CODERCOMMUNE

A CSC468-01 Project by: *Adib Ahasan, Benjamin Brunke, Grayson Deiley, Andrew Lodise, William Small*
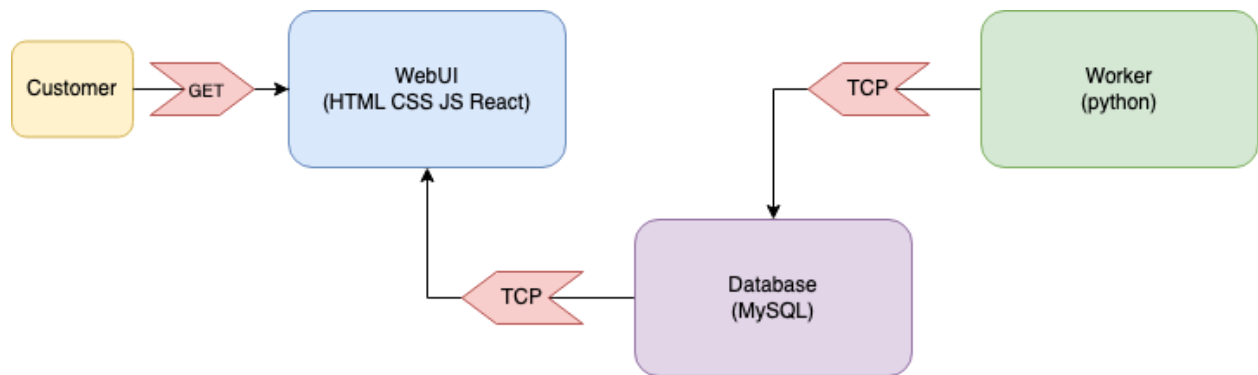
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Team Information & Summary

Team Name: CODER COMMUNE
Team Members: Adib Ahasan, Benjamin Brunke, Grayson Deiley, Andrew Lodise, William Small

GitHub URL: https://github.com/Andrew-Lodise/CSC468S1G2

Chapter 1

Chapter 2

Our team has proposed to build a social media networking site for developers and designers akin to Twitter/Facebook but with features to enhance and support developers and designers that deal with both back-end and front-end development.

Some of the features we'll have are color and text formatting code when you post it on social media after we comprehend the language of code being shared; this makes it easier for developers and designers to share and read code.

Furthermore, the ability to run someone's posted code on the browser thru one button (similar to CodePen). Being able to send direct messages to another user, change their email/password, and 2FA.

For this project, we'll utilize applications and technologies such as nodeJS, MySQL, MongoDB, Redis, and React.

Web UI
The web ui will be used to allow users to engage with our website. It will be created using html, css, nodejs, and React. It will be used for the following webpages:
- Create and edit a profile for users
- Find other Users profiles and add them as friends
- The general email system (Gmail API) to be used by nodejs
- Make posts
- View your news feed

Database
The database portion of our project will manage all of the data necessary to allow our social media app to function properly. We will start by using MySQL to manage the following pieces of data with the option to integrate other databases if we feel the need to:
- Username/ Password (encrypted)
- Github url
- User ID
- User Bio
- Email accounts owned by users
- Preferred coding languages
- Friends
- Posts (content + date/time created)
- Post comments

Worker
For the backend portion of our project, mainly python will be used to complete the section of our website that the customer will be unable to see from their perspective. It will also add

information into the database through the TCP. It will also check for any sort of errors or bugs that may be in the site through a debugging tool such as Visual Studio and Sentry.

Chapter 3

To set up our images, we first choose a Node.js image from Docker Hub, which is a registry of Docker images. This involves selecting an image based on the version of either nodejs, mysql, ot react and the operating system desired. Once the image has been selected, a Dockerfile must be created that contains instructions for building a Docker image. This involves setting the base image to an image that we are interested in, then adding any additional dependencies or configuration that the application requires, and exposing the appropriate ports. After the Dockerfile has been created, the Docker image can be built using the docker build command. Finally, the Docker container can be run using the docker run command, which maps the appropriate ports and runs the container based on the Docker image that was created. Overall, setting up images involves selecting the appropriate image, creating a Dockerfile, building a Docker image, and running a Docker container.

