Installation Guide

Team 3 Kuttal

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Configure your VM

1. Obtain a Linux-based Virtual Machine.
2. SSH into the VM.
3. Install Docker from the command line.
    a. Execute the following commands (see https://docs.docker.com/engine/install/ubuntu/ for more documentation):

        for pkg in docker.io docker-doc docker-compose docker-compose-v2 podman-docker containerd runc; do sudo apt-get remove $pkg; done

        sudo apt-get update
        sudo apt-get install ca-certificates curl gnupg
        sudo install -m 0755 -d /etc/apt/keyrings
        curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
        sudo chmod a+r /etc/apt/keyrings/docker.gpg

        echo \
          "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \
          $(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
          sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
        sudo apt-get update

        sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin

4. If Docker is already installed, make sure the docker daemon is running with:
        sudo systemctl start docker

5. Install Node and NPM from the command line using:
        sudo apt install nodejs
        sudo apt install npm

6. Verify node & npm installation by running:
        node -v
        npm -v

7. Setup SSLs in the /etc/ssl directory of the VM.
    a. Navigate into the /etc/ssl directory with the following command:
        cd /etc/ssl
    b. Open the following link in the browser:
        https://certbot.eff.org/instructions?ws=nginx&os=ubuntufocal&tab=standard

c. The software dropdown should be Nginx, but update the system dropdown to reflect the OS the VM is running on.
d. Follow the remainder of the installation steps specified on the webpage.

8. Install MongoDB from the command line using the following steps
    a. Follow https://www.mongodb.com/docs/v2.2/tutorial/install-mongodb-on-linux/ for the correct installation steps for 32 and 64bit linux distributions

9. Verify MongoDB was installed by running
    mongod - -version

10. Install git from the command line by running
    sudo apt install git-all

11. Verify git installation by running
    git -v

12. Update your git configuration with your git credentials by running the following commands and updating with your information where appropriate
    git config –global user.name “John Doe”
    git config –global user.email johndoe@example.com

13. Check your git configuration settings got updated appropriately by running
    git config –list

14. Clone the repository
    a. In a directory of your choice run the following command
    git clone https://github.ncsu.edu/engr-csc-sdc/2023FallTeam03-Kuttal.git

15. Navigate into the project directory
    cd 2023FallTeam03-Kuttall

16. Setup the env files, **NOTE** After running each command, open the new .env file and update fields accordingly. The example screenshots contain values with “hostname” which should be changed to the address of your VM which should look something like: “sd-vm01.csc.ncsu.edu”
    a. Set up the vm .env file
    cd vm
    cp .template_env .env
        i. MONGO_USER and MONGO_INITDB_ROOT_USERNAME should not be the same username.

ii.

vm > .env

```
MONGO_INITDB_ROOT_USERNAME=theMajorAdmin
MONGO_INITDB_ROOT_PASSWORD=password
MONGO_INITDB_DATABASE=pairProgrammingTool
MONGO_USER=admin
MONGO_PASSWORD=123
```

Figure 1: The env file containing database credentials

b. Set up the app .env file
   cd app
   cp .template_env .env

i.

vm > app > .env

```
REACT_APP_HUME_API_KEY='1234567890abcdefghijklmnop'
REACT_APP_HUME_ENDPOINT='wss://api.hume.ai/v0/stream/models'
REACT_APP_API_URL='https://hostname/server/api'
REACT_APP_WEBSOCKET_URL='wss://hostname/server/ws'
REACT_APP_VOICE_WEBSOCKET_URL='wss://hostname/server/voice'
REACT_APP_PEER_HOST='hostname'
REACT_APP_PEER_PATH="/webrtc/myapp"
```

Figure 2: The env file for the React app

c. Set up server .env file
   cd ../sever
   cp .template_env .env

i.

