

What is a JS tool that allows developers to write backend (server-side) programs in JS?	Node.js
What comes with a a handful of built-in modules that help facilitate writing backend programs in JS?	Node.js
What's core modules include HTTP, file system, path, and assertion testing?	Node.js
What module acts as a server?	HTTP
What module reads and modifies files?	File system
What module is for working with directory and file paths?	Path
What module checks code against prescribed constraints?	Asserting testing
What's another common module used with Node.js but not core?	Express
What runs between the served created by Node.js and the frontend pages of a web app?	Express
What also handles the app's routing?	Express
What directs users to the correct page based on their interaction with the app?	Routing
Like client side JS, what can be used to display useful debug information?	The console
What is a fundamental method that tells your server to listen on a given port, putting it in running state?	<p><code>app.listen(port)</code></p> <p>E..g at the bottom of myApp.js:</p> <pre>// This would be part of the basic setup of an Express app // but to allow FCC to run tests, the server is already active /** app.listen(process.env.PORT 3000); */</pre>
What takes the following structure in Express?	routes

app.METHOD(PATH,HANDLER)	
What is an http method in lowercase?	METHOD
What is a relative path on the server (it can be a string or even a regex)?	PATH
What is a function that Express calls when the route is matched?	HANDLER
What take the form of function(req, res) {...}	Handlers
What is the required object in a handler?	req
What is the response object in a handler?	res
<p>What is this an example of which will serve the string 'Response String'?</p> <pre>function(req, res) { res.send('Response String'); }</pre>	A handler
Use the app.get() method to serve the string Hello Express, to GET requests matching the / root path. Be sure that your code works by looking at the logs, then see the results in your browser, clicking the button 'Show Live' in the Glitch UI.	<pre>app.get('/', function(req, res) { res.send('Hello Express'); })</pre>
What can be used to respond with a file?	<p>Method:</p> <pre>res.sendFile(path)</pre>
What can be put inside the app.get('/', ...) route handler?	<pre>res.sendFile(path)</pre>
What will set the appropriate headers to instruct your browser on how to handle the file you want to send, according to its type, then read and send the file?	<pre>res.sendFile(path)</pre>
What needs an absolute file path?	<pre>res.sendFile(path)</pre>
What can the Node global variable __dirname be used to do?	<p>Calculate the path, e.g.</p> <pre>absolutePath = __dirname + relativePath/file.ext</pre>

What file should we send in myApp?	<pre> /views/index.html::: app.get('/', function(req, res) { res.sendFile(__dirname + '/views/index.html'); }). </pre>
What usually has one or more directories that are visible by the user?	An HTML server
What can be placed in these directories?	Static assets like stylesheets, scripts, images
What does Express use to put in place this functionality?	The middleware <code>express.static(path)</code>
What is the parameter 'path'?	The absolute path of the folder containing the assets
What are functions that intercept route handlers, adding some some kind of information?	middleware
What needs to be mounted?	middleware
What is mounted using the method <code>app.use(path, middlewareFunction)</code> ?	middleware
Which argument is optional and if not included, the middleware will be executed for all requests?	The first argument, <code>path</code> , is optional
Mount the <code>express.static()</code> middleware for all the requests with <code>app.use()</code> . The absolute path to the assets folder is <code>__dirname + '/public'</code> .	<pre> /** 4) Serve static assets */ app.use(express.static(__dirname + '/public')); </pre>
What does an HTML server serve?	HTML
What does an API server serve?	data
What allows for the exchange of data in a simple way, without the need for clients to know anything about the server?	REST API
What stands for Representational State Transfer?	REST API

In what does the client only need to know where the resource is (URL), and the action it wants to perform on it (the verb)?	REST API
What verb is used when you are fetching some data without modifying anything?	get
What is the preferred format for moving data around the web?	JSON
What can we create by creating a route that responds with JSON at the path /json?	A simple API
What method closes the request-response loop, returning the data?	res.json()
Where do we use res.json()?	Inside the app.get() method's route handler
What do we pass in to res.json() as an argument?	An object
What converts a valid JSON object into a string, then sets the appropriate browser headers to tell the browser that you are serving JSON, and sends the data back?	res.json()
Serve the object {"message": "Hello json"} as a response in JSON format, to the GET requests to the route /json. Then point your browser to your-app-url/json, you should see the message on the screen.	<pre>/** 5) serve JSON on a specific route */ app.get('/json', function(req, res) { res.json({"message": "Hello json"}); });</pre>
What is a hidden file that is used to pass environment variables to your application?	.env
What is secret, can only be accessed by you, and can be used to store data like API keys database URI?	.env
What can also be used to store configuration files which can change the behavior of your app without the need to rewrite code?	.env
What are accessible from the app as process.env.VAR_NAME?	Environment variables
What is a global Node object and variables are passed as strings?	process.env

