

Assignment 1.3 - Setup, Debugging, and Diagnostics

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WEB 340 - Node.js

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```
[Anachebe-MacBook-Pro:~ Anachebe$ nvm --help

Node Version Manager (v0.39.3)

Note: <version> refers to any version-like string nvm understands. This includes:
  - full or partial version numbers, starting with an optional "v" (v0.10, v0.1.2, v1)
  - default (built-in) aliases: node, stable, unstable, iojs, system
  - custom aliases you define with 'nvm alias foo'

Any options that produce colorized output should respect the '--no-colors' option.

Usage:
  nvm --help                                Show this message
  nvm --no-colors                            Suppress colored output
  nvm --version                             Print out the installed version of nvm
  nvm install <version>                      Download and install a <version>. Uses .nvmrc if available and version is omitted.
  The following optional arguments, if provided, must appear directly after 'nvm install':
    -s                                     Skip binary download, install from source only.
    -b                                     Skip source download, install from binary only.
  --reinstall-packages-from=<version>        When installing, reinstall packages installed in <node|iojs>|node version number>
  --lts                                    When installing, only select from LTS (long-term support) versions
  --lts=<LTS name>                         When installing, only select from versions for a specific LTS line
  --skip-default-packages                  When installing, skip the default-packages file if it exists
  --latest-npm                            After installing, attempt to upgrade to the latest working npm on the given node version
  --no-progress                           Disable the progress bar on any downloads
  --alias=<name>                           After installing, set the alias specified to the version specified. (same as: nvm alias <name> <version>)
  --default                               After installing, set default alias to the version specified. (same as: nvm alias default <version>)
  nvm uninstall <version>                   Uninstall a version
  nvm uninstall --lts                      Uninstall using automatic LTS (long-term support) alias 'lts/*', if available.
  nvm uninstall --lts=<LTS name>          Uninstall using automatic alias for provided LTS line, if available.
  nvm use <version>                        Modify PATH to use <version>. Uses .nvmrc if available and version is omitted.

  The following optional arguments, if provided, must appear directly after 'nvm use':
    --silent                               Silences stdout/stderr output
    --lts                                  Uses automatic LTS (long-term support) alias 'lts/*', if available.
  nvm exec [<version>] [<command>]           Run <command> on <version>. Uses .nvmrc if available and version is omitted.
  The following optional arguments, if provided, must appear directly after 'nvm exec':
    --silent                               Silences stdout/stderr output
    --lts                                  Uses automatic LTS (long-term support) alias 'lts/*', if available.
    --lts=<LTS name>                      Uses automatic alias for provided LTS line, if available.
  nvm run [<version>] [<args>]                Run 'node' <version> with <args> as arguments. Uses .nvmrc if available and version is omitted.

  The following optional arguments, if provided, must appear directly after 'nvm run':
    --silent                               Silences stdout/stderr output
    --lts                                  Uses automatic LTS (long-term support) alias 'lts/*', if available.
    --lts=<LTS name>                      Uses automatic alias for provided LTS line, if available.
  nvm current                             Display currently activated version of Node
  nvm ls [<version>]                        List installed versions, matching a given <version> if provided
  --no-colors                            Suppress colored output
  --alias                                Suppress 'nvm alias' output
  nvm ls-remote [<version>]                 List remote versions available for install, matching a given <version> if provided
  --lts                                  When listing, only show LTS (long-term support) versions
  --lts=<LTS name>                      When listing, only show versions for a specific LTS line
  --no-colors                            Suppress colored output
  nvm version <version>                   Resolve the given description to a single local version
  nvm version-remote <version>            Resolve the given description to a single remote version
  --lts                                  When listing, only select from LTS (long-term support) versions

nvm current
nvm ls [<version>]
--no-colors
--alias
nvm ls-remote [<version>]
--lts
--lts=<LTS name>
--no-colors
nvm version <version>
nvm version-remote <version>
--lts
--lts=<LTS name>
nvm deactivate
--silent
nvm alias [<pattern>]
--no-colors
nvm alias <name> <version>
nvm unalias <name>
nvm install-latest-npm
nvm reinstall-packages <version>
nvm unload
nvm which [current | <version>]
--silent
nvm cache dir
nvm cache clear
nvm set-colors [<color codes>]
Initial colors are:
  bygr
Color codes:
  r/R = red / bold red
  g/G = green / bold green
  b/B = blue / bold blue
  c/C = cyan / bold cyan
  m/M = magenta / bold magenta
  y/Y = yellow / bold yellow
  k/K = black / bold black
  w/W = light grey / white

