

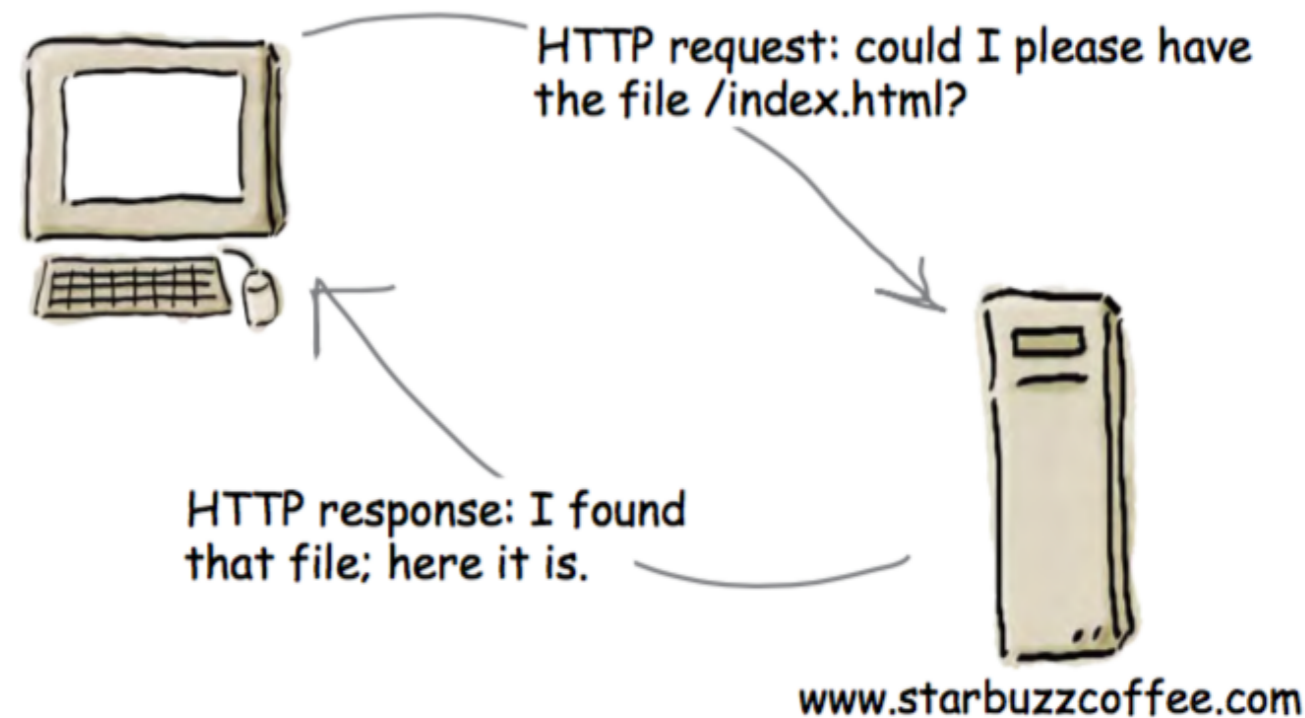
Harp.js & Surge

Harp & Surge

- The role of a Web Server
- The Harp.js Server
- The Surge.sh Deployment service

The Role of a Web Server

- A Web Server is a program which is 'listening' on a particular 'Port' for HTTP Requests
- When a request is received, the server determines if the request can be 'served'
- If it can, then the server packages up a response and sends it
- Requests are generated by browsers (usually), either by:
 - The user entering a url in the address bar of the browser
 - Or the user clicking on a link on a page



Harp.js

- For professional web site development, you need a local web server. Otherwise, the site you develop will not be sufficiently tested.
- Harp.js is a web server you can run on your own computer.
- It behaves exactly like a web server used by a hosting company
- You can use it to simulate how your page will behave when it is eventually deployed to a server
- Additionally - the web server can provide a range of additional features you can use in your web development

harp

Documentation

The static web server with built-in preprocessing.

