Node.js Demo

1 Objectives

In this lab, you will learn how to set up a Node.js web service that accepts http calls implementing a very basic RESTful interface, queries your AWS database server, and returns JSON objects.temperature and humidity data (similar to the in class demonstration).

2 Exercise 1: Using a RESTful Web Service

In this exercise, Node.js code will be used to set up a web service that accepts “GET” requests from clients that are wanting to “consume” information currently contained in an AWS cloud based database.

1. Navigate to the folder on the C: drive containing the provided Node.js code. Open the file index.js using a text editor (i.e., Notepad++).

2. Look through the code and discuss with your group what you think each part does.

   This code defines our web service API. It currently supports only one type of call; a “GET”. A “GET” returns the current value of the requested data.

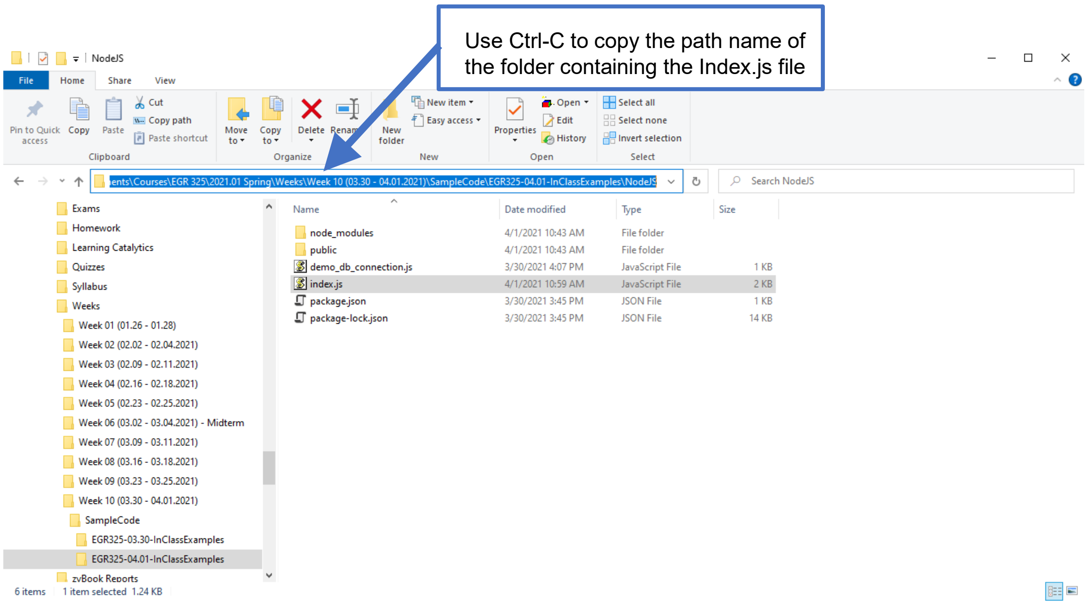
```
…
app.get('/invoice', function(req, res) {
		console.log("Invoice request: ALL invoices" + new Date()) ;

		con.connect(function(err) {
				if (err) throw err;
				console.log("Connected!");

				var sql = "SELECT * FROM invoices;";

				con.query(sql, function (err, result, fields) {
						if (err) throw err;
						res.json(result);
				});
		});
});
```

3. Close the file without making any changes. Use windows explorer to copy the name of the folder that contains the index.js file.

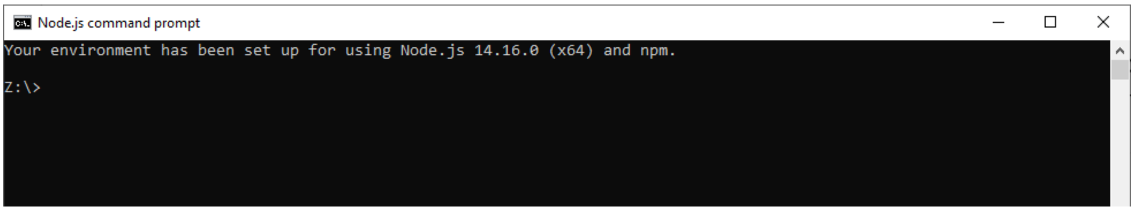


Use Ctrl-C to copy the path name of the folder containing the Index.js file

ents\Courses\EGR 325\2021.01 Spring\Weeks\Week 10 (03.30 - 04.01.2021)\SampleCode\EGR325-04.01-InClassExamples\NodeJS

