# Welcome to backend development

With

## NODEJS

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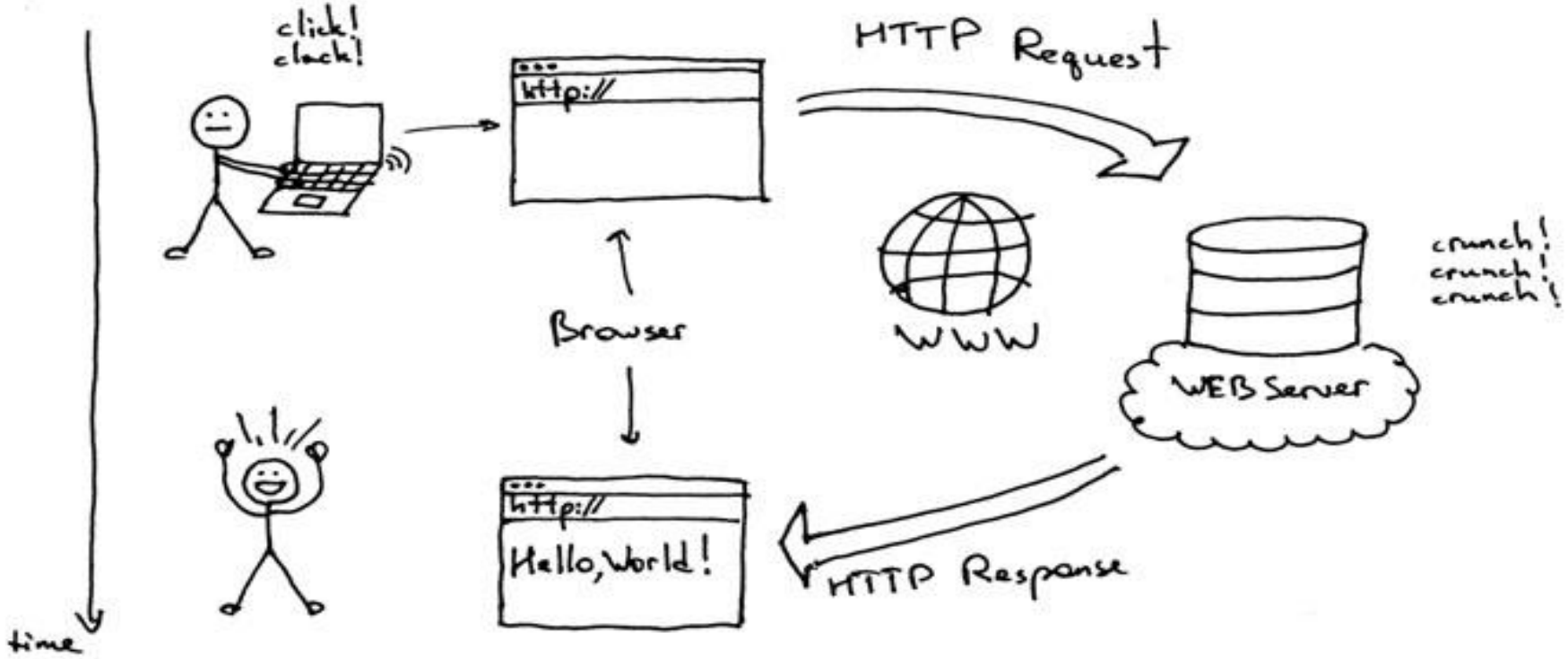
# What is involved

- Understanding  web systems architecture
- Web technologies
- Dynamic web development
- Database systems and development