Example: for nodejs we use the docker pull node command to pull the latest version of nodejs from docker hub with other added dependencies. We then use this to build our image with docker build and then docker run to build a container with our new image. Deploying node.js onto kubernetes has been offering annoyances but, believe it had something to do with our docker file.

So far we have our mysql running on the local environment and are not really collecting any data currently as we only have an admin user for our login page configured. Eventually we will need to collect data for each account as we progress.

Basic Docker file for node js

```
20 lines (14 sloc) │ 426 Bytes

 1    # Use the official Node.js 14 image as the base image
 2    FROM node:14
 3
 4    # Set the working directory to /app
 5    WORKDIR /app
 6
 7    # Copy the package.json and package-lock.json files to the container
 8    COPY package*.json ./
 9
10    # Install dependencies
11    RUN npm install
12
13    # Copy the rest of the application code to the container
14    COPY . .
15
16    # Set the port that the container will listen on
17    EXPOSE 3000
18
19    # Start the application
20    CMD [ "npm", "start" ]
```

To build the MySql docker images the following steps were taken
1. Created a dockerfile

2. We build it into an image and pushed it to dockerhub
   ○ docker build -t al964440/codercommune:0.0.3 .
   ○ docker push al964440/codercommune:0.0.3
3. Next we run it inside a container
   ○ docker run –name CoderC -p 3306:3306 -d al964440/codercommune:0.0.3
4. We connect with mysql workbench using the provided port
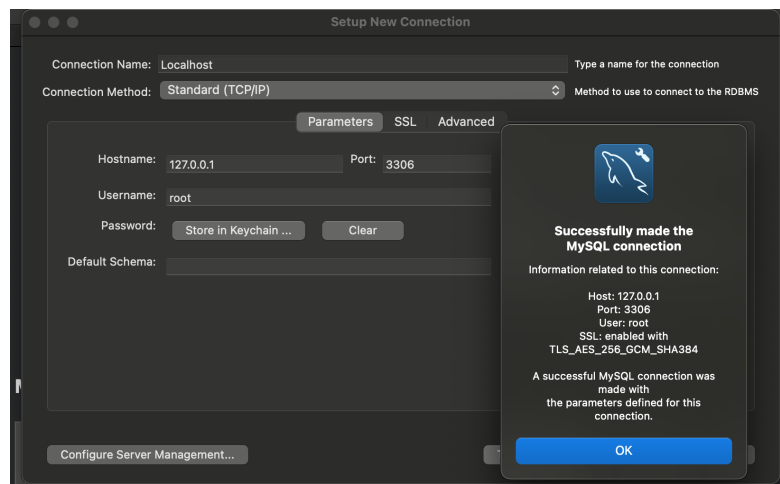
5. From there we could edit our database and add the necessary tables that follow our schema found here
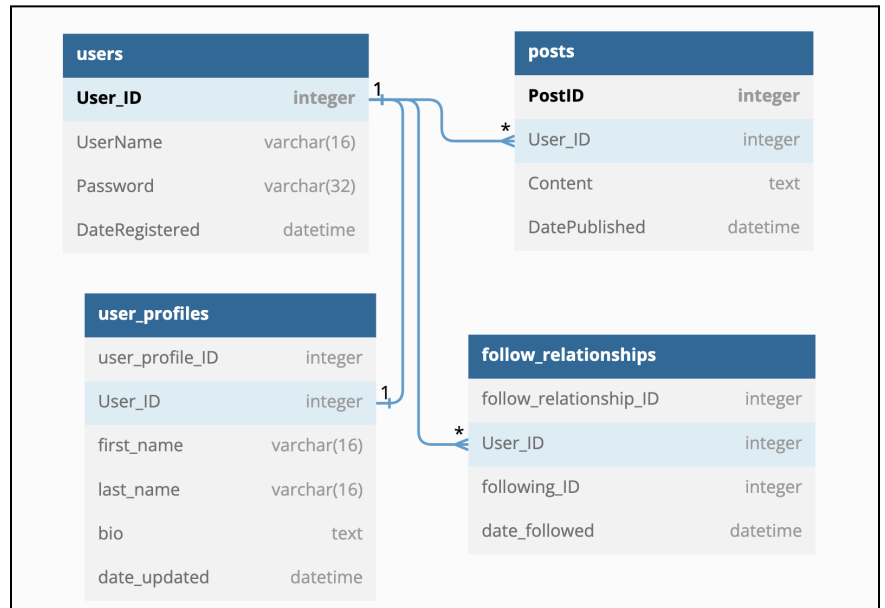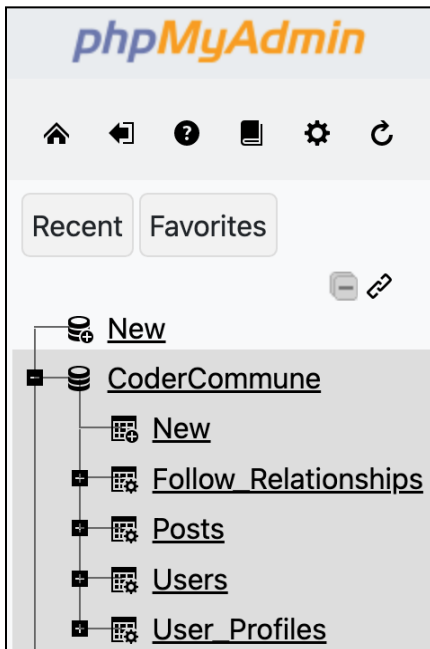
Chapter 4