Name	Date modified	Type	Size
node_modules	4/1/2021 10:43 AM	File folder	
public	4/1/2021 10:43 AM	File folder	
demo_db_connection.js	3/30/2021 4:07 PM	JavaScript File	1 KB
index.js	4/1/2021 10:59 AM	JavaScript File	2 KB
package.json	3/30/2021 3:45 PM	JSON File	1 KB
package-lock.json	3/30/2021 3:45 PM	JSON File	14 KB

4. Click "Start->All Programs->Node.js->Node.js command prompt" to open a Node.js command prompt window. Type "CD" followed by a space. Then "right click" and PASTE the full path of the folder containing the index.js file to create a single command that changes the "directory" (another name for folder) to the one containing the index.js file.

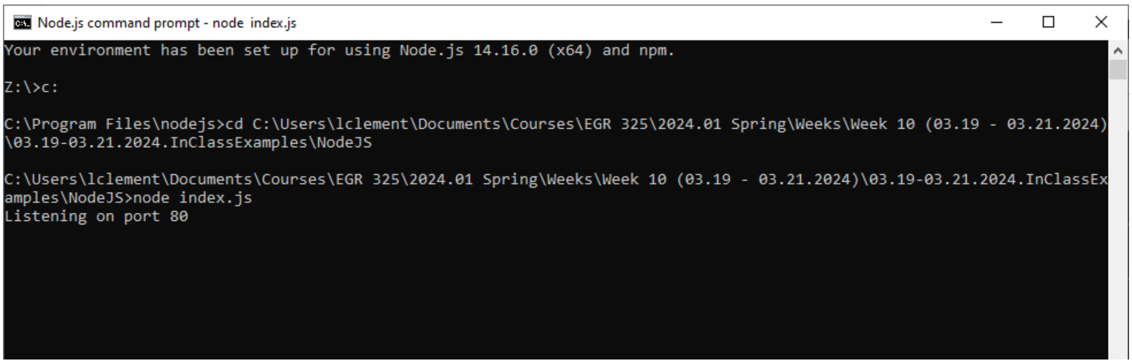


```
Your environment has been set up for using Node.js 14.16.0 (x64) and npm.

Z:\>
```

5. Enter the followig command in the Node.js command prompt window:
node index.js

You should see a message appear indicating that the service is now "Listening on port 80".