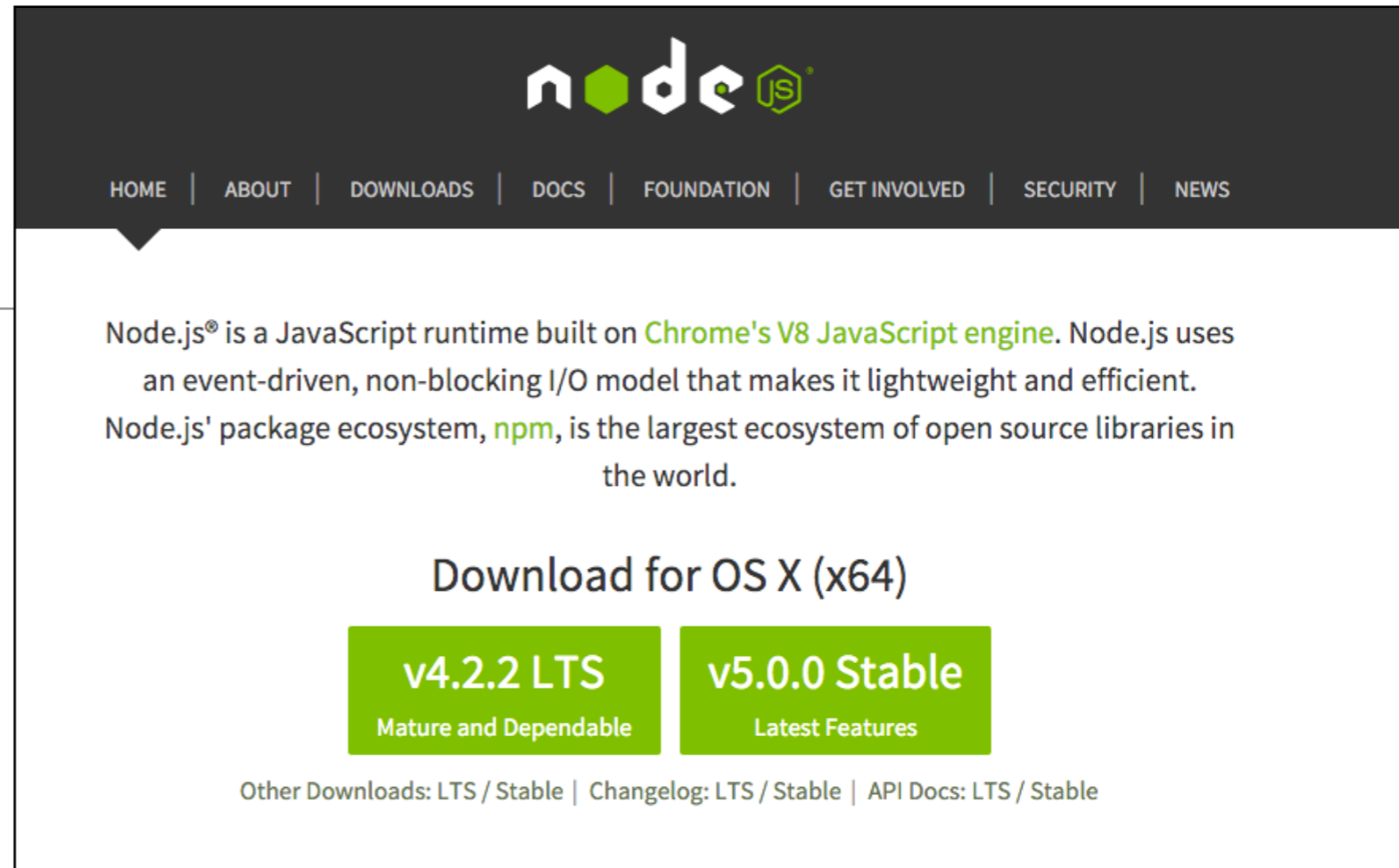
Harp serves Jade, Markdown, EJS, CoffeeScript, Sass, LESS and Stylus as HTML, CSS & JavaScript—no configuration necessary.