Example:
nvm install 8.0.0
nvm use 8.0
nvm run 6.10.3 app.js
nvm exec 4.8.3 node app.js
nvm alias 8.1.0
nvm alias default node
Always default to the latest available node version on a shell

nvm install node
nvm use node
nvm install --lts
nvm use --lts
Set text colors to cyan, green, bold yellow, magenta, and white

Note:
to remove, delete, or uninstall nvm - just remove the 'SNVM_DIR' folder (usually '~/.nvm')

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```

```
nvm current
nvm ls [<version>]
--no-colors
--alias
nvm ls-remote [<version>]
--lts
--lts=<LTS name>
--no-colors
nvm version <version>
nvm version-remote <version>
--lts
--lts=<LTS name>
nvm deactivate
--silent
nvm alias [<pattern>]
--no-colors
nvm alias <name> <version>
nvm unalias <name>
nvm install-latest-npm
nvm reinstall-packages <version>
nvm unload
nvm which [current | <version>]
--silent
nvm cache dir
nvm cache clear
nvm set-colors [<color codes>]
Initial colors are:
  bygr
Color codes:
  r/R = red / bold red
  g/G = green / bold green
  b/B = blue / bold blue
  c/C = cyan / bold cyan
  m/M = magenta / bold magenta
  y/Y = yellow / bold yellow
  k/K = black / bold black
  w/W = light grey / white

Install a specific version number
Use the latest available 8.0.x release
Run app.js using node 6.10.3
Run 'node app.js' with the PATH pointing to node 4.8.3
Set default node version on a shell
Always default to the latest available node version on a shell

nvm set-colors cgYmW
Set text colors to cyan, green, bold yellow, magenta, and white

Note:
to remove, delete, or uninstall nvm - just remove the 'SNVM_DIR' folder (usually '~/.nvm')

Anachebe-MacBook-Pro:~ Anachebe$
```

```
Anachebe-MacBook-Pro:- Anachebe$ node -v  
v16.18.0  
Anachebe-MacBook-Pro:- Anachebe$
```

```
Anachebe-MacBook-Pro:- Anachebe$ npm -v  
8.19.2  
Anachebe-MacBook-Pro:- Anachebe$
```

```
Anachebe-MacBook-Pro:- Anachebe$ node --help  
Usage: node [options] [ script.js ] [arguments]  
      node inspect [options] [ script.js | host:port ] [arguments]  
  
Options:  
-                                     script read from stdin (default if no file name is provided,  
                                         interactive mode if a try)  
--                                     indicate the end of node options  
--abort-on-uncaught-exception          aborting instead of exiting causes a core file to be  
                                         generated for analysis  
--build-snapshot                       Generate a snapshot blob when the process exits. Currently  
                                         only supported in the node_mksnapshot binary.  
-c, --check                            syntax check script without executing  
--completion-bash                      print source-able bash completion script  
-C, --conditions=...                   additional user conditions for conditional exports and  
                                         imports  
--cpu-prof                            Start the V8 CPU profiler on start up, and write the CPU  
                                         profile to disk before exit. If --cpu-prof-dir is not  
                                         specified, write the profile to the current working  
                                         directory.  
--cpu-prof-dir=...                     Directory where the V8 profiles generated by --cpu-prof will  
                                         be placed. Does not affect --prof.  
--cpu-prof-interval=...                 specified sampling interval in microseconds for the V8 CPU  
                                         profile generated with --cpu-prof. (default: 1000)  
--cpu-prof-name=...                    specified file name of the V8 CPU profile generated with  
                                         --cpu-prof  
--diagnostic-dir=...                  set dir for all output files (default: current working  
                                         directory)  
--disable-proto=...                   disable Object.prototype.__proto__  
--disallow-code-generation-from-strings  
--dns-result-order=...                 set default value of verbatim in dns.lookup. Options are  
                                         'ip4vfirst' (IPv4 addresses are placed before IPv6 addresses)  
                                         'verbatim' (addresses are in the order the DNS resolver  
                                         returned them)  
--enable-fips                          enable FIPS crypto at startup  
--enable-source-maps                   Source Map V3 support for stack traces  
-e, --eval=...                          evaluate script  
--experimental-fetch                  experimental Fetch API  
--experimental-global-customevent    expose experimental CustomEvent on the global scope  
--experimental-import-meta-resolve   experimental ES Module import.meta.resolve() support  
--loader, --experimental-loader=...   use the specified module as a custom loader  
--experimental-network-imports       experimental https: support for the ES Module loader  
--experimental-policy=...             use the specified file as a security policy  
--es-module-specifier-resolution, --experimental-specifier-resolution=...
```