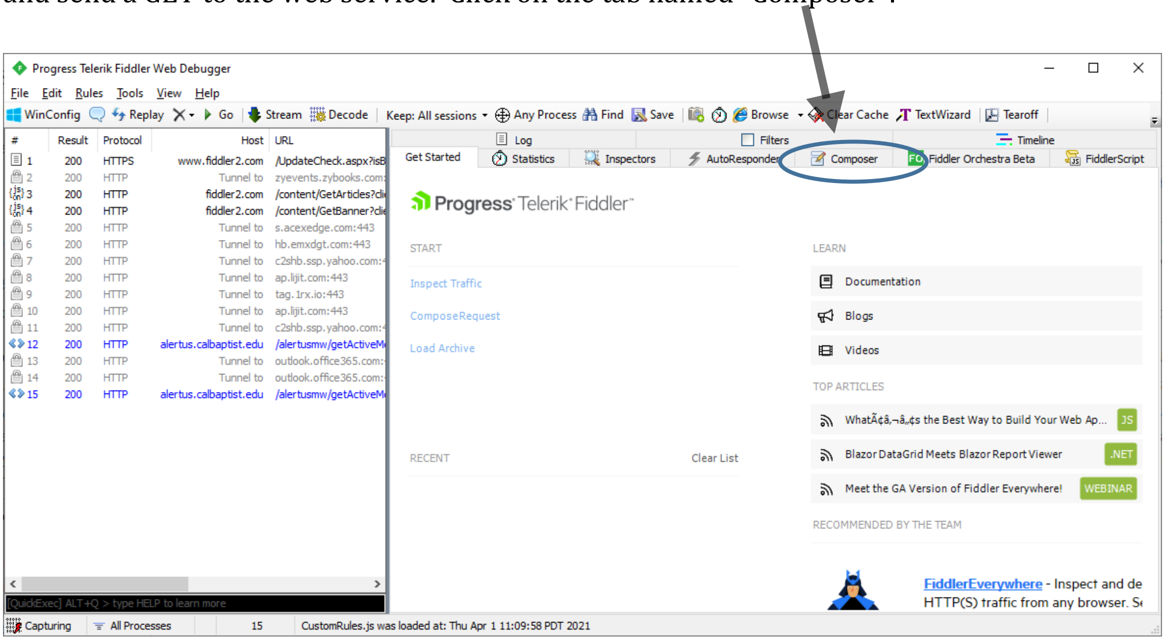
```
Your environment has been set up for using Node.js 14.16.0 (x64) and npm.

Z:\>c:

C:\Program Files\nodejs>cd C:\Users\lclement\Documents\Courses\EGR 325\2024.01 Spring\Weeks\Week 10 (03.19 - 03.21.2024)
\03.19-03.21.2024.InClassExamples\NodeJS

C:\Users\lclement\Documents\Courses\EGR 325\2024.01 Spring\Weeks\Week 10 (03.19 - 03.21.2024)\03.19-03.21.2024.InClassEx
amples\NodeJS>node index.js
Listening on port 80
```

6. Click “Start->All Programs->Fiddler 4” to launch a program named “Fiddler” that will allow us to create and send a GET to the web service. Click on the tab named “Composer”.


Progress Telerik Fiddler Web Debugger
File Edit Rules Tools View Help
WinConfig Replay Go Stream Decode Keep: All sessions Any Process Find Save Browse Clear Cache TextWizard Tearoff
Log Filters Timeline
Get Started Statistics Inspectors AutoResponder Composer Fiddler Orchestra Beta FiddlerScript
Progress Telerik Fiddler
START
Inspect Traffic
ComposeRequest
Load Archive
RECENT
Clear List
LEARN
Documentation
Blogs
Videos
TOP ARTICLES
JS
.NET
WEBINAR
RECOMMENDED BY THE TEAM
Capturing
All Processes

#	Result	Protocol	Host	URL
1	200	HTTPS	www.fiddler2.com	/UpdateCheck.aspx?isB
2	200	HTTP	Tunnel to	zyevents.zybooks.com:
3	200	HTTP	fiddler2.com	/content/GetArticles?cli
4	200	HTTP	fiddler2.com	/content/GetBanner?cli
5	200	HTTP	Tunnel to	s.acexedge.com:443
6	200	HTTP	Tunnel to	hb.emxdgt.com:443
7	200	HTTP	Tunnel to	c2shb.ssp.yahoo.com:
8	200	HTTP	Tunnel to	ap.lijit.com:443
9	200	HTTP	Tunnel to	tag.1rx.io:443
10	200	HTTP	Tunnel to	ap.lijit.com:443
11	200	HTTP	Tunnel to	c2shb.ssp.yahoo.com:
12	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiveM
13	200	HTTP	Tunnel to	outlook.office365.com:
14	200	HTTP	Tunnel to	outlook.office365.com:
15	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiveM

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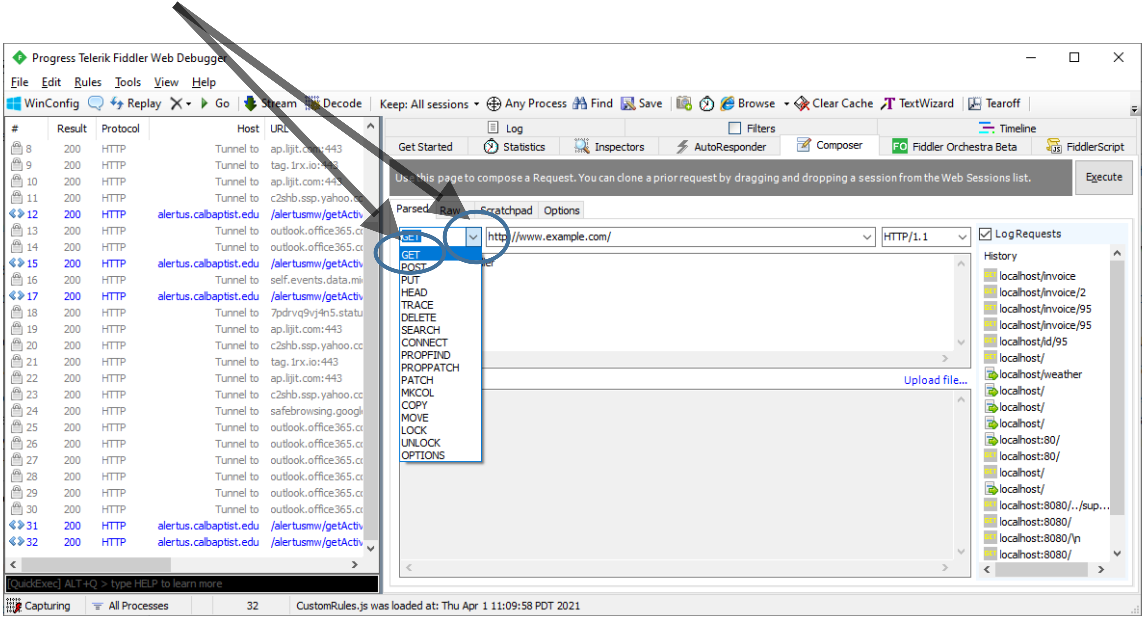
Meet the GA Version of Fiddler Everywhere!

FiddlerEverywhere - Inspect and de HTTP(S) traffic from any browser. S

[QuickExec] ALT+Q > type HELP to learn more

Capturing All Processes 15 CustomRules.js was loaded at: Thu Apr 1 11:09:58 PDT 2021

7. Click the down arrow to open a drop down menu and select “GET”. That is all that our index.js file currently supports…


Progress Telerik Fiddler Web Debugger
File Edit Rules Tools View Help
WinConfig Replay Go Stream Decode Keep: All sessions Any Process Find Save Browse Clear Cache TextWizard Tearoff
Log Filters Timeline
Get Started Statistics Inspectors AutoResponder Composer Fiddler Orchestra Beta FiddlerScript
Execute
Parsed Raw Scratchpad Options
GET
POST
PUT
HEAD
TRACE
DELETE
SEARCH
CONNECT
PROPFIND
PROPPATCH
PATCH
MKCOL
COPY
MOVE
LOCK
UNLOCK
OPTIONS
Upload file...
☑ Log Requests
History

#	Result	Protocol	Host	URL
8	200	HTTP	Tunnel to	ap.lijit.com:443
9	200	HTTP	Tunnel to	tag.1rx.io:443
10	200	HTTP	Tunnel to	ap.lijit.com:443
11	200	HTTP	Tunnel to	c2shb.ssp.yahoo.
12	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
13	200	HTTP	Tunnel to	outlook.office365.c
14	200	HTTP	Tunnel to	outlook.office365.c
15	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
16	200	HTTP	Tunnel to	self.events.data.mi
17	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
18	200	HTTP	Tunnel to	7pdrvq9vj4n5.statu
19	200	HTTP	Tunnel to	ap.lijit.com:443
20	200	HTTP	Tunnel to	c2shb.ssp.yahoo.cc
21	200	HTTP	Tunnel to	tag.1rx.io:443
22	200	HTTP	Tunnel to	ap.lijit.com:443
23	200	HTTP	Tunnel to	c2shb.ssp.yahoo.cc
24	200	HTTP	Tunnel to	safebrowsing.googl
25	200	HTTP	Tunnel to	outlook.office365.c
26	200	HTTP	Tunnel to	outlook.office365.c
27	200	HTTP	Tunnel to	outlook.office365.c
28	200	HTTP	Tunnel to	outlook.office365.c
29	200	HTTP	Tunnel to	outlook.office365.c
30	200	HTTP	Tunnel to	outlook.office365.c
31	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
32	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv

Use this page to compose a Request. You can clone a prior request by dragging and dropping a session from the Web Sessions list.