By convention, what are all uppercase with words separated by underscore?	Variable names
What is a shell file, so you don't need to wrap names or values in quotes?	.env
It is also important to note that there cannot be what around the equals sign when you assigning values to your variables?	Space, e.g. VAR_NAME=value
Usually you will put each what on a separate line?	Variable definition
Let's add an environment variable as a configuration option. Store the variable MESSAGE_STYLE=uppercase in the .env file. Then tell the GET /json route handler that you created in the last challenge to transform the response object's message to uppercase if process.env.MESSAGE_STYLE equals uppercase. The response object should become {"message": "HELLO JSON"}.	<pre>/** 5) serve JSON on a specific route */ app.get('/json', function(req, res) { res.json({"message": process.env.MESSAGE_STYLE === 'uppercase' ? "HELLO JSON" : "Hello json"}); }); /** 6) Use the .env file to configure the app */ process.env.MESSAGE_STYLE='uppercase';</pre>
What are functions that take 3 arguments, the request object, the response object, and the next function in the app's request-response cycle?	Middleware functions
What executwe some code that can have side effects on the app, and usually add info to the request or response objects?	Middleware functions
What can also end the cycle sending the response, when some condition is met?	Middleware functions
If they don't send the response, what when done start the execution of the next function in the stack?	Middleware functions
What argumnent in the middleware function starts the execution of the enxtnxt function in the stack?	next()
What can we use to mount a middleware function at root level?	app.use(<mware-function>)

If you want a function to be executed only for POST request, what could you use?	<code>app.post(<mware-function>)</code>
What can be used to get the request method (http verb), the relative route path, and the caller's ip from the request object?	<code>req.method</code> , <code>req.path</code> and <code>req.ip</code>
What do you have to call when done, or the server will be stuck forever?	<code>next()</code>
Build a simple logger. For every request, it should log in the console a string taking the following format: method path - ip	<pre>app.use(function(req, res, next) { console.log(req.method+" "+req.path+" - "+req.ip); next(); });</pre>
What can be mounted at a specific route using <code>app.METHOD(path, middlewareFunction)</code> ?	middleware
What can also be chained inside route defition?	<p>Middleware</p> <pre>app.get('/user', function(req, res, next) { req.user = getUserSync(); // Hypothetical synchronous operation next(); }, function(req, res) { res.send(req.user); })</pre>
In the route <code>app.get('/now', ...)</code> chain a middleware function and the final handler. In the middleware function you should add the current time to the request object in the <code>req.time</code> key. You can use <code>new Date().toString()</code> . In the handler, respond with a JSON object, taking the structure <code>{time: req.time}</code> .	<pre>/** 8) Chaining middleware. A Time server */ app.get('/now', function(req, res, next) { req.time = new Date().toString(); // Hypothetical synchronous operation next(); }, function(req, res) { res.send({'time': req.time}); });</pre>
What are named segments of the URL, delimited by slashes, which are one possible way clients can let us know what information they seek?	Route parameters
Each segment of what captures the value of	Route parameter

the part of the URL which matches its position?	
The captured values can be found where?	Req.params object
<p>What's this an example of?</p> <p>route_path: '/user/:userId/book/:bookId' actual_request_URL: '/user/546/book/6754' req.params: {userId: '546', bookId: '6754'}</p>	req.params
<p>Build an echo server, mounted at the route GET /:word/echo. Respond with a JSON object, taking the structure {echo: word}. You can find the word to be repeated at req.params.word. You can test your route from your browser's address bar, visiting some matching routes, e.g. your-app-rootpath/freecodecamp/echo</p>	<pre>/** 9) Get input from client - Route parameters */ app.get('/:word/echo', function(req, res, next) { res.send({'echo': req.params.word}); next(); });</pre>
Another common way to get input from the client is by encoding the data after the route path, using what?	A query string
What is delimited by a question mark?	The query string
What includes field=value couples?	Query string
Each what is separated by an ampersand (&)?	Each couple in a query string
What can parse the data from the query string and populate the object req.query?	express
Some characters in what cannot be in URLs and have to be encoded before sent?	Query strings
<p>What's this an example of:</p> <p>route_path: '/library' actual_request_URL: '/library?userId=546&bookId=6754' req.query: {userId: '546', bookId: '6754'}</p>	Query string
Build an API endpoint, mounted at GET /name. Respond with a JSON document, taking the structure { name: 'firstname	<pre>app.get('/name', function(req, res, next) { var firstName = req.query.first; var lastName = req.query.last;</pre>

lastname'}). The first and last name parameters should be encoded in a query string e.g. ?first=firstname&last=lastname.	<pre>res.json({'name': firstName + ' ' + lastName}); });</pre>
What syntax allows chaining different verb handlers on the same path route?	<pre>app.route(path).get(handler).post(handler)</pre>
Besides GET, what is the other common http verb?	POST
What is the default method used to send client data with HTML forms?	POST
What is used to send data to create new items in the database (a new user, new blog post)?	POST
In what kind of request is the data not in the url but instead hidden in the request body?	POST
What's this the raw content of? POST /path/subpath HTTP/1.0 From: john@example.com User-Agent: someBrowser/1.0 Content-Type: application/x-www-form-urlencoded Content-Length: 20 name=John+Doe&age=25	HTTP POST request
What defaults to being encoded like a query string?	POST
What type of encoding is used to upload binary files?	multipart/form-data
With AJAX we can also use what to handle data having a more complex structure?	JSON
To parse data coming from POST request, we have to install what?	Body-parser package
What allows you to use a series of middleware which can decode data in different formats?	Body-parser package
What has to be listed in dependencies in the package.json?	"body-parser": "^1.15.2"