To connect the containers we had to made images for both the sql and the node components

```
[al964440@head:~/CSC468S1G2/Nodejs$ docker images
REPOSITORY              TAG       IMAGE ID        CREATED         SIZE
al964440/codercommune   N1.0      f384e92e7adc    5 seconds ago   912MB
al964440/codercommune   0.0.3     b8e8f2e0e4ff    4 hours ago     564MB
```

Next we created network with the "docker network create" command and ran both of the containers in this newly created network

```
[al964440@head:~/CSC468S1G2/Nodejs$ docker network create CCnet
898fc1e7618b5c76d9a845f639faa3c4d1a9fa8136de0aa843e05746ce119262
[al964440@head:~/CSC468S1G2/Nodejs$ docker run -itd --network CCnet --name sqlcont al964440/codercommune:0.0.3
ccedd374ed2a8d61d7b34ce2cd9be4b19519d853587c1b9e17c0906257cc400d
[al964440@head:~/CSC468S1G2/Nodejs$ docker run -itd --network CCnet --name nodecont al964440/codercommune:N1.0
6c2441e278140f6fb998bdf51cc7d38f50619b3a03338fc4e942d5b422de711c
[doal964440@head:~/CSC468S1G2/Nodejs$ docker  ps
CONTAINER ID   IMAGE                        COMMAND              CREATED          STATUS         PORTS                  NAMES
6c2441e27814   al964440/codercommune:N1.0   "docker-entrypoint.s…"   4 seconds ago    Up 1 second    3000/tcp               nodecont
ccedd374ed2a   al964440/codercommune:0.0.3  "docker-entrypoint.s…"   24 seconds ago   Up 22 seconds  3306/tcp, 33060/tcp    sqlcont
al964440@head:~/CSC468S1G2/Nodejs$
```

