INDUSTRIAL TRAINING REPORT

On

The Complete 2021 Web Development Bootcamp

Submitted by

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1812213072

Under the Guidance of

PROF. ANAJNI KUMAR

in partial fulfilment for the award of the degree

of

BACHELOR OF TECHNOLOGY

In

Information Technology

SHRI RAMSWAROOP MEMORIAL GROUP OF PROFESSIONAL COLLEGES, LUCKNOW

Affiliated to

Dr. A.P.J. Abdul Kalam Technical University, Lucknow

CERTIFICATE

udemy

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Reference Number: 0004

CERTIFICATE OF COMPLETION

The Complete 2021 Web Development Bootcamp

Instructors **Dr. Angela Yu**

Pranjal Tripathi

Date **Oct. 31, 2021**
Length **55 total hours**

ACKNOWLEDGEMENT

It is a great pleasure for me to acknowledge the assistance and contributions of a large number of individuals in designing this report.

To make a report and deal with a practical world is not so easy work if not get support by others. Therefore, I feel grateful to and wish my profound indebtedness to Er. Anjani Kumar, Assistant Professor, Department of IT, Shri Ramswaroop Memorial College of Engineering and Management, Lucknow.

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ABSTRACT

This internship report is for in partial fulfilment for the award of the degree B. Tech at Shri Ramswaroop Memorial College of Engineering and Management. This internship mainly covers **"The Complete 2021 Web Development Bootcamp"** at an online learning platform named, UDEMY Inc. In this internship main focus was on technologies like **"HTML, CSS**, **JavaScript, MongoDB, Node.Js."** These technologies tend to solve real life problems in web development domain like, Creating a website From **Front-end (UI-Part)** to Connecting it with **Back-end (Server-Part)** including the synchronisation with **database(MongoDB & MySQL)**.

Solving real life problems was another key issue and try to gain experience. This report go through all the details of every knowledge and experience gathered during this internship period.

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Chapter 1

1.1 Background

Internships are formal programs designed to provide practical experience in real world environment to students who are new to field. Internships help to build competent resume by giving students visible work experience Although colleges and universities assists students in finding the right Internship programs, it is the responsibility of the would-be interns to carefully examine internship programs, and see if those programs actually offer the training they need.

There is no standardized duration for how long an internship program lasts but typically an internship is the period of three to twelve months. During this period interns have the opportunity to explore their field of interest, find out what future they are diving and whether or not their skill sets match their path of career.

Internship program provides a distinct platform to interns to build a solid foundation to their career, understand the workplace culture, gain vital work related experience, develop relevant skills, and also presents the opportunity to find permanent employment in the host company.

Some of the major benefits of Internship program to students include:

- Students can learn about the workplace culture and gain much needed work experience.
- Student can finally experience practical implementation of things they have been learning in the classroom.
- Students can build a strong foundation that will bolster their career.
- Good performance in the internship program can secure permanent employment with the host company.
- Some internship programs are paid programs meaning students can earn money while they get necessary exposure.

1.2 Purpose of Internship

Internship program provides a new perspective to the students. It provides learning opportunities outside the boundaries of the course curriculum and classroom activities. These opportunities enhance student's capability to apply theoretical understanding into real-world scenarios, thereby enhancing the students' academic and career goals.

From the student perspective, internship assists with career development in different diverse fields such as coding, programming, networking, marketing, etc. by providing vital work experience that allows students to explore their area of interests and develop relevant skills and competencies.

From the organization perspective, internship provides a unique opportunity to train fresh talents, enhance their professional development as well as aid the professional growth of the intern mentors/supervisor. Organization can also find potential employees within the interns.

1.3 Internship Objectives

The major objectives of internships are:

- To expose students to a particular job and a profession or industry
- To provide students with opportunity to develop skills in the field of interest
- To assist students in gaining vital work related experience and building strong resume for bright career
- To help students in developing business contacts i.e., creating network contacts
- To help students potentially land permanent or contractual jobs from host company

1.4 Scope of the Internship report

This report is made only for academic purpose and to fulfill the requirement for industrial attachment. This report has covered the direct and indirect aspects of software and website development industry and their challenges.

This report gives an insight of the experience that Author achieved from workplace. A brief description of Web Developers is included so that other students can get to know about the company and may decide whether it is suitable for them or not. If internships are about gathering skills then projects are the main way of gathering them. Till writing this report Author have completed first phase and helped in developing the slicedurl.herokuapp.com website. The tasks, timeline and results of those specific projects are included for a better visualization of industry standard projects.

1.5 Problem Definition

In today's growing world, almost every single thing is directly or indirectly done by a Website, In our day-to-day life we access website using some URL, these URL's are sometime quite long to remember and for an Average person it may be painful, to overcome this kind of difficulty **URL Shorteners** are used.

URL shortening is a technique on the World Wide Web in which a Uniform Resource Locator (URL) may be made substantially shorter and still direct to the required page. This is achieved by using a redirect which links to the web page that has a long URL.

There are several reasons to use URL shortening. Often regular un-shortened links may be aesthetically unpleasing. Many web developers pass descriptive attributes in the URL to represent data hierarchies, command structures, transaction paths or session information. This can result in URLs that are hundreds of characters long and that contain complex character patterns. Such URLs are difficult to memorize, type out or distribute. As a result, long URLs must be copied and pasted for reliability. Thus, short URLs may be more convenient for websites or hard copy publications

(e.g. a printed magazine or a book), the latter often requiring that very long strings be broken into multiple lines (as is the case with some e-mail software or internet forums) or truncated.