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Anachebe -- bash -- 144x45

Select extension resolution algorithm for es modules; either
'explicit' (default) or 'node'
--experimental-vm-modules experimental ES Module support in vm module
--experimental-wasi-unstable-preview1 experimental WASI support
--experimental-wasm-modules experimental ES Module support for webassembly modules
--force-context-aware disable loading non-context-aware addons
--force-fips force FIPS crypto (cannot be disabled)
--force-node-api-uncaught-exceptions-policy enforces 'uncaughtException' event on Node API asynchronous
--frozen-intrinsics callbacks
--heap-prof experimental frozen intrinsics support
--heap-prof-dir... Start the V8 heap profiler on start up, and write the heap
profile to disk before exit. If --heap-prof-dir is not
specified, write the profile to the current working
directory.
--heap-prof-interval... Directory where the V8 heap profiles generated by --heap-prof
will be placed.
--heap-prof-name... specified sampling interval in bytes for the V8 heap profile
generated with --heap-prof. (default: 512 * 1024)
--heapsnapshot-near-heap-limit... specified file name of the V8 heap profile generated with
--heap-prof
--heapsnapshot-signal... Generate heap snapshots whenever V8 is approaching the heap
limit. No more than the specified number of heap snapshots
will be generated.
--huge-max-old-generation-size Generate heap snapshot on specified signal
--icu-data-dir... print node command line options (currently set)
--input-type... increase default maximum heap size on machines with 16GB
memory or more
--insecure-http-parser set ICU data load path to dir (overrides NODE_ICU_DATA)
--inspect=[host:]port (note: linked-in ICU data is present)
--inspect-brk=[host:]port set module type for string inputs
use an insecure HTTP parser that accepts invalid HTTP headers
activate inspector on host:port (default: 127.0.0.1:9229)
activate inspector on host:port and break at start of user
script
--debug-port, --inspect-port=[host:]port set host:port for inspector
--inspect-publish-uid... comma separated list of destinations for inspector
uid(default: stderr,http)
--i, --interactive always enter the REPL even if stdin does not appear to be a
terminal
--interpreted-frames-native-stack help system profilers to translate JavaScript interpreted
frames
--jittless disable runtime allocation of executable memory
--max-http-header-size... set the maximum size of HTTP headers (default: 16384 (16KB))
--no-addons disable loading native addons
```