Follow @HarpWebServer

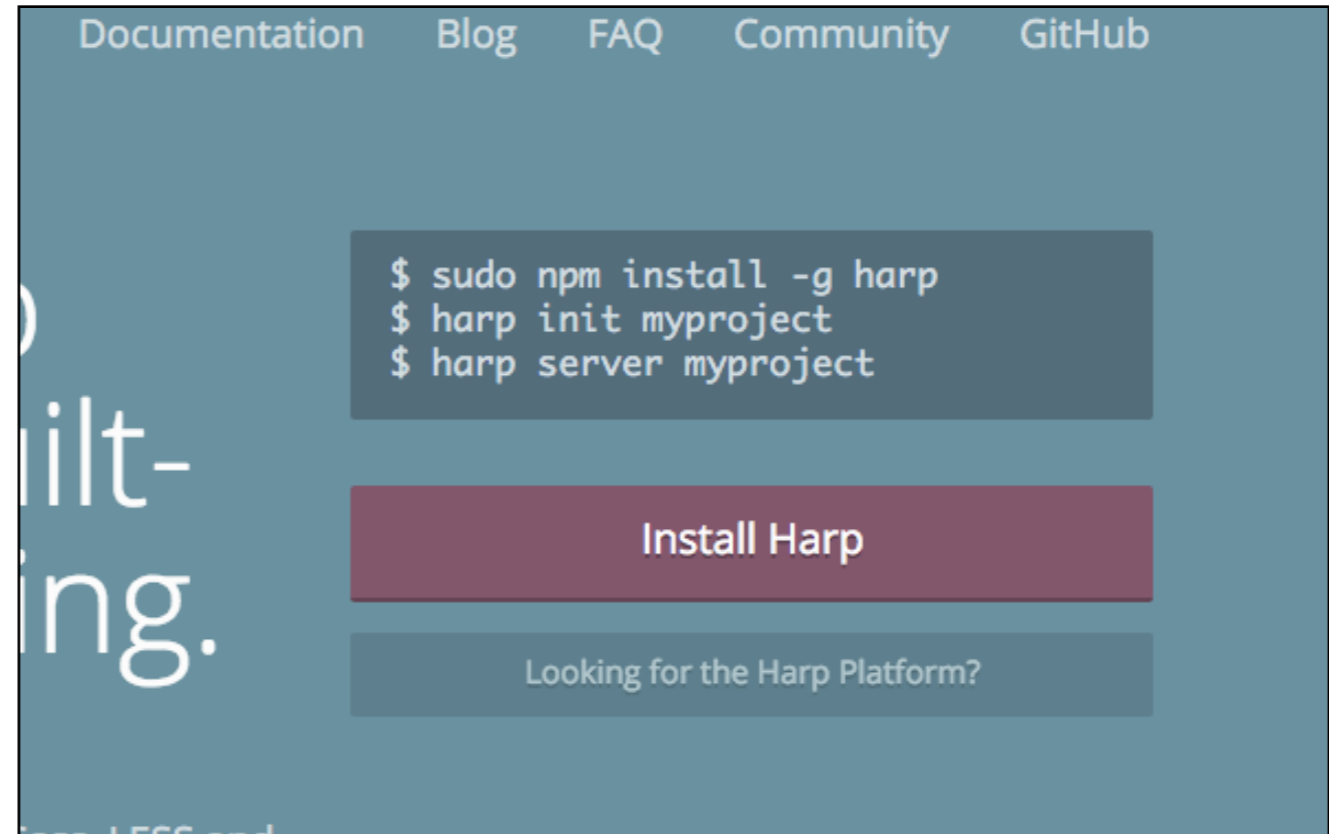
Star Harp on GitHub

Installing Harp

- On your own machines:
 - First install Node.js
 - Then Install Harp



The screenshot shows the Node.js website header with the logo and navigation links: HOME, ABOUT, DOWNLOADS, DOCS, FOUNDATION, GET INVOLVED, SECURITY, NEWS. Below the header, a paragraph describes Node.js as a JavaScript runtime built on Chrome's V8 JavaScript engine, using an event-driven, non-blocking I/O model. It mentions that Node.js' package ecosystem, npm, is the largest ecosystem of open source libraries in the world. Two download buttons are visible: 'v4.2.2 LTS' (Mature and Dependable) and 'v5.0.0 Stable' (Latest Features). Below these buttons, there are links for 'Other Downloads: LTS / Stable | Changelog: LTS / Stable | API Docs: LTS / Stable'.

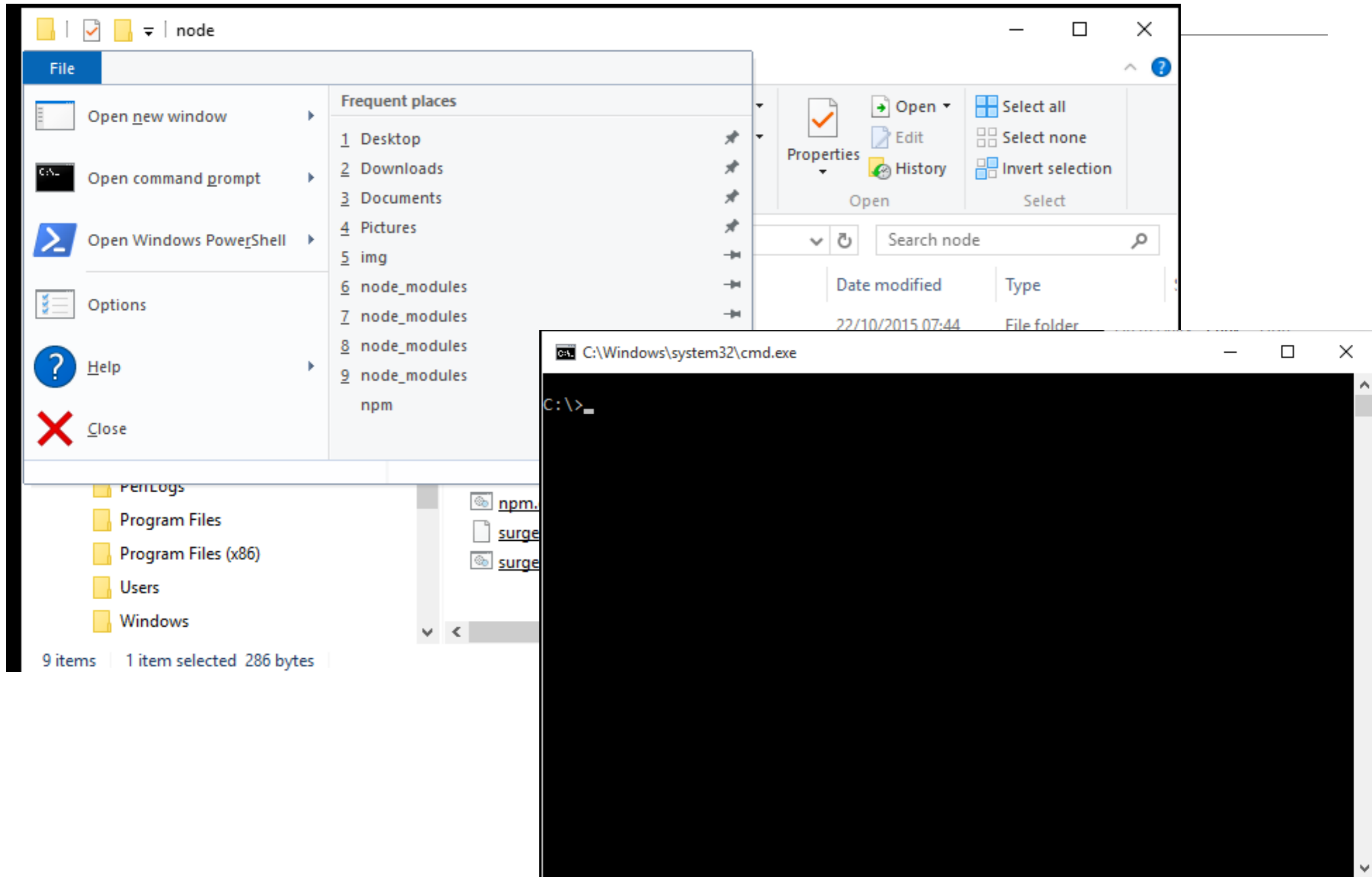


The screenshot shows the Harp documentation page with navigation links: Documentation, Blog, FAQ, Community, GitHub. The main content area displays a terminal window with the following commands:

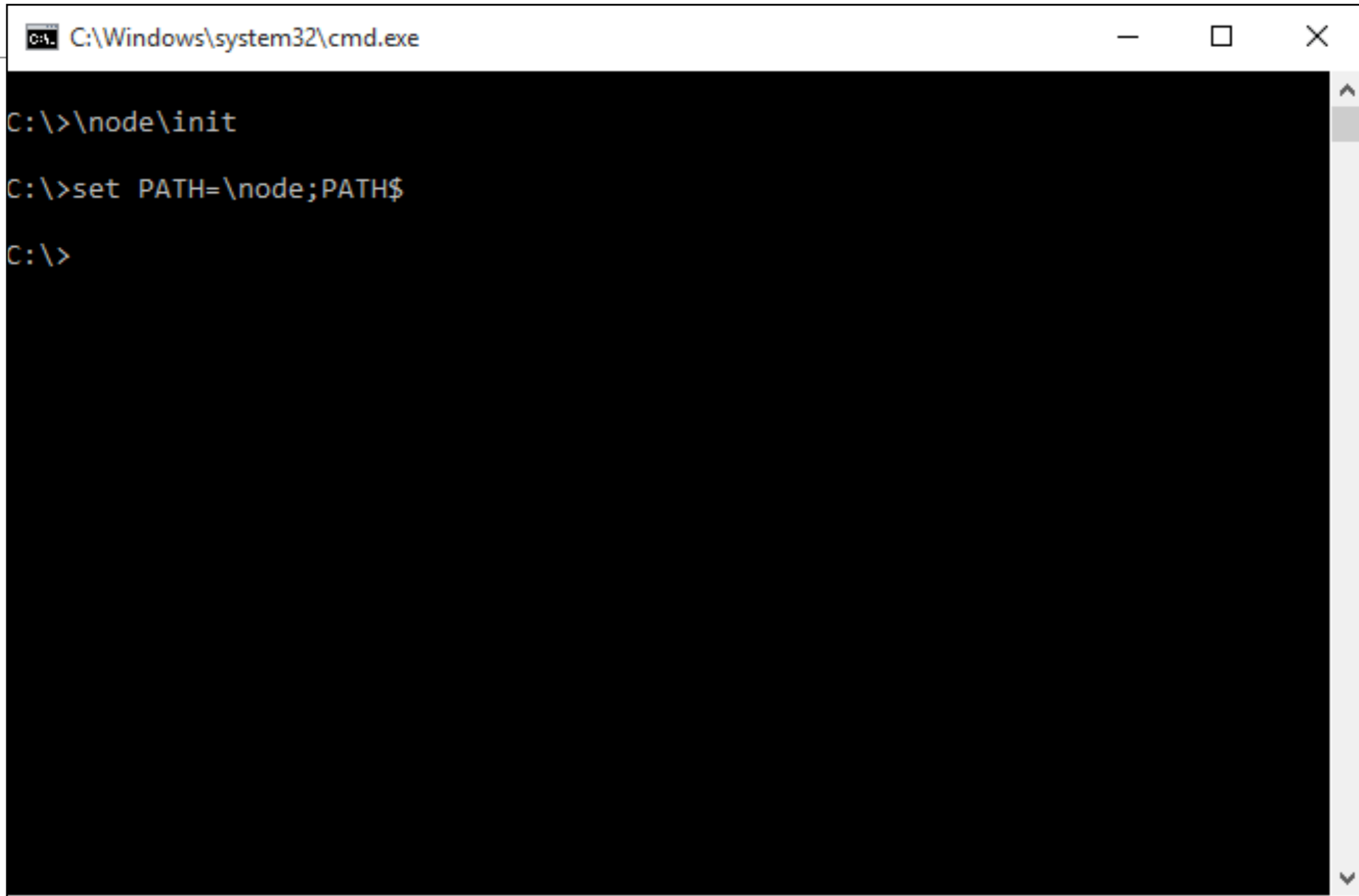
```
$ sudo npm install -g harp
$ harp init myproject
$ harp server myproject
```

Below the terminal window, there is a prominent 'Install Harp' button and a link that says 'Looking for the Harp Platform?'. The page has a dark blue background with white text.

Run a Command Prompt



Initialise Node



```
C:\Windows\system32\cmd.exe  
C:\>\node\init  
C:\>set PATH=\node;PATH$  
C:\>
```