Lastly in order to show these containers are connected we made an alpine container to run with them so we can ping them

```
al964440@head:~/CSC468S1G2/Nodejs$ docker ps -a
CONTAINER ID   IMAGE                        COMMAND              CREATED          STATUS                  PORTS                  NAMES
93d3aa96dd94   alpine                       "/bin/sh"            31 seconds ago   Up 28 seconds                                  alpcont
6c2441e27814   al964440/codercommune:N1.0   "docker-entrypoint.s…"   2 minutes ago    Exited (254) 2 minutes ago                 nodecont
ccedd374ed2a   al964440/codercommune:0.0.3  "docker-entrypoint.s…"   2 minutes ago    Up 2 minutes            3306/tcp, 33060/tcp    sqlcont
al964440@head:~/CSC468S1G2/Nodejs$ docker exec -it alpcont sh
/ # ping sqlcont
PING sqlcont (172.18.0.2): 56 data bytes
64 bytes from 172.18.0.2: seq=0 ttl=64 time=0.278 ms
64 bytes from 172.18.0.2: seq=1 ttl=64 time=0.130 ms
64 bytes from 172.18.0.2: seq=2 ttl=64 time=0.132 ms
64 bytes from 172.18.0.2: seq=3 ttl=64 time=0.127 ms
64 bytes from 172.18.0.2: seq=4 ttl=64 time=0.140 ms
64 bytes from 172.18.0.2: seq=5 ttl=64 time=0.132 ms
64 bytes from 172.18.0.2: seq=6 ttl=64 time=0.127 ms
64 bytes from 172.18.0.2: seq=7 ttl=64 time=0.116 ms
64 bytes from 172.18.0.2: seq=8 ttl=64 time=0.140 ms
64 bytes from 172.18.0.2: seq=9 ttl=64 time=0.127 ms
^C
--- sqlcont ping statistics ---
10 packets transmitted, 10 packets received, 0% packet loss
round-trip min/avg/max = 0.116/0.144/0.278 ms
/ # ping sqlcont
PING sqlcont (172.18.0.2): 56 data bytes
64 bytes from 172.18.0.2: seq=0 ttl=64 time=0.275 ms
64 bytes from 172.18.0.2: seq=1 ttl=64 time=0.125 ms
64 bytes from 172.18.0.2: seq=2 ttl=64 time=0.128 ms
64 bytes from 172.18.0.2: seq=3 ttl=64 time=0.134 ms
64 bytes from 172.18.0.2: seq=4 ttl=64 time=0.147 ms
64 bytes from 172.18.0.2: seq=5 ttl=64 time=0.128 ms
```

With that we were able to get our containers running on the same network.

Chapter 5

We are able to get a mysql server/kubernetes deployment running on our cloudlab experiment and are able to connect that with a phpmyadmin deployment in order to work with the tables and the database. This is accessed by going to the url of our experiment with the port 44171,http://pcvm824-1.emulab.net:44171/.   We are also able to get a react app deployed on kubernetes as well, this is where our UI can be found, we have two pages, one for logging in/registering and another for the post feed, where one can post and also view others posts. These can be viewed on http://pcvm824-1.emulab.net:31110/.

We did fall short of what we specified in chapters one and two. This project proved to be very difficult due to how much we needed to learn in such a short amount of time. We ran into problems with dockerfiles that produce docker images, especially when figuring out how to copy all the files associated with a react app. After that kubernetes was difficult to work with, we specifically struggled with routing and figuring out how to open ports to the outside as well as manage the internal network of the kubernetes cluster.

Adib Ahasan

Email: adib@ahasan.net Tel: 267-367-3056 Telford / Philadelphia - PA

A diligent and highly driven individual who has been serving the technology and design fields for over a decade and running. Seeking an opportunity to shine a light on my skills and talents as a developer, I.T expert, and graphic designer who can consult and provide services and solutions on all matters of technology and design.

Able to work as a member of a team, lead a team, or even work solo to tackle and help on projects of any size and complexity. A fast learner due to an affinity for technology and design.

Work Experience

Technology Lead, UI/UX Product Designer - *GLOMADO/Sartorial Services* - ***2015 - 2023*** Directed, managed, and maintained I.T resources and digital assets. Collaborated with technology & marketing firms to develop and bolster the company's ASP.NET & WordPress platforms. Provided web development & design services for landing pages, forms, and digital media assets (photo/video).