```
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--no-deprecation silence deprecation warnings
--no-experimental-repl-await experimental await keyword support in REPL
--no-force-async-hooks-checks disable checks for async_hooks
--no-global-search-paths disable global module search paths
--no-warnings silence all process warnings
--node-memory-debug Run with extra debug checks for memory leaks in Node.js
itself
--openssl-config... load OpenSSL configuration from the specified file (overrides
OPENSSL_CONF)
--openssl-shared-config enable OpenSSL shared configuration
--pending-deprecation emit pending deprecation warnings
--policy-integrity... ensure the security policy contents match the specified
integrity
--preserve-symlinks preserve symbolic links when resolving
--preserve-symlinks-main preserve symbolic links when resolving the main module
--p, --print [...] evaluate script and print result
--prof Generate V8 profiler output.
--prof-process process V8 profiler output generated using --prof
--redirect-warnings... write warnings to file instead of stderr
--report-compact output compact single-line JSON
--report-directory, --report-dir=... define custom report pathname. (default: current working
directory)
--report-filename... define custom report file name. (default:
YYYYMMDD.HHMMSS.PID.SEQUENCE#.txt)
--report-on-fatalerror generate diagnostic report on fatal (internal) errors
--report-on-signal generate diagnostic report upon receiving signals
--report-signal=... causes diagnostic report to be produced on provided signal,
unsupported in Windows. (default: SIGUSR2)
--report-uncought-exception generate diagnostic report on uncaught exceptions
--r, --require... module to preload (option can be repeated)
--secure-heap... total size of the OpenSSL secure heap
--secure-heap-min... minimum allocation size from the OpenSSL secure heap
--test... launch test runner on startup
--test-only run tests with 'only' option set
--throw-deprecation throw an exception on deprecations
--title... the process title to use on startup
--tls-cipher-list... use an alternative default TLS cipher list
--tls-keylog... log TLS decryption keys to named file for traffic analysis
--tls-max-v1.0 set default TLS maximum to TLSv1.2 (default: TLSv1.3)
--tls-max-v1.2 set default TLS maximum to TLSv1.3 (default: TLSv1.3)
--tls-max-v1.3 set default TLS minimum to TLSv1.0 (default: TLSv1.2)
--tls-min-v1.0 set default TLS minimum to TLSv1.1 (default: TLSv1.2)
--tls-min-v1.1 set default TLS minimum to TLSv1.2 (default: TLSv1.2)
--tls-min-v1.2 set default TLS minimum to TLSv1.3 (default: TLSv1.2)
--tls-min-v1.3 (deprecated) trace Atomics.wait() operations
```

```
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--trace-atomics=wait          (deprecated) trace Atomics.wait() operations
--trace-deprecation           show stack traces on deprecations
--trace-event-categories=...  comma separated list of trace event categories to record
--trace-event-file-pattern=... Template string specifying the filepath for the trace-events
data, it supports ${rotation} and ${pid}.
--trace-exit                  show stack trace when an environment exits
--trace-sigint                enable printing JavaScript stacktrace on SIGINT
--trace-sync-io                show stack trace when use of sync IO is detected after the
first tick
--trace-tls                   prints TLS packet trace information to stderr
--trace-uncaught              show stack traces for the 'throw' behind uncaught exceptions
--trace-warnings               show stack traces on process warnings
--track-heap-objects          track heap object allocations for heap snapshots
--unhandled-rejections=...    defines unhandled rejections behavior. Options are 'strict'
(always raise an error), 'throw' (raise an error unless 'unhandledRejection' hook is set), 'warn' (log a warning),
'none' (silence warnings), 'warn-with-error-code' (log a warning and set exit code 1 unless 'unhandledRejection' hook
is set). (default: throw)
--use-bundled-ca              use bundled CA store (default)
--use-largepages=...           Map the Node.js static code to large pages. Options are 'off'
(the default value, meaning do not map), 'on' (map and ignore
failure, reporting it to stderr), or 'silent' (map and
silently ignore failure)
--use-openssl-ca              use OpenSSL's default CA store
--v8-options                  print V8 command line options
--v8-pool-size=...             set V8's thread pool size
-v, --version                 print Node.js version
--zero-fill-buffers            automatically zero-fill all newly allocated Buffer and
SlowBuffer instances

Environment variables:
FORCE_COLOR
when set to 'true', 1, 2, 3, or an empty string causes
NO_COLOR and NODE_DISABLE_COLORS to be ignored.
NO_COLOR
Alias for NODE_DISABLE_COLORS
NODE_DEBUG
':'-separated list of core modules that should print debug
information
NODE_DEBUG_NATIVE
':'-separated list of C++ core debug categories that should
print debug output
NODE_DISABLE_COLORS
set to 1 to disable colors in the REPL
NODE_EXTRA_CA_CERTS
path to additional CA certificates file. Only read once
during process startup.
NODE_NO_WARNINGS
set to 1 to silence process warnings
NODE_PATH
':'-separated list of directories prefixed to the module
search path
```