1.6 Introduction to the Company

Udemy Inc. Founded on 2009 in California, United States. It is an American massive open online course provider aimed at professional adults and students. Udemy, Inc. develops educational software solutions. The Company offers an online course in various subjects including technology, Internet, business, creative and performing arts, health and fitness, language, and music which enables learners, instructors, and organizations to continuously create and update relevant content. It provides a Curated high-quality Courses.

Udemy India Office

5th Floor, WeWork, Two Horizon Centre,

Golf Course Rd, DLF Phase 5, Sector 43,

Gurugram, Haryana 122002.

Chapter 2

2.1 Software Configuration

This website is developed using Node.js (Express Framework). is a back end web application framework for Node.js, released as free and open-source software under the MIT License. It is designed for building web applications and APIs.

Version: ^4.17.1

Developers: TJ Holowaychuk, StrongLoop and others.

License: MIT License

Operating system: Windows 10

Database: MongoDB

2.2 Software tools used

The whole Project is divided in two parts the front end and the back end.

2.2.1 FRONT-END

The front end is designed using of JavaScript (Angular5), CSS, HTML etc.

HTML5

HTML or Hyper Text Mark-up Language is the main mark-up language for creating web pages and other information that can be displayed in a web26 browser. HTML is written in the form of HTML elements consisting of tags enclosed in angle brackets (like), within the web page content. The purpose of a web browser is to read HTML [5] documents and compose them into visible or audible web pages. It provides a means to create structured documents by denoting

structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

CSS3

Cascading Style Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a mark-up language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation.CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content (such as by allowing for table less web design).

JavaScript

JavaScript (JS) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being used in server-side programming, game development and the creation of desktop and mobile applications. JavaScript is a prototype-based scripting language with dynamic typing and has first- class functions. Its syntax was influenced by C. JavaScript copies many names and naming conventions from Java, but the two languages are otherwise unrelated and have very different semantics.

Bootstrap

Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.

2.2.2 BACK END

The Back-end is designed using Node.js and MongoDB.

Node.js

Node.js is an **open-source, cross-platform**, back-end JavaScript runtime environment that runs on the **V8 engine** and executes JavaScript code outside a web browser. It is used for **server-side programming**, and primarily deployed for non-blocking, event-driven servers, such as traditional web sites and back-end API services, but was originally designed with real-time, push-based architectures in mind. Every browser has its own version of a JS engine, and node.

MongoDB

MongoDB is a source-available cross-platform document-oriented database program. MongoDB is developed by MongoDB Inc. and licensed under the Server Side Public License. MongoDB is **a document-oriented database which stores data in JSON-like documents with dynamic schema**. It means you can store your records without worrying about the data structure such as the number of fields or types of fields to store values.

2.3 Hardware tool used

Processor: Intel core i5 8th generation

HDD: 1 TB

SSD: 128 GB

RAM: 4 GB

2.4 Data requirement

The inputs consist of the query to the database and the output consists of the solutions for the query. In this project the input will be the query as fired by the user is Long URL. Now the output will be visible as Short URL. Previously generated Short URLs can also be accessed when user requests the server to show database.

Chapter 3

3.1 Overview

https://slicedurl.herokuapp.com generates a short URL corresponding long URL. URL shortening is a technique on the World Wide Web in which a Uniform Resource Locator (URL) may be made substantially shorter and still direct to the required page. This is achieved by using a redirect which links to the web page that has a long URL. For example, the URL "https://www.udemy.com/course/the-complete-web-development-bootcamp/learn/lecture/12385812#overview/" can be shortened to "https://slicedurl.herokuapp.com/46acdp".

Other uses of URL shortening are to "beautify" a link, track clicks, or disguise the underlying address. Although disguising of the underlying address may be desired for legitimate business or personal reasons, it is open to abuse. Some URL shortening service providers have found themselves on spam blocklists, because of the use of their redirect services by sites trying to bypass those very same blocklists. Some websites prevent short, redirected URLs from being posted.

In URL shortening, every long URL is associated with a unique key, which is the part after its top-level domain name. For example, https://tinyurl.com/m3q2xt has a key of m3q2xt. Not all redirection is treated equally; the redirection instruction sent to a browser can contain in its header the HTTP status 301 (Moved Permanently), 302 (Found), 307 (Temporary Redirect) or 308 (Permanent Redirect).

The overall system design objective is to provide an efficient, modular design that will reduce the system's complexity, facilitate change and result in an easy implementation. This will be accomplished by designing a strongly cohesion system with minimal coupling. In additional, this document will provide interface design models that are consistent, user friendly, and will provide straightforward transitions through the various system functions

The purpose of design phase is to plan a solution for problem specified by the requirements. System design aims is to identify the modules that should be in the system the specification of these modules and how they interact with each other to produce the desired result. The goal of the design process is to produce a module or representation of a system which can be used later to build that system. The produced model is called design of the system. The most important phase of the software of the system is designing the different modules. The accurate planning and proper interconnections with the modules will give a good output in the implementation part.

3.2 System Architecture

System architecture is overall representation of the data structures and processes which are involved in in the application. System architecture is a pictorial representation of the application that organizes elements of data and standardizes how they relate to one another and to properties of the real world entities. Figure below show the system architecture of the application.

The phase of the design of computer architecture and software architecture can also be referred to as high-level design. The baseline in selecting the architecture is that it should realize all which typically consists of the list of modules, brief functionality of each module, their interface relationships, dependencies, database tables, architecture diagrams, technology details etc. The integration testing design is carried out in the particular phase. After the requirements have been determined the necessary specifications for the hardware, software and people and data resources and the information products that will satisfy the functional requirement of the proposed system can be determined. The design will serve as a blueprint for the system before these errors or problems are built into the system.