GET http://www.example.com/ HTTP/1.1

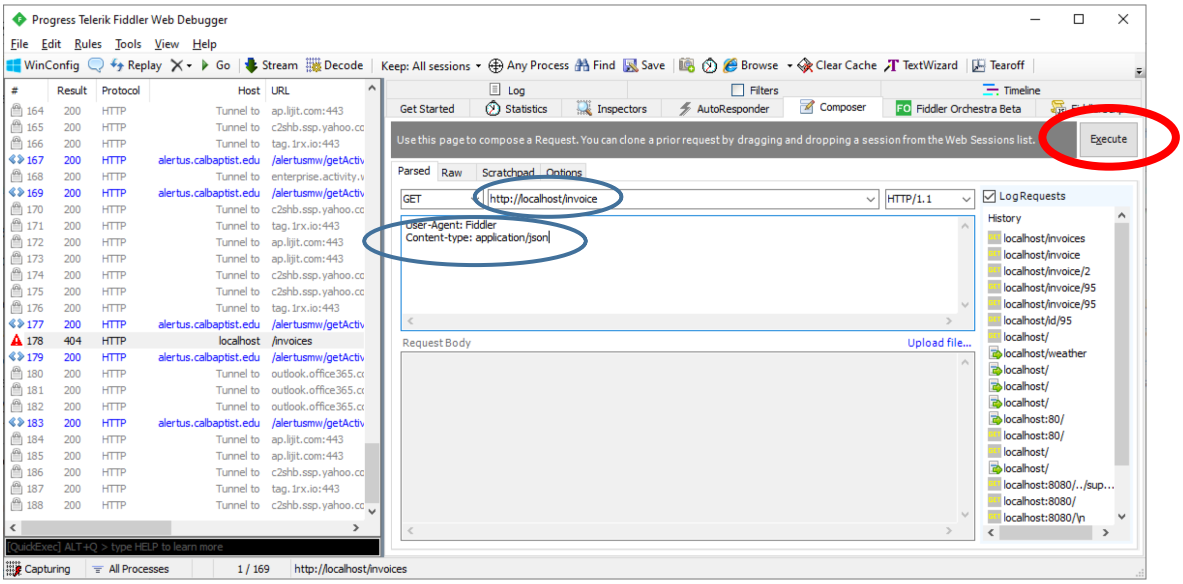
History:
localhost/invoice
localhost/invoice/2
localhost/invoice/95
localhost/invoice/95
localhost/id/95
localhost/
localhost/weather
localhost/
localhost/
localhost/
localhost:80/
localhost:80/
localhost/
localhost/
localhost:8080/../sup...
localhost:8080/
localhost:8080/\n
localhost:8080/

[QuickExec] ALT+Q > type HELP to learn more

Capturing All Processes 32 CustomRules.js was loaded at: Thu Apr 1 11:09:58 PDT 2021

8. Change the URL to be http://localhost/invoice, add a new header “Content-type: application/json” to the text box containing the headers. When everything is entered click the Execute button to submit the

GET request.


Progress Telerik Fiddler Web Debugger
File Edit Rules Tools View Help
WinConfig Replay Go Stream Decode Keep: All sessions Any Process Find Save Browse Clear Cache TextWizard Tearoff
Log Filters Timeline
Get Started Statistics Inspectors AutoResponder Composer Fiddler Orchestra Beta
Execute
Parsed Raw Scratchpad Options
Request Body
Upload file...
History
[QuickExec] ALT+Q > type HELP to learn more
Capturing All Processes