Web Developer, Designer & Consultant (Intern) - *Lucid Switch/Whoja* - ***2012 - 2014***

Assisted with hosting events for career-focused individuals & businesses from various industries. Provided web development and graphics design for many different media types and platforms, along with CRM/CMS services & I.T services & solutions for the company's clients and affiliates.

Web Developer, Designer & Consultant (Freelance, Owner) - San Marco Media - ***2010 to Present*** Provided Web development & design, graphics design for branding and marketing, and I.T consulting for businesses and career-focused individuals. Deployed business applications for email and file management systems. Provided custom services and solutions for a better presence on the web and social media through digital media production.

Skills & Talents

Web Development: Java • JavaScript • PHP (below proficiency) • Rust (current focus and learning) • MySQL • Git • WordPress • Drupal • LAMP/LEMP • AWS • DigitalOcean • Linode

Web Design: HTML5 • CSS3 • Adobe XD • Elementor • WPBakery • Bootstrap • MailChimp • SquareSpace • Shopify •

Graphics & Digital Media (Advanced proficiency)**:** Adobe Photoshop • Illustrator • Premiere Pro • After Effects • Audition • OBS • Lightroom • Microsoft Word • Excel • PowerPoint • Access • Google Docs • Google Spreadsheets

Knowledgeable on: UI/UX (Business & E-commerce) • Photography • Videography • Sound • Computer Hardware & Software • Operating Systems • Responsive Web Design • Print & Media design • Systems Administration • Business Applications • I.T Help & Support

Education, Awards & Memberships

Bachelors in Computer Science (Spring 2023) – West Chester University, PA
AVID Advisory Committee Member – Northeast High School (Class of 171), PA
(2012 - Present) NOCTI & CSP - Training & Certification

References & Links

Wayne Taitt (Sartorial Service & GLOMADO - Employer) – glomado.com
Brian Walsh (Lucid Switch & Whoja – Employer) – lucidswitch.com
Robert J. Levant (San Marco Media – Client) – ironadvocate.com/bob-levant/
LINKEDIN: linkedin.com/in/adibahasan
BEHANCE: behance.net/adibahasa

William L. Small

7 Lockhart Drive • Garnet Valley, PA 19060

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Education

West Chester University of Pennsylvania, West Chester, PA
Major Degree: Bachelor of Science in Computer Science with a cyber security
certificate Cumulative GPA: 3.89
Dean's List every semester
Expected Graduation: May 2023
Accepted into WCU chapter of UPE, International Computer Science Honor Society

Relevant Experience

IS&T Help Desk Consultant at West Chester University June 2022-Current

• Provided hands-on troubleshooting and IT support for the University's faculty, staff, students, and alumni

• Diagnosed and resolved 30+ IT service tickets/calls per day utilizing effective communication, analytical and technical skills

• Resolved a diverse range of technical issues across multiple platforms and applications

• Documented complex IT issues and escalated to the appropriate department

• Analyzed IT service trends and developed working knowledge of common solutions to efficiently troubleshoot service calls

• Collaborated with team members to develop creative solutions to difficult problems

• Participated in Help Desk Team meetings

Service Desk Analyst Intern at Johnson Matthey May 2019

• Performed hardware recovery from old computers for recycling

• Completed imaging and naming process for new computer deployments

• Set up stands for new computer monitors for employees

• Identified and replaced obsolete printers

• Participated in departmental meetings

Technical Skills

• High level of computer proficiency

• Proficient in Java, C, Terminal, Python, and Haskell, Microsoft Teams, PowerPoint, Word, Excel, and Access

• Proficient in ServiceNow helpdesk ticket system and Cisco Jabber

Andrew Lodise

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Secane, PA 19018
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Lodise8@aol.com

EDUCATION

West Chester University — *BACHELOR OF SCIENCE IN COMPUTER SCIENCE*

JANUARY 2022 - JANUARY 2044

GPA: 3.34

Relevant Coursework: Cloud Computing, User Interfaces, Programming concepts and paradigms, Java III