3.3 Activity Diagram

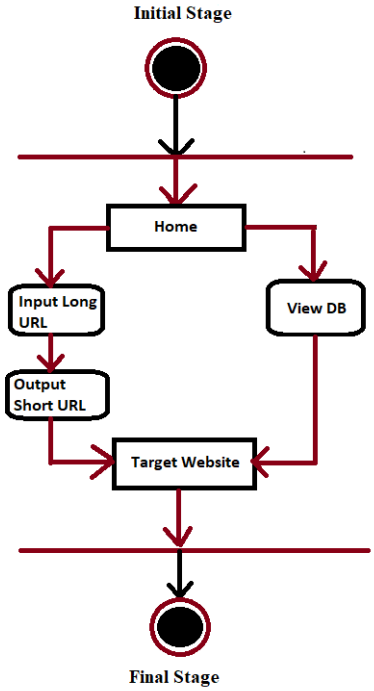


Figure 1.1

An activity diagram portrays the control flow from a start point to a finish point showing the various decision paths that exist while the activity is being executed. We can depict both sequential processing and concurrent processing of activities using an activity diagram. They are used in business and process modelling where their primary use is to depict the dynamic aspects of a system [2].

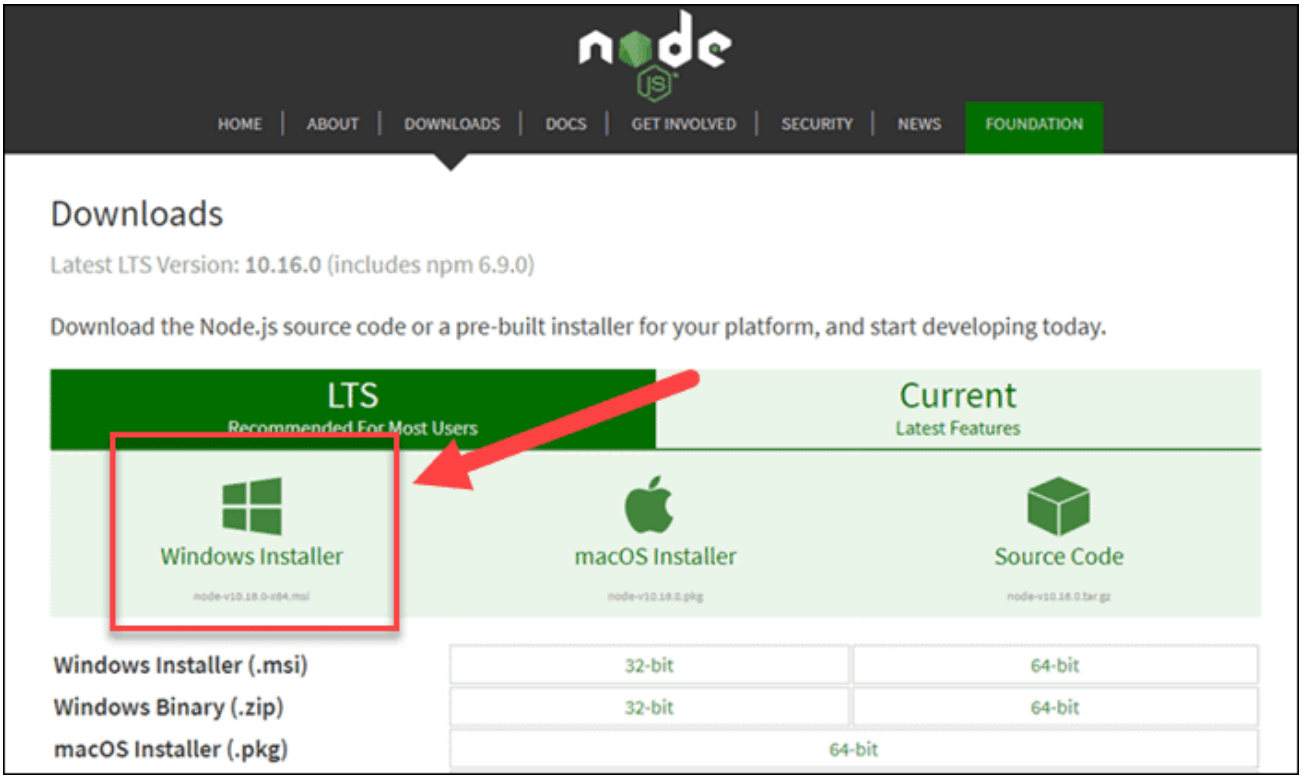
Chapter 4

4.1 Software Installation

4.1.1 Node.js

Step 1: Download Node.js Installer

In a web browser, navigate to https://nodejs.org/en/download/. Click the **Windows Installer** button to download the latest default version. At the time this article was written, version 10.16.0-x64 was the latest version. The Node.js installer includes the NPM package manager. [3]



Step 2: Install Node.js and NPM from Browser

1. Once the installer finishes downloading, launch it. Open the **downloads** link in your browser and click the file. Or, browse to the location where you have saved the file and double-click it to launch.

2. The system will ask if you want to run the software – click **Run**.

3. You will be welcomed to the Node.js Setup Wizard – click **Next**.

4. On the next screen, review the license agreement. Click **Next** if you agree to the terms and install the software.

5. The installer will prompt you for the installation location. Leave the default location, unless you have a specific need to install it somewhere else – then click **Next**.

6. The wizard will let you select components to include or remove from the installation. Again, unless you have a specific need, accept the defaults by clicking **Next**.