#	Result	Protocol	Host	URL
164	200	HTTP	Tunnel to	ap.lijit.com:443
165	200	HTTP	Tunnel to	c2shb.ssp.yahoo.co
166	200	HTTP	Tunnel to	tag.1rx.io:443
167	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
168	200	HTTP	Tunnel to	enterprise.activity.w
169	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
170	200	HTTP	Tunnel to	c2shb.ssp.yahoo.co
171	200	HTTP	Tunnel to	tag.1rx.io:443
172	200	HTTP	Tunnel to	ap.lijit.com:443
173	200	HTTP	Tunnel to	ap.lijit.com:443
174	200	HTTP	Tunnel to	c2shb.ssp.yahoo.co
175	200	HTTP	Tunnel to	c2shb.ssp.yahoo.co
176	200	HTTP	Tunnel to	tag.1rx.io:443
177	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
178	404	HTTP	localhost	/invoices
179	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
180	200	HTTP	Tunnel to	outlook.office365.co
181	200	HTTP	Tunnel to	outlook.office365.co
182	200	HTTP	Tunnel to	outlook.office365.co
183	200	HTTP	alertus.calbaptist.edu	/alertusmw/getActiv
184	200	HTTP	Tunnel to	ap.lijit.com:443
185	200	HTTP	Tunnel to	ap.lijit.com:443
186	200	HTTP	Tunnel to	c2shb.ssp.yahoo.co
187	200	HTTP	Tunnel to	tag.1rx.io:443
188	200	HTTP	Tunnel to	c2shb.ssp.yahoo.co

Use this page to compose a Request. You can clone a prior request by dragging and dropping a session from the Web Sessions list.

GET http://localhost/invoice HTTP/1.1

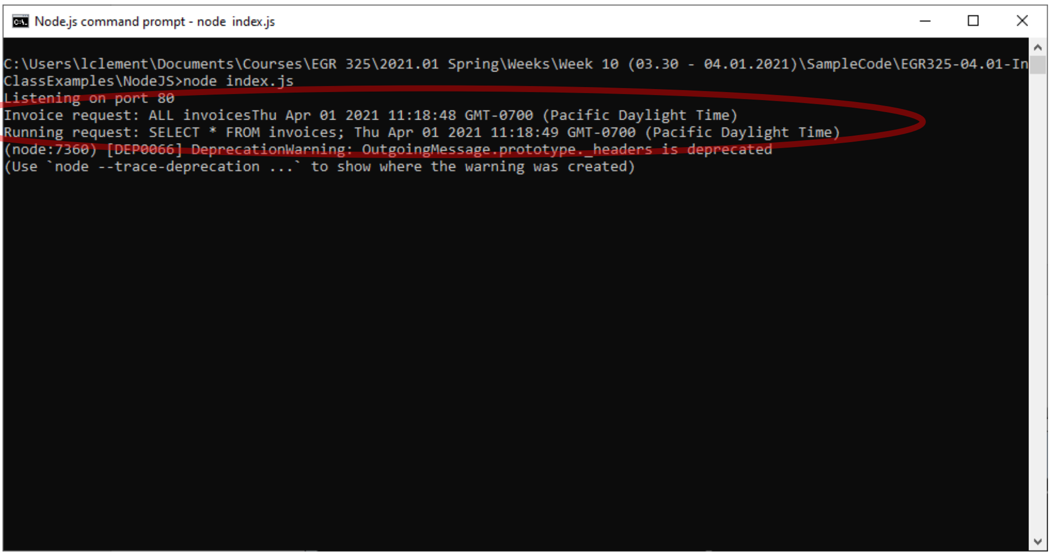
```
User-Agent: Fiddler
Content-type: application/json
```

☑ Log Requests

History:
- localhost/invoices
- localhost/invoice
- localhost/invoice/2
- localhost/invoice/95
- localhost/invoice/95
- localhost/id/95
- localhost/
- localhost/weather
- localhost/
- localhost/
- localhost/
- localhost:80/
- localhost:80/
- localhost/
- localhost/
- localhost:8080/../sup...
- localhost:8080/
- localhost:8080/\n

1 / 169 http://localhost/invoices

You should then see a record of the GET request in the Node.js command window.