```
Anachebe — bash — 144x45

warning and set exit code 1 unless 'unhandledRejection' hook
is set). (default: throw)
--use-bundled-ca              use bundled CA store (default)
--use-largepages=...           Map the Node.js static code to large pages. Options are 'off'
(the default value, meaning do not map), 'on' (map and ignore
failure, reporting it to stderr), or 'silent' (map and
silently ignore failure)
--use-openssl-ca              use OpenSSL's default CA store
--v8-options                  print V8 command line options
--v8-pool-size=...             set V8's thread pool size
-v, --version                 print Node.js version
--zero-fill-buffers            automatically zero-fill all newly allocated Buffer and
SlowBuffer instances

Environment variables:
FORCE_COLOR
when set to 'true', 1, 2, 3, or an empty string causes
NO_COLOR and NODE_DISABLE_COLORS to be ignored.
NO_COLOR
Alias for NODE_DISABLE_COLORS
NODE_DEBUG
':'-separated list of core modules that should print debug
information
NODE_DEBUG_NATIVE
':'-separated list of C++ core debug categories that should
print debug output
NODE_DISABLE_COLORS
set to 1 to disable colors in the REPL
NODE_EXTRA_CA_CERTS
path to additional CA certificates file. Only read once
during process startup.
NODE_NO_WARNINGS
set to 1 to silence process warnings
NODE_PATH
':'-separated list of directories prefixed to the module
search path
NODE_PENDING_DEPRECATED
set to 1 to emit pending deprecation warnings
NODE_PENDING_PIPE_INSTANCES
set the number of pending pipe instance handles on Windows
NODE_PRESERVE_SYMLINKS
set to 1 to preserve symbolic links when resolving and
caching modules
NODE_REDIRECT_WARNINGS
write warnings to path instead of stderr
NODE_REPL_EXTERNAL_MODULE
path to a Node.js module which will be loaded in place of the
built-in REPL
NODE_REPL_HISTORY
path to the persistent REPL history file
NODE_SKIP_PLATFORM_CHECK
set to 1 to skip the check for a supported platform during
Node.js startup
NODE_TLS_REJECT_UNAUTHORIZED
set to 0 to disable TLS certificate validation
NODE_V8_COVERAGE
directory to output v8 coverage JSON to
TZ
specify the timezone configuration
UV_THREADPOOL_SIZE
sets the number of threads used in libuv's threadpool

Documentation can be found at https://nodejs.org/
Anachebe$
```

Profiler Console Sources Memory axe DevTools

books.js

```

1 /*
2 =====
3 ; Title: books.js
4 ; Author: Professor Krasso
5 ; Date: 8 March 2022
6 ; Description: Assignment 1 solution
7 =====
8 */
9
10 class Book { Book = class Book
11   constructor(title, author) {
12     this.title = title;
13     this.author = author;
14   }
15 }
16
17 class BookStore { BookStore = class BookStore
18   books = [];
19
20   constructor() {
21     this.books = [
22       new Book('The Hobbit', 'J.R.R. Tolkien'),
23       new Book('The Fellowship of the Ring', 'J.R.R. Tolkien'),
24       new Book('The Two Towers', 'J.R.R. Tolkien'),
25       new Book('The Return of the King', 'J.R.R. Tolkien'),
26       new Book('Dune', 'Frank Herbert')
27     ];
28   }
29
30   showBooks() {
31     console.log('\n -- DISPLAYING AVAILABLE BOOKS --');
32     for (let book of this.books) {
33       let currentBook = book;
34     }
35   }
36 }
37
38 let bookStore = new BookStore();
bookStore.showBooks();

```

Debugger paused

Watch

Breakpoints

No breakpoints

Scope

Local

- this: Object
- Book: class Book
- BookStore: class BookStore
- bookStore: undefined
- exports: {}
- module: Module {id: '.', path: '_dirname: "/Users/Anachebe/Desktop"', _filename: "/Users/Anachebe/Desktop/global"}
- Global

Call Stack

- (anonymous) books.js:38
- Module_compile node:internal/m...js/loader:1152
- Module_extensions.js node:internal/m...js/loader:1209
- Module_load node:internal/m...js/loader:1033
- Module_load node:internal/m...cjs/loader:868
- executeUserEntryPoint node:internal/m...es/run_main:81
- (anonymous) node:internal/m...main_module:22

Line 31, Column 34 node:vm:360 Coverage: n/a

Console

node[2782] ▾ Filter

Default levels ▾ No Issues

Profiler Console Sources Memory axe DevTools

books.js