7. Finally, click the **Install** button to run the installer. When it finishes, click **Finish**.

Step 3: Verify Installation

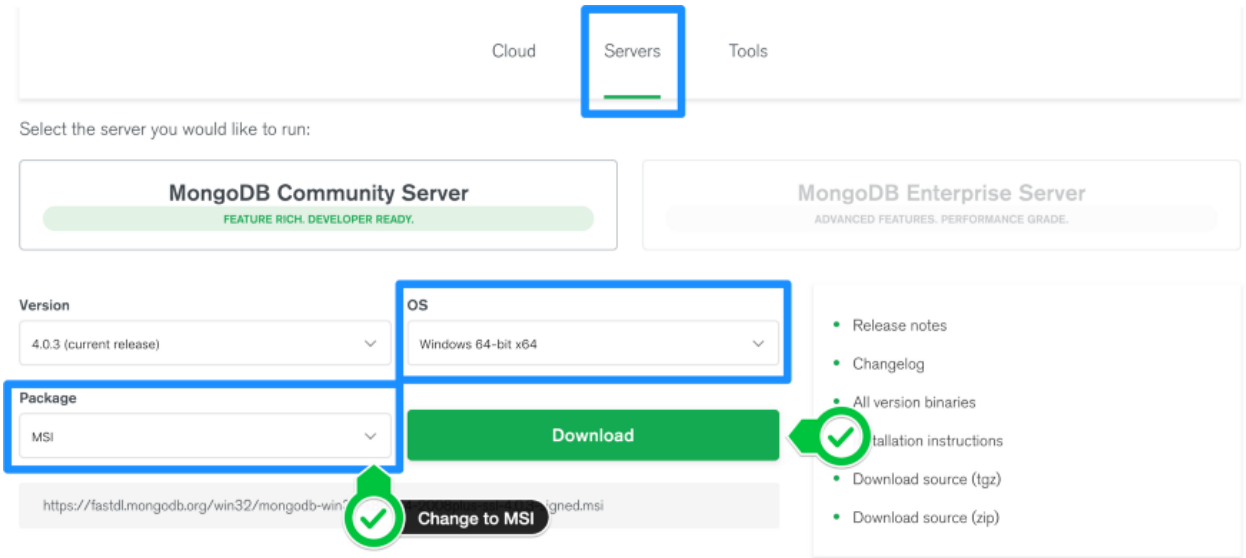
Open a command prompt (or PowerShell), and enter the following:

```
node -v
```

4.1.2 MongoDB

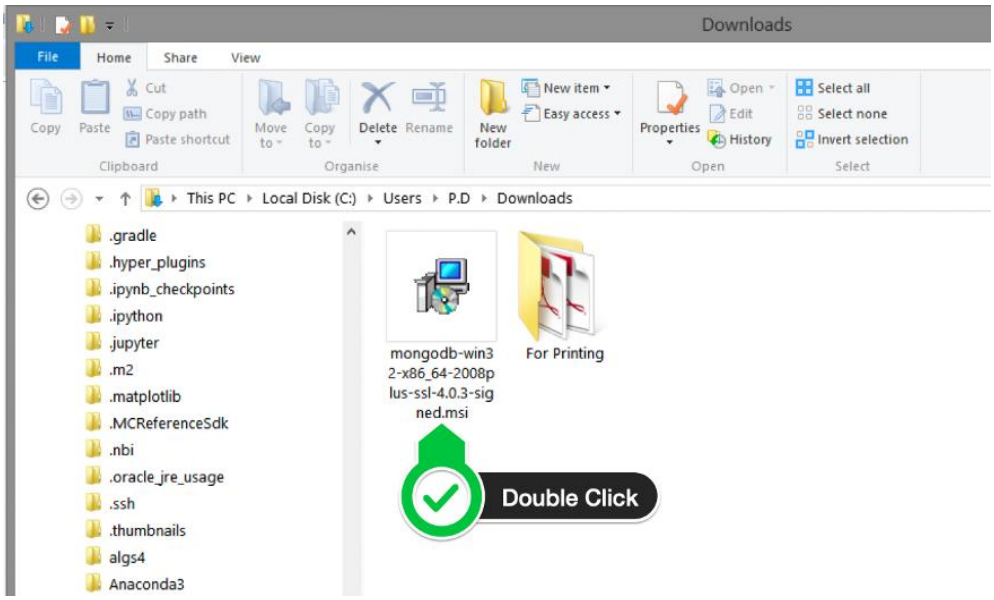
Step 1 — Download the MongoDB MSI Installer Package

Head over to https://www.mongodb.com/try/download/community and download the current version of MongoDB. Make sure you select MSI as the package you want to download.