\node\init

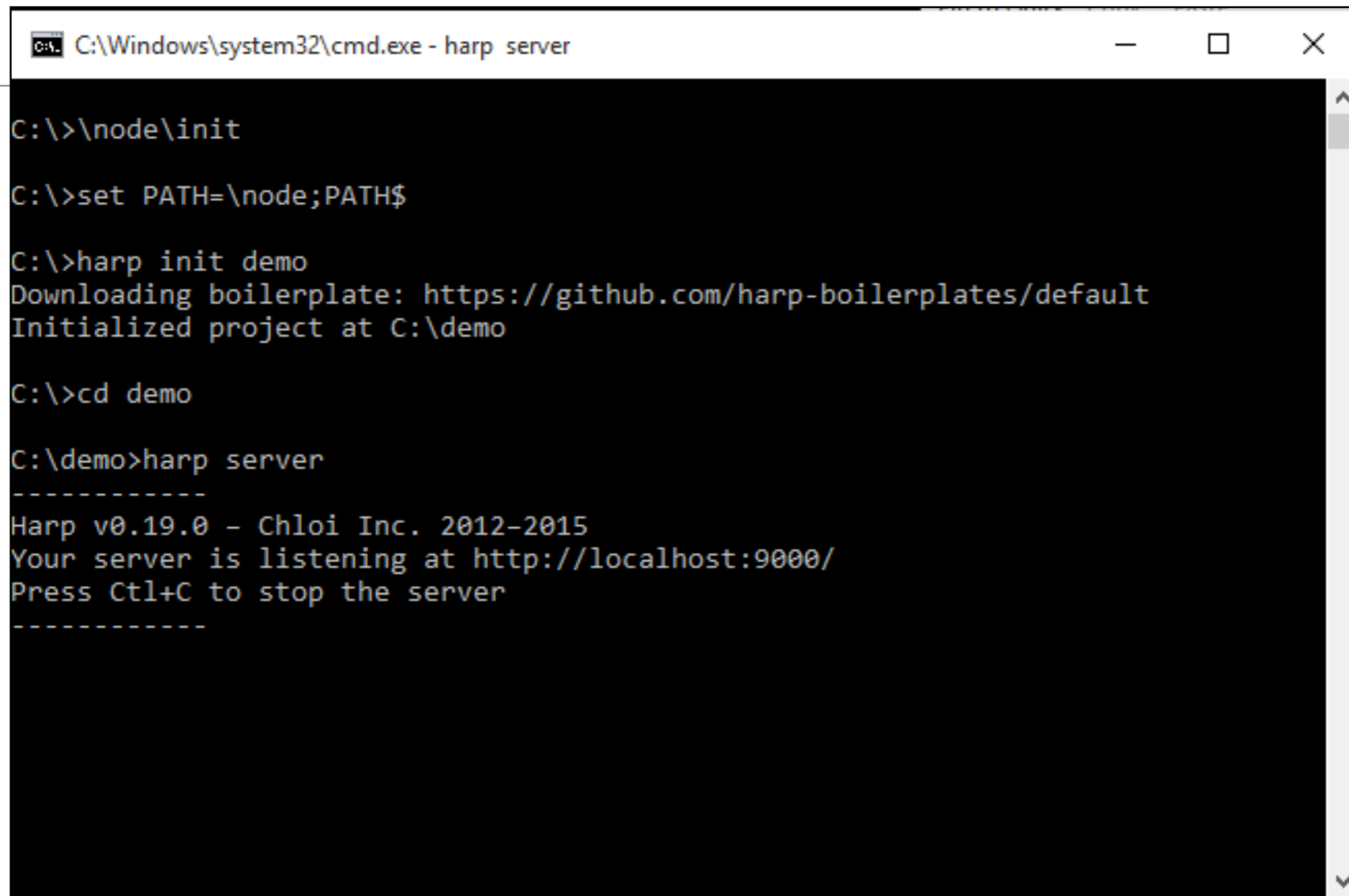
Create a test Project

A screenshot of a Windows command prompt window. The title bar shows 'C:\Windows\system32\cmd.exe'. The command prompt shows the following sequence of commands and output:

```
C:\>\node\init
C:\>set PATH=\node;PATH$
C:\>harp init demo
Downloading boilerplate: https://github.com/harp-boilerplates/default
Initialized project at C:\demo
C:\>
```

harp init demo

Launch the Web Server for this demo project



```
C:\Windows\system32\cmd.exe - harp server

C:\>\node\init

C:\>set PATH=\node;PATH$

C:\>harp init demo
Downloading boilerplate: https://github.com/harp-boilerplates/default
Initialized project at C:\demo

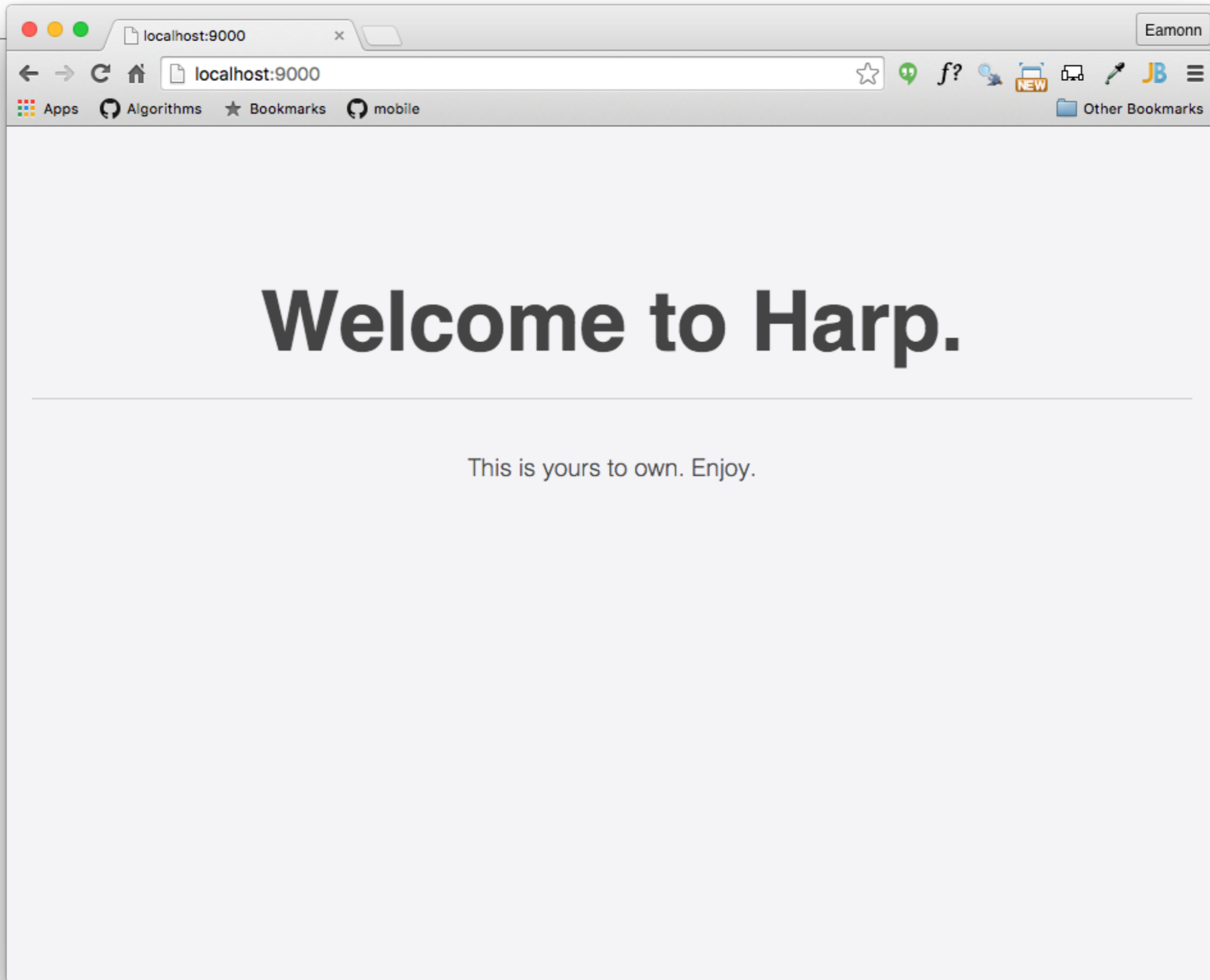
C:\>cd demo

C:\demo>harp server
-----
Harp v0.19.0 - Chloi Inc. 2012-2015
Your server is listening at http://localhost:9000/
Press Ctl+C to stop the server
-----
```