```

1 /*
2 =====
3 ; Title: books.js
4 ; Author: Professor Krasso
5 ; Date: 8 March 2022
6 ; Description: Assignment 1 solution
7 =====
8 */
9
10 class Book {
11   constructor(title, author) {
12     this.title = title;
13     this.author = author;
14   }
15 }
16
17 class BookStore {
18   books = [];
19
20   constructor() {
21     this.books = [
22       new Book('The Hobbit', 'J.R.R. Tolkien'),
23       new Book('The Fellowship of the Ring', 'J.R.R. Tolkien'),
24       new Book('The Two Towers', 'J.R.R. Tolkien'),
25       new Book('The Return of the King', 'J.R.R. Tolkien'),
26       new Book('Dune', 'Frank Herbert')
27     ];
28   }
29
30   showBooks() {
31     console.log('\n -- DISPLAYING AVAILABLE BOOKS --');
32     for (let book of this.books) {
33       let currentBook = book;
34     }
35   }
36 }
37
38 let bookStore = new BookStore();
bookStore.showBooks();

```

Paused on breakpoint

Watch

Breakpoints

books.js:33

Scope

Block

- currentBook: undefined

Block

- book: Book {title: 'The Hobbit'}

Local

- this: BookStore

Closure

Global

Call Stack

- showBooks books.js:33
- (anonymous) books.js:39
- Module_compile node:internal/m...js/loader:1152
- Module_extensions.js node:internal/m...js/loader:1209
- Module_load node:internal/m...js/loader:1033
- Module_load node:internal/m...cjs/loader:868
- executeUserEntryPoint node:internal/m...es/run_main:81
- (anonymous) node:internal/m...main_module:22

Line 33, Column 31 node:vm:360 Coverage: n/a

Console

node[2854] ▾ Filter

Default levels ▾ No Issues

Screenshot of the Chrome DevTools Sources tab showing a paused breakpoint in books.js. The code defines a Book class and a BookStore class. A breakpoint is set at line 33, where a new Book object is created. The Call Stack shows the execution path from books.js:33 down to node:internal/main/module:22.

```
1 /*
2 =====
3 ; Title: books.js
4 ; Author: Professor Krasso
5 ; Date: 8 March 2022
6 ; Description: Assignment 1
7 =====
8 */
9
10 class Book {
11   constructor(title, author) {
12     this.title = title;
13     this.author = author;
14   }
15 }
16
17 class BookStore {
18   books = [];
19
20   constructor() {
21     this.books = [
22       new Book('The Hobbit'),
23       new Book('The Fellowship of the Ring'),
24       new Book('The Two Towers'),
25       new Book('The Return of the King'),
26       new Book('Dune'),
27     ];
28   }
29
30   showBooks() {
31     console.log(`\n -- Books --`);
32     for (let book of this.books) {
33       let currentBook =
34         book;
35     }
36   }
37
38 let bookStore = new BookStore();
bookStore.showBooks();
```

Screenshot of the Chrome DevTools Sources tab showing a paused breakpoint in books.js. The code is identical to the first screenshot. The Call Stack shows the execution path from books.js:33 down to node:internal/main/module:22. In this version, the currentBook variable is highlighted in red, indicating it is the target of the breakpoint.