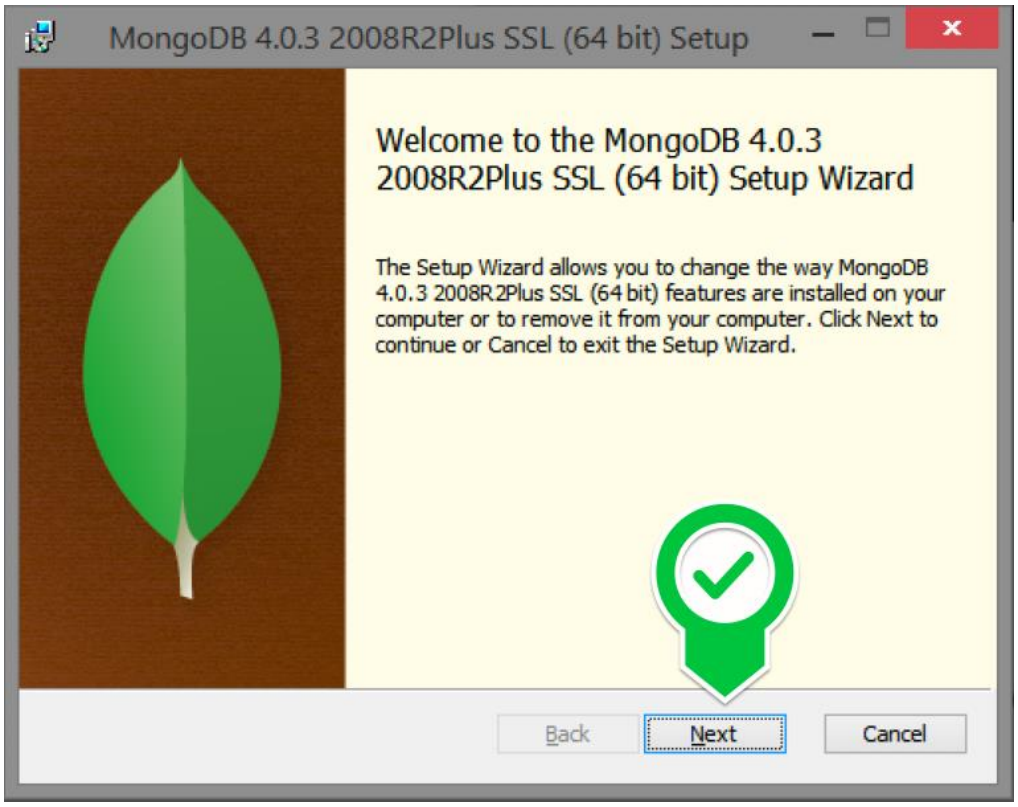


Step 2 — Install MongoDB with the Installation Wizard

A. Make sure you are logged in as a user with Admin privileges. Then navigate to your downloads folder and double click on the .msi package you just downloaded. This will launch the installation wizard.