# Client-server communication

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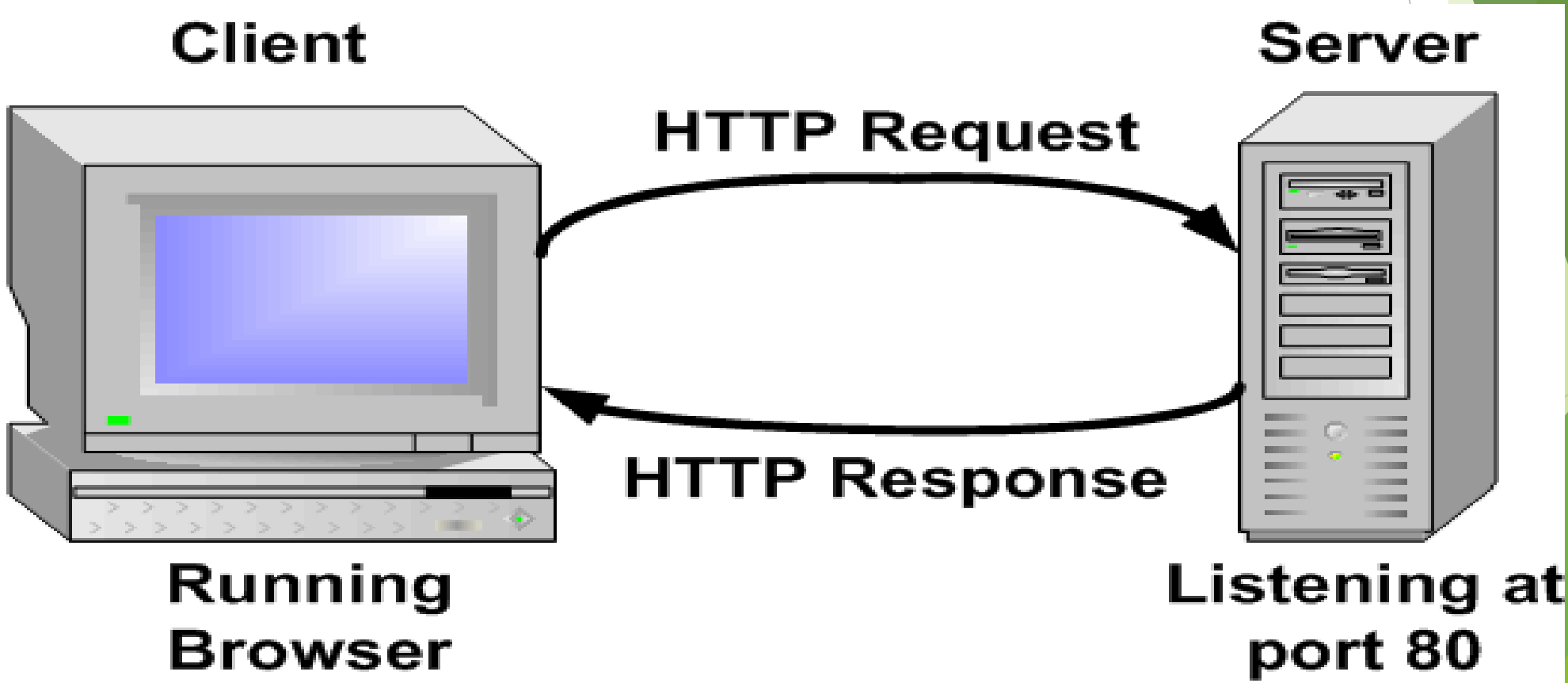
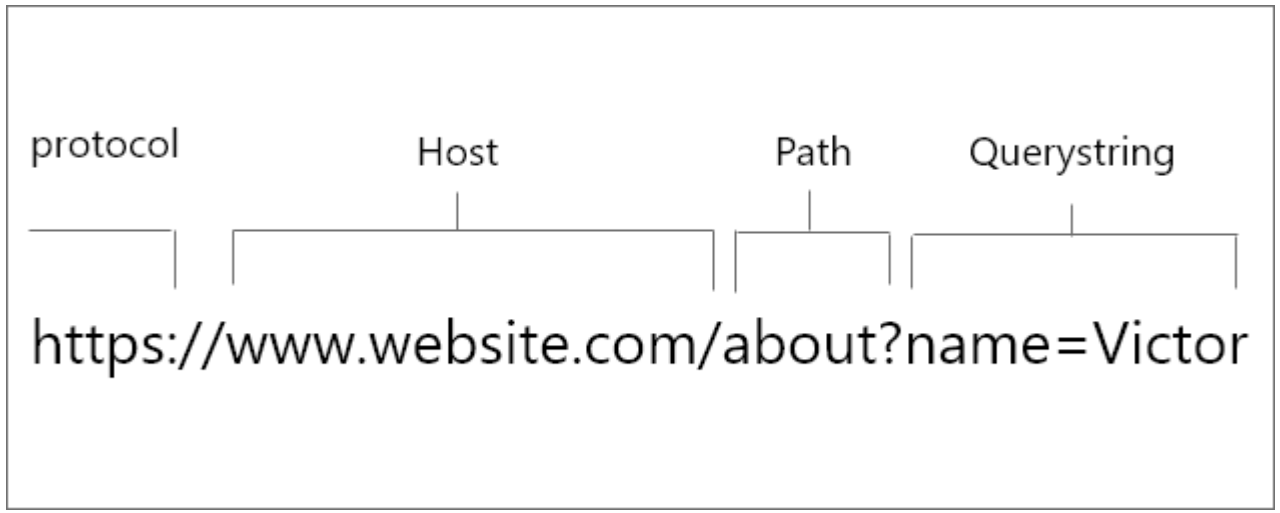
# Client-server communication continued.



