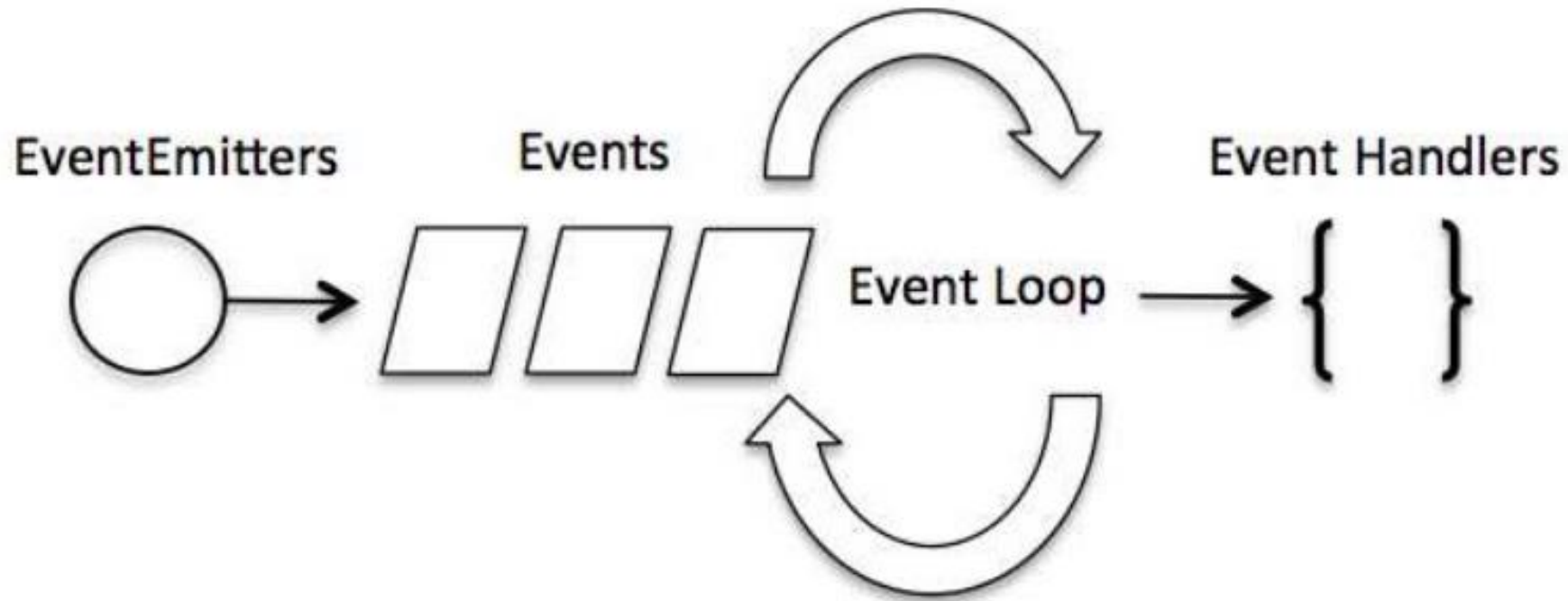# Node.js

The what, why, and how…

> " Node.js® is a JavaScript runtime built on [Chrome's V8 JavaScript engine](). Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient. Node.js' package ecosystem, [npm](), is the largest ecosystem of open source libraries in the world. "

- Node.js homepage

Why Node.js?

- Asynchronous and Event Driven
- Very Fast
- Single Threaded but Highly Scalable
- No Buffering

Asynchronous and Event Driven

Blocking vs Non-Blocking

Blocking

```
var fs = require("fs");

var data = fs.readFileSync('input.txt');

console.log(data.toString());
console.log("Program Ended");
```

Non-Blocking

```
var fs = require("fs");

fs.readFile('input.txt', function (err, data) {
    if (err) return console.error(err);
    console.log(data.toString());
});

console.log("Program Ended");
```

Node Package Manager (NPM)

- Modules/applications created and published by the community to share with the world.

When to use Node.js

- I/O bound Applications

- Data Streaming Applications

- Data Intensive Real-time Applications (DIRT)

- JSON APIs based Applications

- Single Page Applications