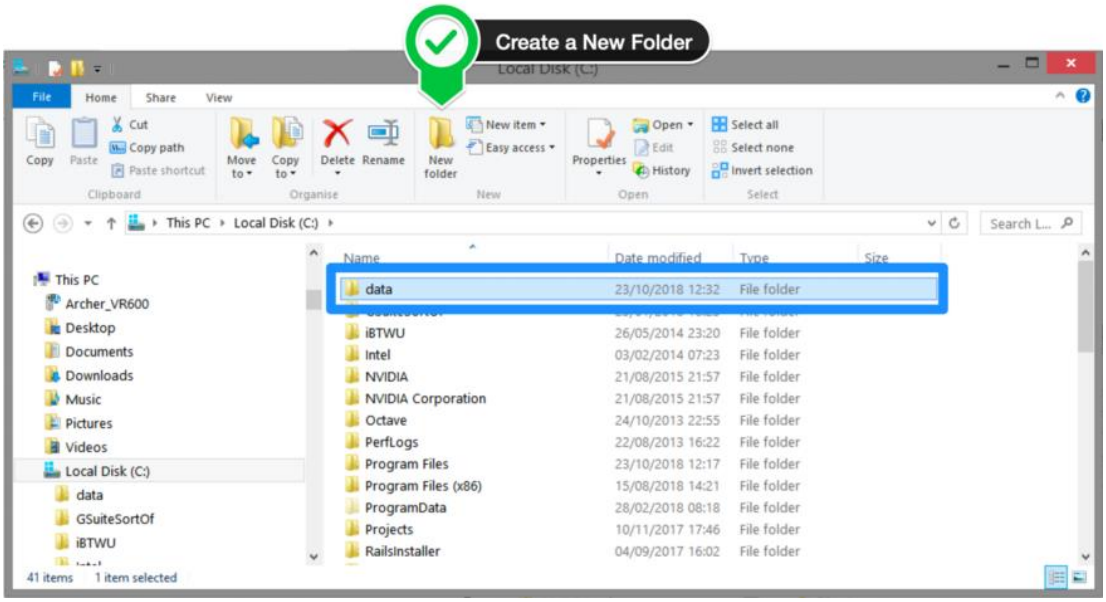


B. Click Next to start installation.

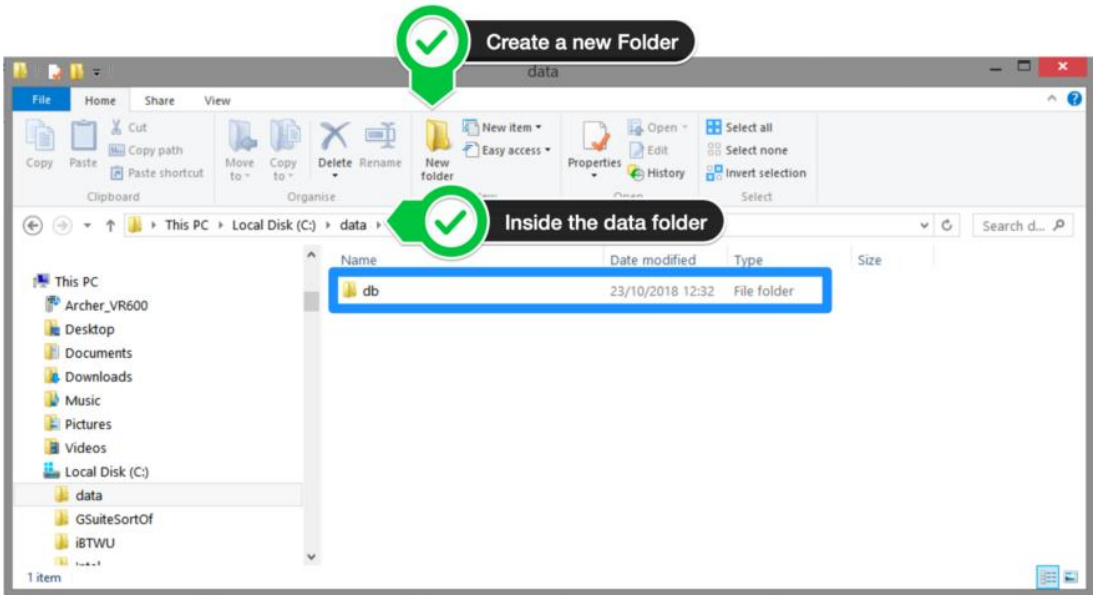


Step 3— Create the Data Folders to Store our Databases

A. Navigate to the **C Drive** on your computer using Explorer and create a new folder called **data** here.



B. Inside the **data** folder you just created, create another folder called **db.**



Step 4 — Setup Alias Shortcuts for Mongo and Mongod

Once installation is complete, we'll need to set up MongoDB on the local system.

A. Open up your Hyper terminal running Git Bash.

B. Change directory to your home directory with the following command:

```
cd ~
```

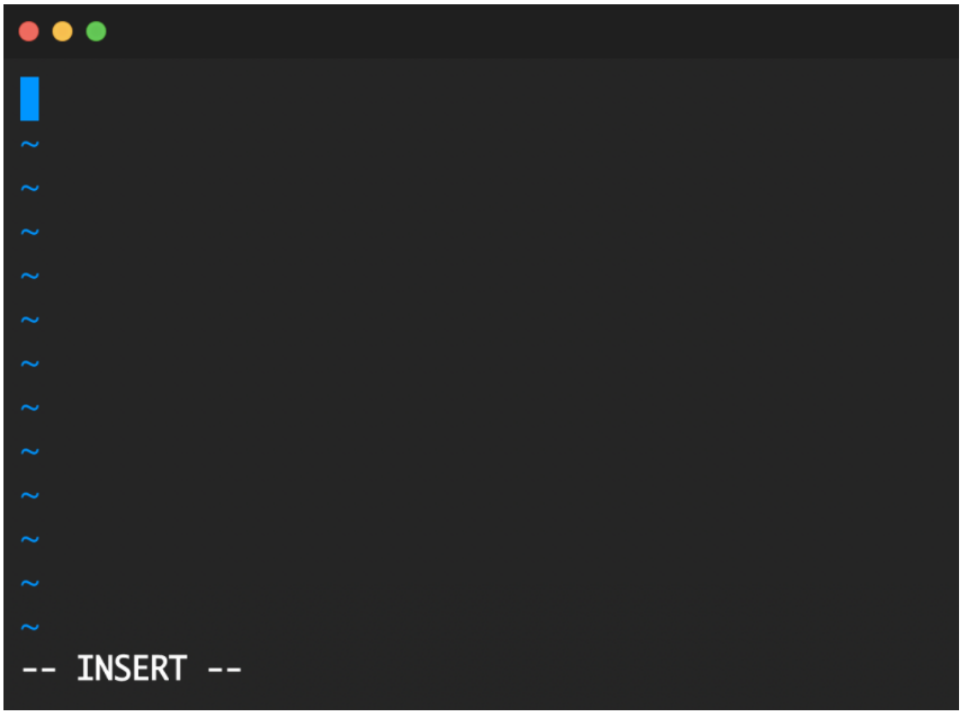
C. Here, we're going to create a file called .bash_profile using the following command:

```
touch .bash_profile
```

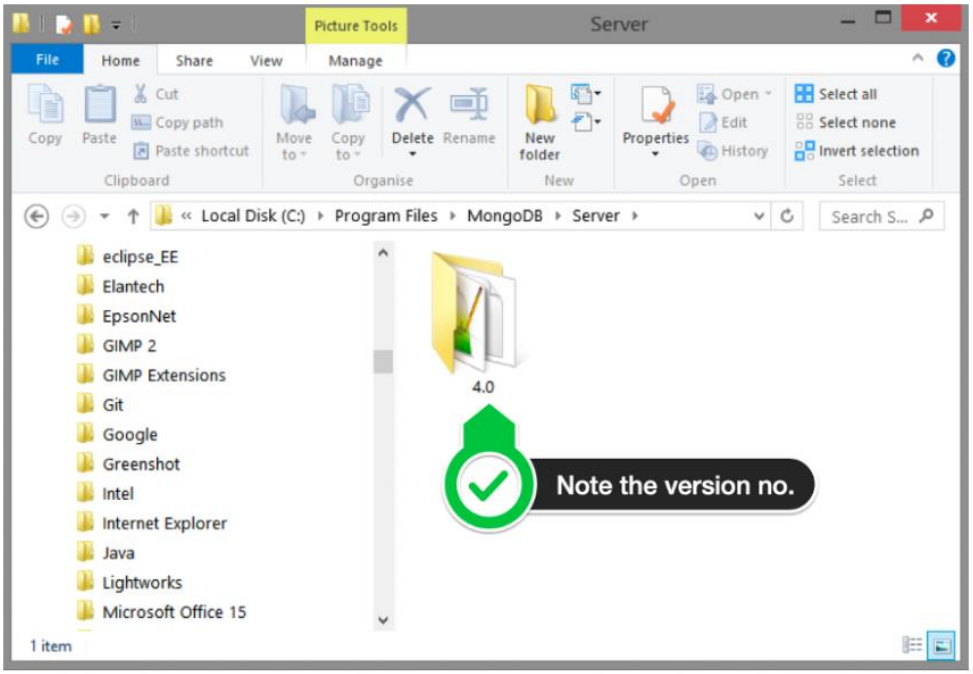
D. Open the newly created .bash_profile with vim using the following command:

```
vim .bash_profile
```

E. In vim, hit the **I** key on the keyboard to enter insert mode.



F. In your explorer go to C → Program Files → MongoDB → Serve



Now you should see the version of your MongoDB.