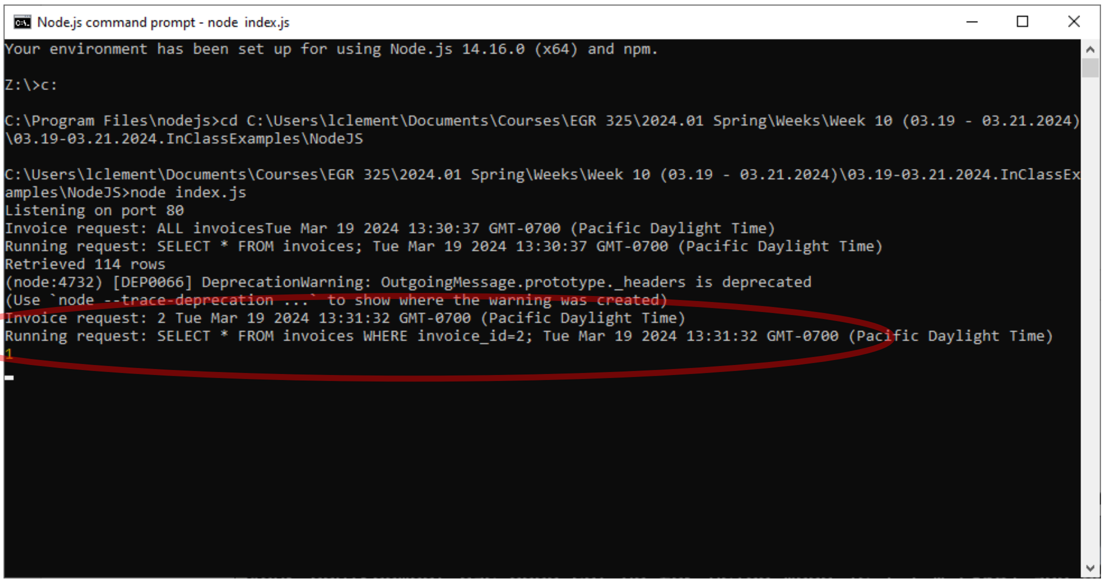


```
C:\Users\lclement\Documents\Courses\EGR 325\2021.01 Spring\Weeks\Week 10 (03.30 - 04.01.2021)\SampleCode\EGR325-04.01-In
ClassExamples\NodeJS>node index.js
Listening on port 80
Invoice request: ALL invoicesThu Apr 01 2021 11:18:48 GMT-0700 (Pacific Daylight Time)
Running request: SELECT * FROM invoices; Thu Apr 01 2021 11:18:49 GMT-0700 (Pacific Daylight Time)
(node:7360) [DEP0066] DeprecationWarning: OutgoingMessage.prototype._headers is deprecated
(Use `node --trace-deprecation ...` to show where the warning was created)
```

9. Return to the Fiddler window and update the URL for the HTTP GET request to be

http://localhost/invoice/2. Click the Execute button to submit the GET request.

You should then see a record of the GET request in the Node.js command window.



```
Your environment has been set up for using Node.js 14.16.0 (x64) and npm.

Z:\>c:

C:\Program Files\nodejs>cd C:\Users\lclement\Documents\Courses\EGR 325\2024.01 Spring\Weeks\Week 10 (03.19 - 03.21.2024)
\03.19-03.21.2024.InClassExamples\NodeJS

C:\Users\lclement\Documents\Courses\EGR 325\2024.01 Spring\Weeks\Week 10 (03.19 - 03.21.2024)\03.19-03.21.2024.InClassEx
amples\NodeJS>node index.js
Listening on port 80
Invoice request: ALL invoicesTue Mar 19 2024 13:30:37 GMT-0700 (Pacific Daylight Time)
Running request: SELECT * FROM invoices; Tue Mar 19 2024 13:30:37 GMT-0700 (Pacific Daylight Time)
Retrieved 114 rows
(node:4732) [DEP0066] DeprecationWarning: OutgoingMessage.prototype._headers is deprecated
(Use `node --trace-deprecation ...` to show where the warning was created)
Invoice request: 2 Tue Mar 19 2024 13:31:32 GMT-0700 (Pacific Daylight Time)
Running request: SELECT * FROM invoices WHERE invoice_id=2; Tue Mar 19 2024 13:31:32 GMT-0700 (Pacific Daylight Time)
1
```