Delaware County Community College — *ASSOCIATE OF SCIENCE IN COMPUTER SCIENCE*

AUGUST 2018 - DECEMBER 2020

GPA: 3.8

Relevant Coursework: Java I, Java II, Data Structures and Algorithms

EXPERIENCE

Codder Commune, *Social Media Website for Coders*, **West Chester University**

JANUARY 2023 – MAY 2023

- Contributed to a successful project outcome by collaborating with a team of students.
- Demonstrated strong leadership skills by guiding the team towards delivering exceptional results.
- Created the database portion of the project.

Customer Service Representative, MICROCENTER

JANUARY 2019 – MARCH 2020

- Gained hands-on knowledge about computer parts by working around an extremely well informed team.
- Continuously exercised verbal communication skills when greeting and checking out customers.
- Overcame intense situations with angry and upset customers.

Volunteer

Volunteer at a horse farm, The Resonant Horse, weekly for over six years, assisting with taking care of the animals and the property.

HARD SKILLS

- Python
- Pandas
- Java
- Git
- C++
- C
- HTML
- CSS
- React
- Haskell
- SQL

SOFT SKILLS

- Group Leadership experience
- Excellent time management
- Motivated to work in the data science industry
- Fast paced learner
- Ability to focus on technical tasks for extended period of time

BENJAMIN BRUNKE

BENBRUNKE@GMAIL.COM

484-574-9432

WWW.LINKEDIN.COM/IN/BEN-BRUNKE

SKILLS

JAVA
JavaScript
IDS/IPS
Networking
HTML
Cyber Security
Customer Service
Computer Hardware

EXPERIENCE

RETAIL SALES SPECIALIST
May 2018 – Present

Provide excellent knowledge and technical support of a variety of products and educate the customer on which solution will work best for them and their needs.

EDUCATION

BACHELOR OF SCINCE / DECEMBER 2023
West Chester University of Pennsylvania
Computer Science major with certificate in Cyber Security graduating GPA 3.62

ACCOCIATE OF SCIENCE / JUNE 2020
Delaware County Community College
Computer Science major graduating GPA 2.9

VOLUNTEER EXPERIENCE OR LEADERSHIP

Volunteer Firefighter with Radnor Fire Company of Wayne
2014-2022
Provide general life safety by acting fast in fire suppression, Advanced rescue, and BLS support to medical personnel

Grayson Deiley

1-267-347-2408 • Deiley921@gmail.com • Erwinna, PA 18920

Dedicated worker with excellent communication, time management and computer skills. Aiming to leverage my abilities to successfully work and improve at your company.

Experience

JUN '22 - AUG '22

Platform Engineer Intern | QVC, Erwinna, PA

- Investigated mechanical failures or unexpected maintenance problems.
- Directed and supported installation teams during starting up and testing new software
- Learned multiple different software in order to monitor servers and databases
- Worked in a team effectively
- Expressed Ideas fluently

JUN '21 - AUG '21

Front End Associate | Giant, Doylestown, PA

- Greeted and informed customers of products, fostering positive store experiences.
- Built and maintained positive working relationships with co-workers.
- Maintained inventory and store visual presentation to meet customer needs.
- Answered questions regarding store and merchandise.

JUN '20 - AUG '20

Road Crew Member | Montgomeryville Municipality , Montgomeryville, PA

- Dumped, spread and tamp asphalt, using pneumatic tampers, to repair joints and patch broken pavement.
- Set out signs and cones around work areas to divert traffic.
- Cleared debris from culverts and other drain structures to maintain road integrity.
- Drove trucks to transport crews and equipment to work sites.

Education

EXPECTED GRADUATION MAY '23

Bachelor Of Science (B.S.) In Computer Science Candidate

West Chester University, West Chester, PA GPA 3.52

Relevant Coursework | Data Structures And Algorithms | Software Engineering | Networking

Additional Skills

Troubleshooting and Testing | Java | C | Linux | Excel | Ansible