G. Paste in the following code into vim, make sure your replace the 4.0 with your version that you see in explorer.

```
alias mongod="/c/Program\ files/MongoDB/Server/4.0/bin/mongod.exe"
alias mongo="/c/Program\ Files/MongoDB/Server/4.0/bin/mongo.exe"
```

H. Hit the Escape key on your keyboard to exit the insert mode. Then type to save and exit Vim.

```
:wq!
```

Step 5 — Verify That Setup was Successful

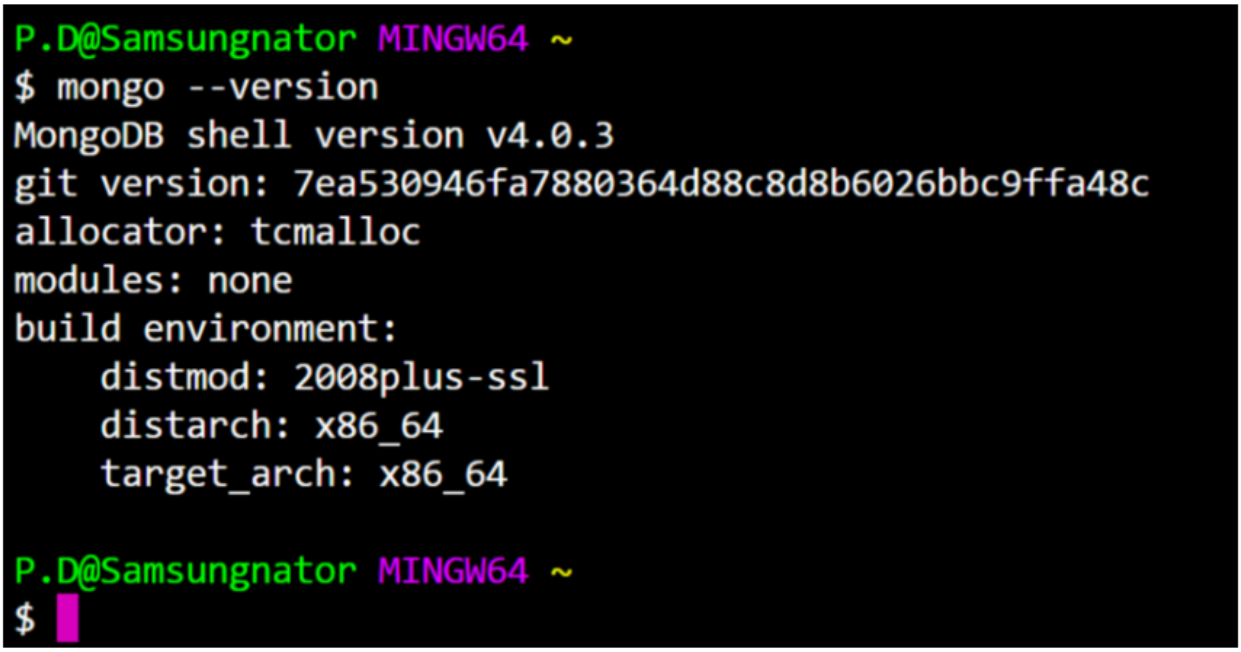
A. Close down the current Hyper terminal and quit the application.

B. Re-launch Hyper.

C. Type the following commands into the Hyper terminal:

```
mongo --version
```

Once you've hit enter, you should see something like this:



This means that you have successfully installed and setup MongoDB on your local system!

If you see something that looks like bash mongo command not found, then make sure you check back at all the steps above and follow it step-by-step making sure there are no typos and you haven't missed any of the steps.

4.2 Deployment over Heroku Server

Create a Procfile:

Heroku will need a Procfile to know how to run your app.

A Procfile is a "process file" which tells Heroku which command to run in order to manage a given process. In this case, the command will tell Heroku how to start your server listening on the web.

Use the command below to create the file.

```
$ echo "web: node app.js" > Procfile
```

Add and commit files to Git:

Remember you initiated a Git repository when setting up. Perhaps you have been adding and committing files as you have gone.

Before you deploy to Heroku, make sure to add all the relevant files and commit them.

```
$ git add .
$ git commit -m "ready to deploy"
```

The final step is to push to your Heroku master branch.

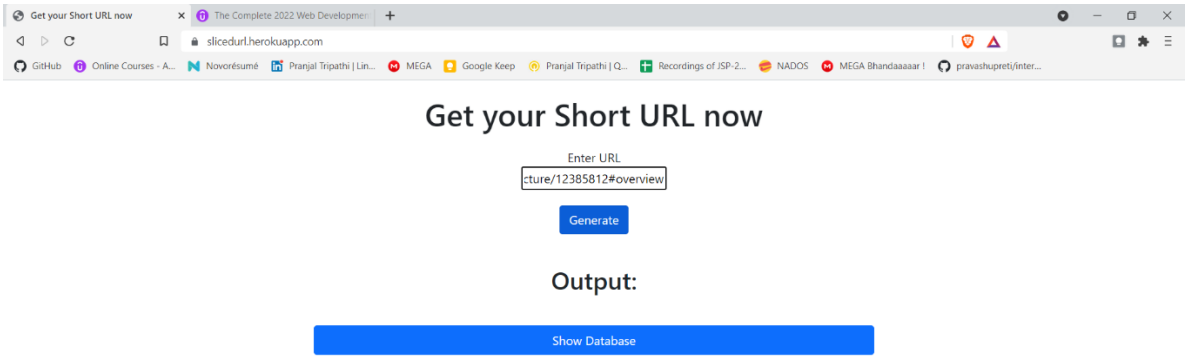
```
$ git push heroku master
```

You should see the command line print out a load of information as Heroku builds and deploys your app.