vm > server > .env

```
MONGO_INITDB_DATABASE=pairProgrammingTool
MONGO_USER=admin
MONGO_PASSWORD=123

DEEPGRAM_API_KEY='1234567890abcdefghijklmnop'
API_URL='https://hostname/server/api'
MONGODB_URI="mongodb://db:27017/"
```

Figure 3: The env file for the server

d. Set up the database .env file
   cd ../database
   cp .template_env .env

17. Build the application
    a. Navigate to the vm folder of the project 2023FallTeam03-Kuttal/vm and run docker compose up –build

18. Verify the application is running
    a. Open https://<hostname> to see it app is running

b. Open the console on the web page to see if websockets have connected
c. Try running a session to see if the api calls are working

19. See the troubleshooting guide below for further documentation

Build the Extension

To run the extension first you will need to install vscode, nodejs, and git for your given operating system, see below.

Windows

1. Install Visual Studio Code.
    a. Open the following link in a browser: https://code.visualstudio.com/download.

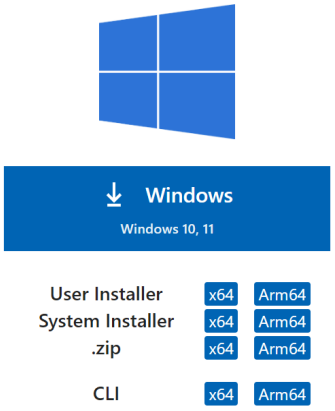

Figure 4: Windows installation window for VS Code

    b. Click the box labeled ‘Windows’ to download the zip file. Once the download is completed, open your Downloads folder and right-click on the file and select Open.
    c. The application should then be extracted within the Downloads folder. To open it, double click on the VSCodeUserSetup icon

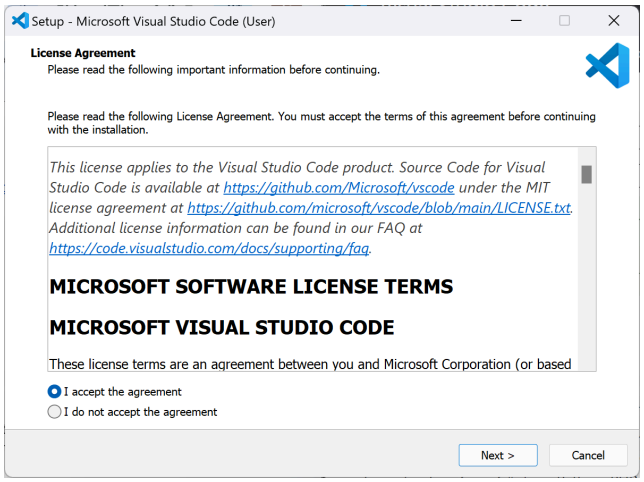

Figure 5: Windows Pop-Up installation windows for VS Code

d. Once the setup window opens, click “I accept the agreement” and click the Next button. Click the Next button again to accept the default VS Code configurations, and then click Install.
e. Once it has finished installing, search “VS Code” in your file explorer and double click it to run it.

2. Install Node.
    a. Open the following link in your browser: https://nodejs.org/en/download

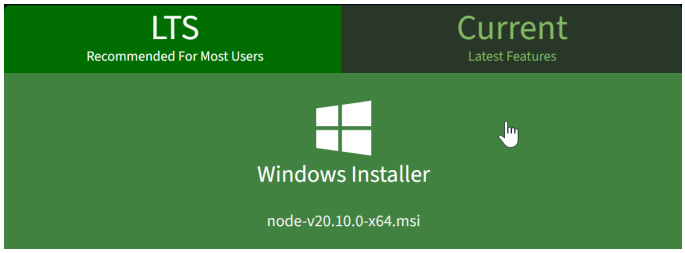

Figure 6: NodeJS Installation page for Windows

b. Select the box labeled ‘Windows Installer’
c. Once downloaded, right-click the node pkg file in your Downloads folder and select ‘Open.’
d. Select ‘Continue’ and ‘Agree’ throughout the installer when appropriate until the package is installed. Then, click ‘Close’ to end the installation process.
e. Once it has finished installing, search “Docker Desktop” in your file explorer and double click it to run it.
f. Select “Accept” on the Docker Subscription Service Agreement pop-up