cd demo

harp server

Visit the Site



Serve the site from Lab-05b

- Lab-05b generated a web site we will use as an initial test
- Download and expand the archive

Lab-07-a



Department of Computing & Mathematics

Waterford Institute of Technology

BSc (Hons) the Internet of Things

BACHELOR OF SCIENCE (HONOURS)
APPLIED COMPUTING IN THE INTERNET OF THINGS
Program your World!

An exciting new level 3 Honours Degree for 2015. Combine Programming and Electronics and learn how to code cool devices, places and things. Be part of the next wave of innovation in Computing.

Programming
Learn a broad range of programming and problem solving skills, including exciting new platforms, software tools and languages. Use these skills to build apps for mobile, cloud and device based IoT applications. Evolve a portfolio of fascinating applications.

Data Science
At the heart of many IoT applications is data: measurements, events alarms and other information that must be relayed, stored and ultimately turned into knowledge. Learn the fundamentals of modern approaches to data in this strand.

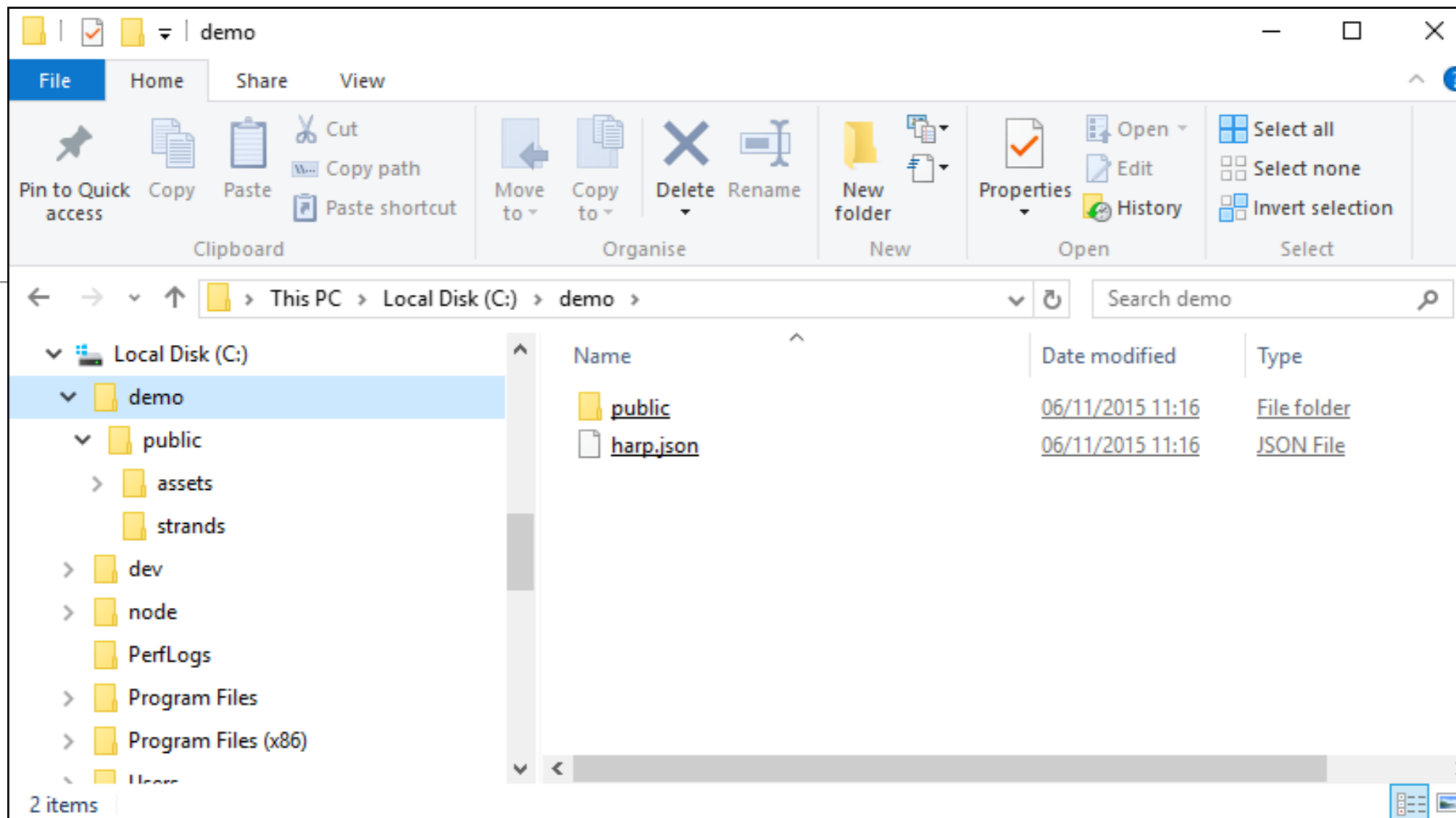
Devices
The 'Things' we connect to are often physical devices. These can range from simple temperature sensors to sophisticated control systems like traffic lights or cameras. Connecting to and interacting with the physical world is the subject of this strand.