```
1 /*
2 =====
3 ; Title: books.js
4 ; Author: Professor Krasso
5 ; Date: 8 March 2022
6 ; Description: Assignment 1
7 =====
8 */
9
10 class Book {
11   constructor(title, author) {
12     this.title = title;
13     this.author = author;
14   }
15 }
16
17 class BookStore {
18   books = [];
19
20   constructor() {
21     this.books = [
22       new Book('The Hobbit'),
23       new Book('The Fellowship of the Ring'),
24       new Book('The Two Towers'),
25       new Book('The Return of the King'),
26       new Book('Dune'),
27     ];
28   }
29
30   showBooks() {
31     console.log(`\n -- Books --`);
32     for (let book of this.books) {
33       let currentBook =
34         book;
35     }
36   }
37
38 let bookStore = new BookStore();
bookStore.showBooks();
```

Profiler Console Sources Memory axe DevTools

books.js x

Paused on breakpoint

Breakpoints

books.js:33
let currentBook = book;

Scope

Block

currentBook: Book {title: 'The Fellowship of the Ring', author: 'J.R.R. Tolkien'}

Block

book: Book {title: 'The Two Towers', author: 'J.R.R. Tolkien'}

Local

this: BookStore

Closure

Global

Call Stack

showBooks

(anonymous)

Module._compile

Module._extensions.js

Module.load

Module._load

executeUserEntryPoint

(anonymous)

global

books.js:33 books.js:39 node:internal/m...js/loader:1152 node:internal/m...js/loader:1209 node:internal/m...js/loader:1033 node:internal/m...cjs/loader:868 node:internal/m...es/run_main:81 node:internal/m...main_module:22

{ } Line 33, Column 31 node:vm:360 Cov

Console

node[2854] Filter Default levels No Issues

This screenshot shows the Chrome DevTools Sources tab with a script named 'books.js' open. A breakpoint is set on line 33, where a variable 'currentBook' is assigned. The 'Call Stack' panel on the right shows the function hierarchy: 'showBooks' calls 'executeUserEntryPoint', which in turn calls 'Module._load'. The 'Scope' panel shows the current context is a local variable 'currentBook' in the 'showBooks' function, which has a value of 'The Fellowship of the Ring' by 'J.R.R. Tolkien'. The 'Breakpoints' section has a checkbox next to line 33, which is checked.

Profiler Console Sources Memory axe DevTools

books.js x

Resume script execution - F8 - ⌘ ↴

Breakpoints

books.js:33
let currentBook = book;

Scope

Block

currentBook: Book {title: 'The Two Towers', author: 'J.R.R. Tolkien'}

Block

book: Book {title: 'The Return of the King', author: 'J.R.R. Tolkien'}

Local

this: BookStore

Closure

Global

Call Stack

showBooks

(anonymous)

Module._compile

Module._extensions.js

Module.load

Module._load

executeUserEntryPoint

(anonymous)

global

books.js:33 books.js:39 node:internal/m...js/loader:1152 node:internal/m...js/loader:1209 node:internal/m...js/loader:1033 node:internal/m...cjs/loader:868 node:internal/m...es/run_main:81 node:internal/m...main_module:22

{ } Line 33, Column 31 node:vm:360 Cov

Console

node[2854] Filter Default levels No Issues

This screenshot shows the same setup as the first one, but with the script execution resumed. The status bar at the top says 'Resume script execution - F8 - ⌘ ↴'. The call stack and scope information are identical to the previous screenshot, indicating the code has executed the assignment statement and moved on to the next line.

Profiler Console Sources Memory axe DevTools

books.js x

3 ; Title: books.js
4 ; Author: Professor Krasso
5 ; Date: 8 March 2022
6 ; Description: Assignment 1 s
7 ;=====
8 /
9
10 class Book {
11 constructor(title, author)
12 this.title = title;
13 this.author = author;
14 }
15 }
16
17 class BookStore {
18 books = [];
19
20 constructor() {
21 this.books = [
22 new Book('The Hobbit'),
23 new Book('The Fellowship of the Ring'),
24 new Book('The Two Towers'),
25 new Book('The Return of the King'),
26 new Book('Dune'),
27]
28 }
29
30 showBooks() {
31 console.log('\n---\n')
32 for (let book of this.books) {
33 let currentBook = book;
34 }
35 }
36 }
37
38 let bookStore = new BookStore();
39 bookStore.showBooks();

Resume script execution - F8 - 36 \

Breakpoints

books.js:33 let currentBook = book;

Scope

Block

currentBook: Book {title: 'The Return of the King', author: 'J.R.R. Tolkien'}

Block

book: Book {title: 'Dune', author: 'Frank Herbert'}

Local

this: BookStore

Closure

Global

Call Stack

showBooks

(anonymous)

Module._compile

Module._extensions.js

Module.load

Module._load

executeUserEntryPoint

(anonymous)

global

books.js:33
books.js:39
node:internal/m...js/loader:1152
node:internal/m...js/loader:1209
node:internal/m...js/loader:1033
node:internal/m...cjs/loader:868
node:internal/m...es/run_main:81
node:internal/m...main_module:22

{ } Line 33, Column 31 node:vm:360 Cov

Console

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Default levels ▾ No Issues