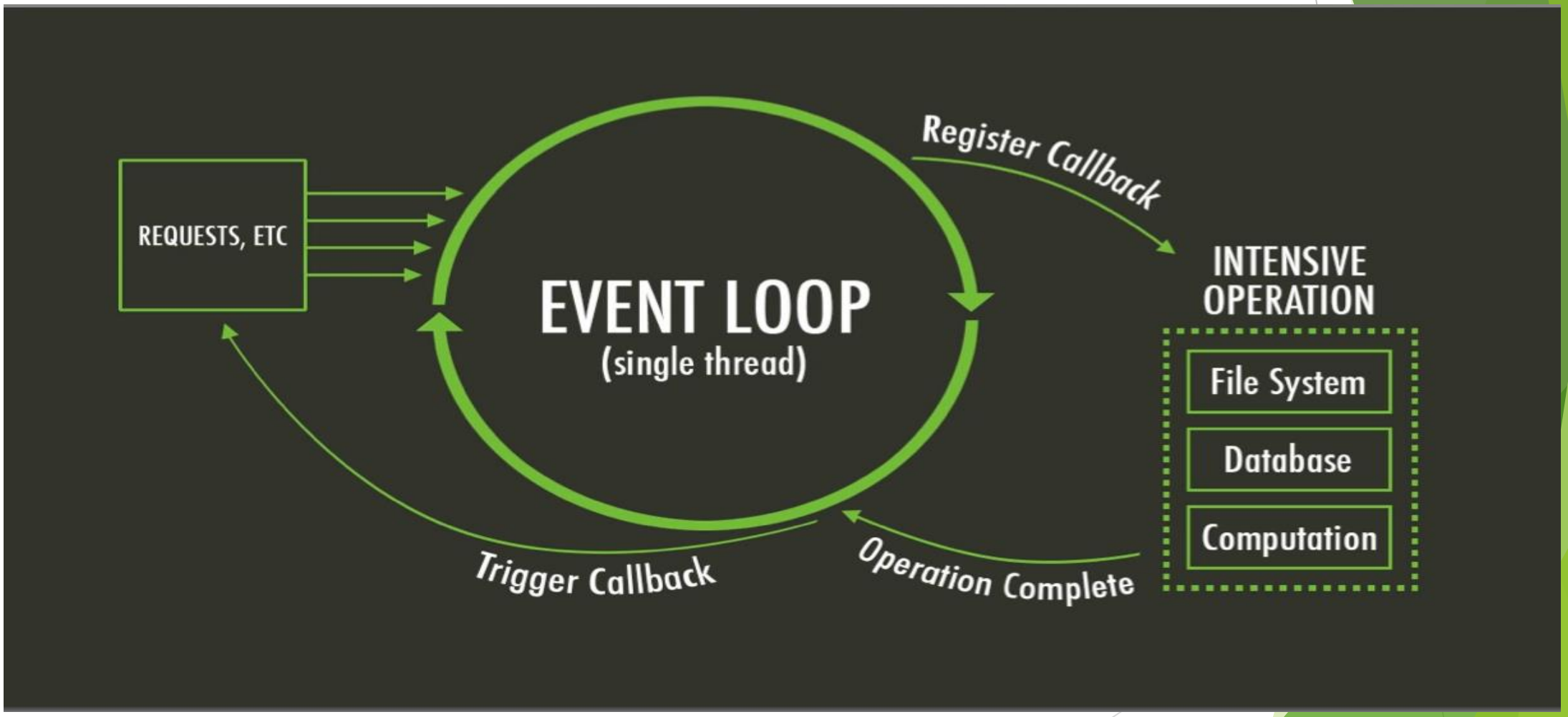
# Request format



# Web Developing with Nodejs

- Nodejs;- JavaScript running on the sever
- Single threaded (event loop)
- Modular( build on micro services integration)

# The event loop



# Writing web applications with nodejs

Creating **handlers** that get called when certain Node events occur.

# Nodejs project structure

Single directory vs framework

- Single directory: all web files and resources are in one parent directory

- Frameworks: (logical organization of  web files and resources)

# Getting started

- From the **cmd** or **terminal** Create a **Directory** and cd into it
- Do an **npm init**,  press enter button.
- Confirm that a *package.json* file is created
- Create an *entre-point* (any valid **javascript** file;- ie app.js or server)

# Hello world

//server.js

```
const http = require('http'),

server = http.createServer((request,response)=>{

response.writeHead(200,{'Content-Type':'text/plain'});
response.write('Hello world');
response.end();
});

server.listen(3000,()=>{
console.log('Node server created at port 3000');
});
```

# Get started cont'd

- From the cmd or terminal run: *node server.js - (server.js can be any other js file)*
- *Load any of your clients-(web browser)*
- *Request for* the localhost:3000.

# Getting used to nodejs callback

//server.js

```
const http = require('http'),

makeServer = function (request,response){
response.writeHead(200,{'Content-Type':'text/plain'});

response.write('Hello world');
response.end();
},

server = http.createServer(makeServer);

server.listen(3000,()=>{
console.log('Node server created at port 3000');

});
```

# Routing with nodejs

- Browsers request, they tell the server what they are looking for.
- The server responds accordingly by giving them files they ask for

# Routing with node

//server.js

```
const http = require('http'),
url = require('url'),
makeServer = function (request,response){
let path = url.parse(request.url).pathname;
console.log(path);
if(path === '/'){
response.writeHead(200,{'Content-Type':'text/plain'});
response.write('Hello world');
}
else if(path === '/about'){
response.writeHead(200,{'Content-Type':'text/plain'});
response.write('About page');
}
else if(path === '/blog'){
response.writeHead(200,{'Content-Type':'text/plain'});
response.write('Blog page');
}
else{
response.writeHead(404,{'Content-Type':'text/plain'});
response.write('Error page');
}
response.end();
},
server = http.createServer(makeServer);
server.listen(3000,()=>{
console.log('Node server created at port 3000');
});
```