Networks
This strand will explore modern networks and cloud technology. Be able to configure, network and manage all categories of computer systems from simple controllers to single board board computers, mobiles and full workstations.

Project
Building exciting IoT projects in every semester of the programme. Your projects will combine skills acquired from the other strands and enable you to build a comprehensive and compelling portfolio of IoT applications and services.

Mathematics
Introduce foundation concepts for many of the more applied concepts in the other Strands. Learn mathematical techniques in a modern context and apply core principles in new and interesting ways.

Explore a web site that embodies many of the techniques we have explored so far. In the lab the web is evolved from unstyled content to a reasonably elegant and clean design - using semantic html element where appropriate.



- Expand the IoT Archive into the demo folder.
- Create an additional file - harp.json

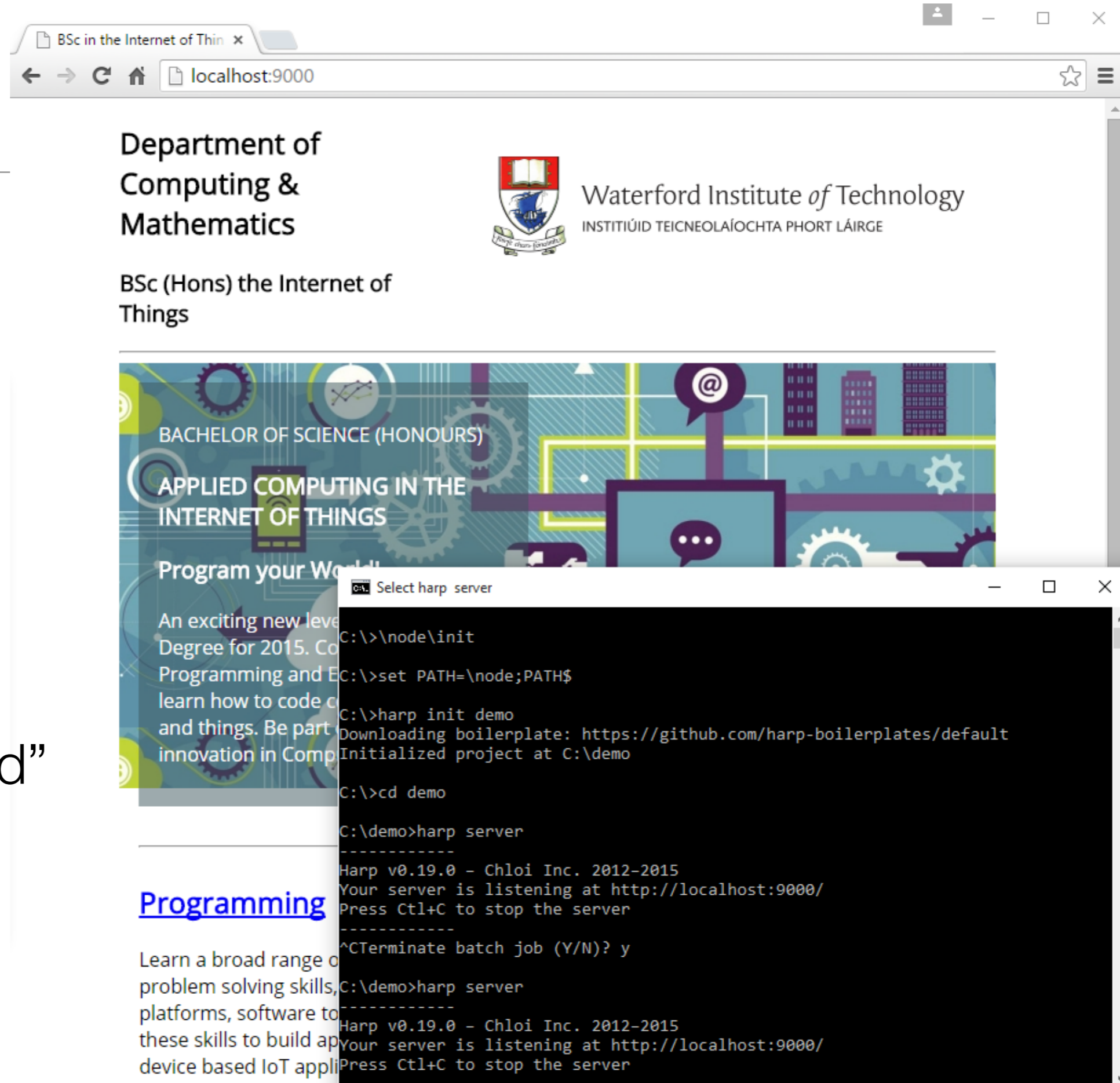
```
harp.json
{
  "globals":
  {
  }
}
```

