Web Development with Node.js and MongoDB

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Video 1.3 Blocking Versus Non-blocking Code



In this Video, we are going to take a look at...

- Blocking versus Non-blocking code
- The Call Stack
- CLI support



Blocking Versus Non-blocking Code

- Put water to boil
- Put tea in a cup
- Turn on the heat for the pan
- Break the eggs in the pan
- Put water in a cup





Blocking Versus Non-blocking

- Running your code is not I/O
- Calling external utility is an I/O
- Applications run on single thread
- Do one thing at a time
- Avoid CPU intensive tasks



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                                     01-blocking-code.js ×
♥ ( code
                                     'use strict';
 ▼ 🕞 1
   ₹ 🗁 1.3
      1 01-blocking-code js
                                     console.log('Start script');
      3 02-hello-world.js
      3 03-hello-arguments.js
                                     setTimeout(function () { console.log('Timeout output'); }, 1000);
      3 04-hello-exit-codes.js
      3 05-hello-pipe.js
                                     let until = new Date().getTime() + 3000;
      3 06-hello.js
                                 8

► □ 1.4
                                     while (new Date().getTime() < until) {</pre>
   ▶ □ 1.5
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                                     console.log('Output after 3 second loop');

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   members environment-variables.sh
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```



15 Words, Line 1, Column 1 0 misspelled words

UTF-8

Unix

```
ifdattic at ifdattic-mbp13 in ~/projects/nodejs-mongodb-video-course/code/1/1.3 on master
$ node 01-blocking-code.js
Start script
Output after 3 second loop
Timeout output

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The Call Stack

- Last-In First-Out data structure
- Helpful for debugging
- Programs crash on stack overflow
- Composed of stack frames
- Stack frame: arguments, return address, and local variables
- Avoid too many function calls



FOLDERS 02-hello-world.js ▼ 🗁 code #!/usr/bin/env node ₹ 🗁 1 ₹ 🗁 1.3 🖰 01-blocking-code.js console.log('Hello World!'); 3 02-hello-world.js 3 03-hello-arguments.js 04-hello-exit-codes.js 3 05-hello-pipe.js 3 06-hello.js ▶ 🗀 1.4 ▶ 🗀 1.5 ▶ □ 2 ▶ 🗀 3 ▶ □ 4 ▶ □ 5 ▶ □ 6 ▶ □ 7 ▶ 🗀 8 export-environment-variables.sh ▶ 🗀 scripts

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$ ./02-hello-world.js
Hello World!
ifdattic at ifdattic-mbp13 in ~/projects/nodejs-mongodb-video-course/code/1/1.3 on master
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                                       03-hello-arguments.js ×
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                                      #!/usr/bin/env node
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       3 01-blocking-code.js
                                       'use strict';
       3 02-hello-world.js

☐ 03-hello-arguments.js

                                      console.log('Argument vector');
       4 04-hello-exit-codes.js
                                      console.log(process.argv);
       3 05-hello-pipe.js
       3 06-hello.js
                                      let args = process.argv.slice(2);

► □ 1.4

                                   9
   ▶ □ 1.5
                                      console.log('\nArguments after slicing');
  ▶ □ 2
                                      console.log(args);
                                 11

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                                 12
  ▶ □ 4
                                      let name = args[0];
  ▶ □ 5
  ▶ □ 6
                                 14
  ▶ □ 7
                                      if (!name) {
  ▶ □ 8
                                            throw Error('\nYou have not given your name, bye');
                                 16
    members environment-variables.sh
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▶ 🗀 scripts
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                                      console.log('\nHello ' + name);
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04-hello-exit-codes.js ×
    #!/usr/bin/env node
    'use strict';
    let error = true;
 6
    if (error) {
        console.log('Error occurred');
        console.log('Exiting with code higher than 0');
10
        process.exit(1);
11
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    process.exit(0);
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```

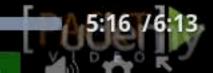


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UTF-8

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Blocking Versus Non-blocking Code
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$ ./04-hello-exit-codes.js
Error occurred
Exiting with code higher than 0
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```
#!/usr/bin/env node
process.stdin.on('data', function (data) {
    process.stdout.write('Hello ' + data);
});
```



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```
#!/usr/bin/env node
process.stdin.on('data', function (data) {
   process.stdout.write('Hello ' + data);
});
```



4 Words, Line 1, Column 1 2 misspelled words UTF-8 Unix Spaces: 4 V JaVaScript (Babel)



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        3 02-hello-world.js
        3 03-hello-arguments.js
        3 04-hello-exit-codes.js
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    metal export-environment-variables.sh
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06-hello.js

```
#!/usr/bin/env node
    'use strict';
    let readline = require('readline').createInterface({
        input: process.stdin,
        output: process.stdout
    });
 8
 9
    readline.question('What is your name?', function (answer) {
        console.log('Hello ' + answer);
11
12
13
        readline.close();
   });
14
15
```



13 Words, Line 1, Column 1 3 misspelled words UTF-8 Unix Spaces: 4 V JaVaScript (Babel)

```
ifdattic at ifdattic-mbp13 in ~/projects/nodejs-mongodb-video-course/code/1/1.3 on master [!]
$ ./06-hello.js
What is your name? Andrew
Hello Andrew
ifdattic at ifdattic-mbp13 in ~/projects/nodejs-mongodb-video-course/code/1/1.3 on master [!]
$ ...
```



Next Video

Setting Up Your Environment