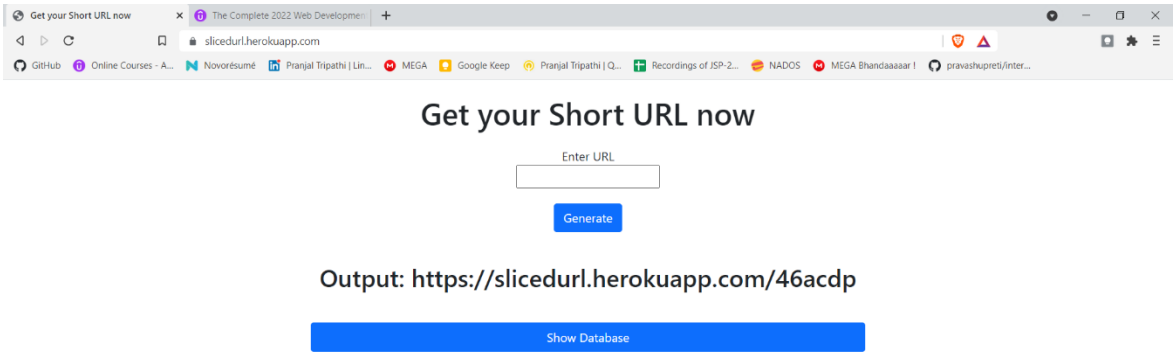
Now you can open the browser and visit your-project-name.herokuapp.com. Your app will be hosted on the web for all to visit!

4.3 Full view of Project

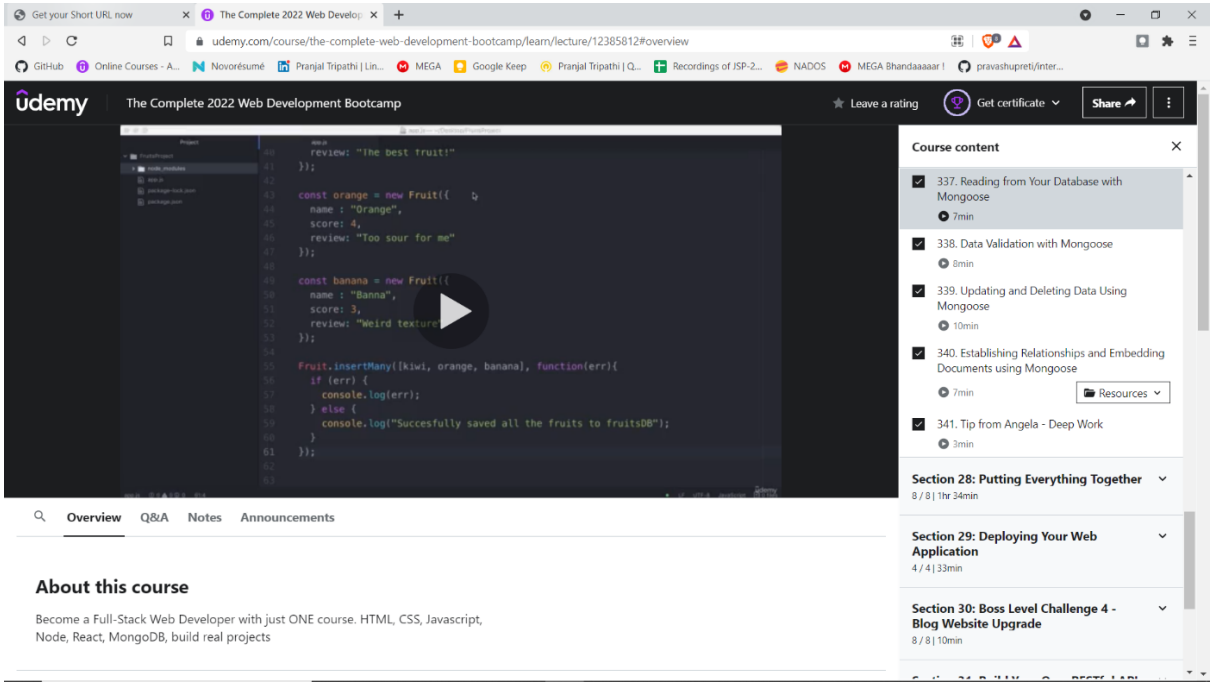
Input:



Output:



Redirected Page:



4.4 Conclusion

Sliced URL (https://slicedurl.herokuapp.com/) is being developed to have easy short names for long URLs to easily excess websites one needs with customization and personalized features.

The industrial training that I had gone through for six weeks with **Udemy** was very interesting, instructive and somehow challenging for someone that has zero – working experience. It gave me lot of benefits and positive changes that enable me to enter the working environment. Through this training I have learnt a new industry level technology in depth.

All of the valuable experience knowledge that I have gained were not only acquired through the direct involvement in task given but also through other aspect of the training such as tackling real time development problems and how to solve them.

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