Run the harp server again

- harp server

Browse to localhost:9000

The site is “served” here and can be browsed as expected



The image shows a web browser window displaying the website for the Department of Computing & Mathematics at Waterford Institute of Technology. The page title is "BSc (Hons) the Internet of Things". The browser address bar shows "localhost:9000". The website content includes the department name, the university logo, and a banner for the "BACHELOR OF SCIENCE (HONOURS) APPLIED COMPUTING IN THE INTERNET OF THINGS". Below the banner, there is a section titled "Program your World" and a link for "Programming".

Overlaid on the bottom right of the browser window is a terminal window titled "Select harp server". The terminal shows the following commands and output:

```
C:\>\node\init
C:\>set PATH=\node;PATH$
C:\>harp init demo
Downloading boilerplate: https://github.com/harp-boilerplates/default
Initialized project at C:\demo
C:\>cd demo
C:\demo>harp server
-----
Harp v0.19.0 - Chloi Inc. 2012-2015
Your server is listening at http://localhost:9000/
Press Ctl+C to stop the server
-----
^CTerminate batch job (Y/N)? y
C:\demo>harp server
-----
Harp v0.19.0 - Chloi Inc. 2012-2015
Your server is listening at http://localhost:9000/
Press Ctl+C to stop the server
```

Deployment - Surge.sh



surge

[Pricing](#) [Tour](#) [Help](#) [Blog](#) [@surge_sh](#)

Static web publishing *for* Front-End Developers

Zero-bullshit, single-command, bring your own source control web publishing CDN. Yes, it's free.

78,872

deployments

596.64 GB

published

10,809

projects

```
$ npm install --global surge
# In your project directory, just run...
$ surge
```

One Command!

- surge
- Will create an account on first run (remember password) and deploy all files
- Subsequently, will just update site changes.
- Also generates a Domain Name

```
C:\Windows\system32\cmd.exe
^CTerminate batch job (Y/N)? y
C:\demo>harp server
-----
Harp v0.19.0 - Chloi Inc. 2012-2015
Your server is listening at http://localhost:9000/
Press Ctl+C to stop the server
-----
^CTerminate batch job (Y/N)? y
C:\demo>surge
      email: edeleastar@gmail.com
      token: *****
      project path: C:\demo\
      size: 34 files, 2.3 MB
      domain: ceaseless-anger.surge.sh
      upload: [=====] 100%, eta: 0.0s
propagate on CDN: [===] 14% /assets/images/iot/data/data-1.
propagate on CDN: [=====] 28% /assets/images/iot/devices/devi
propagate on CDN: [=====] 47% /assets/images/iot/devices/devi
propagate on CDN: [=====] 57% /assets/images/iot/networks/net
propagate on CDN: [=====] 70% /assets/images/iot/programming/
propagate on CDN: [=====] 85% /assets/images/iot/project/proj
propagate on CDN: [=====] 100%
      plan: Free
      users: edeleastar@gmail.com
      IP address: 192.241.214.148

  Success! Project is published and running at ceaseless-anger.surge.sh
C:\demo>
```

Domain Name

- You can change part of the domain name before publishing

```
size: 34 files, 2.3 MB  
domain: ceaseless-anger.surge.sh  
upload: [=====] 100%, eta: 0.0s
```

- Must end in surge.sh (for free service)

The screenshot shows a web browser window with the address bar displaying "ceaseless-anger.surge.sh". The page content includes the following elements:

- Department of Computing & Mathematics**
- Waterford Institute of Technology** (with logo and text: INSTITIÚID TEICNEOLAÍOCHTA PHORT LAIRGE)
- BSc (Hons) the Internet of Things**
- BACHELOR OF SCIENCE (HONOURS)**
- APPLIED COMPUTING IN THE INTERNET OF THINGS**
- Program your World!**
- An exciting new level 8 Honours Degree for 2015. Combine Programming and Electronics and learn how to code cool devices, places and things. Be part of the next wave of innovation in Computing**
- Programming** (with a sub-heading "Learn a broad range of programming and problem solving skills, including exciting new platforms, software tools and languages. Use these skills to build apps for mobile, cloud and device based IoT applications. Evolve a")
- Networks** (with a sub-heading "This strand will explore modern networks and cloud technology. Be able to configure, network and manage all categories of computer systems from simple controllers to single board computers, mobiles and")

Pricing

Surge is free to use.

Upgrade your project to bolster it with server-side features.

Surge

For publishing any folder easily

Free

- Unlimited publishing
- Custom domain
- Basic SSL

Get started for free

Surge Plus

For professional front-end projects

only **\$13** /MO.

PER PROJECT

- Unlimited publishing
- Custom domain
- Custom SSL
- Force HTTP to HTTPS
- Cross-Origin Resource Sharing
- Custom redirects
- Password protection
- Stats & Insights SOON

Upgrade to Surge
Plus