3. Install Git.
    a. Go to the website: https://git-scm.com/download/win and select either “32-bit Git for Windows Setup” or “64-bit Git for Windows Portable” under the Standalone Installer section
    b. Install Git by double clicking on the executable file that was downloaded

Linux

1. Install Visual Studio Code.
    a. Go to the website: https://code.visualstudio.com/docs/setup/linux and follow the steps based on the Linux distribution you have.
2. Install Node.
    a. Go to the website: https://www.geeksforgeeks.org/installation-of-node-js-on-linux/# and follow the steps based on the Linux distribution you have.
3. Install Git.
    a. In the terminal, if you’re not on a Debian-based distribution, run the command `sudo dnf install git-all`. Otherwise, run the command `sudo apt install git-all`

Mac

1. Install Visual Studio Code.

a. Open the following link in a browser: https://code.visualstudio.com/download.

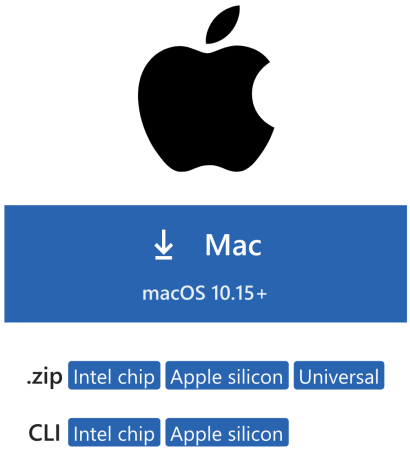

Figure 7: Mac installation window for VS Code

b. Click the box labeled 'Mac' to download the zip file. Once the download is completed, open your Downloads folder and right-click on the file and select Open.

c. The application should then be extracted within the Downloads folder. To open it, right-click on the 'Visual Studio Code' application and select Open.

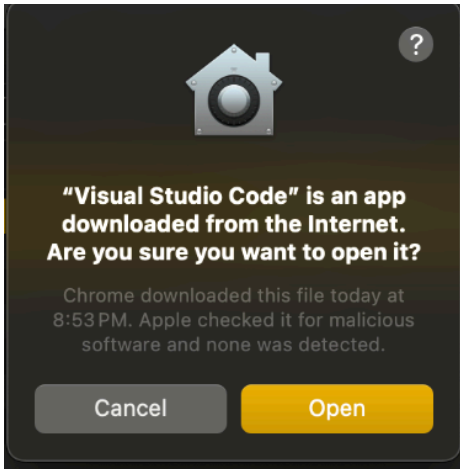

Figure 8: Mac VS Code Installation pop-up window

d. If the above message appears, select the 'Open' button. Visual Studio Code should now be running.

2. Install Node.

a. Open the following link in your browser: https://nodejs.org/en/download

b. Select the box labeled 'macOS Installer.'

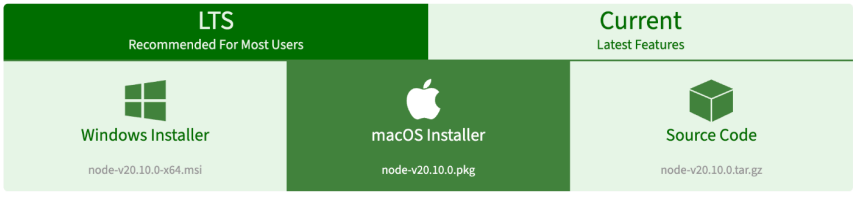

Figure 9: NodeJS installation page for Mac

   c. Once downloaded, right-click the node pkg file in your Downloads folder and select ‘Open.’
   d. Select ‘Continue’ and ‘Agree’ throughout the installer when appropriate until the package is installed. Then, click ‘Close’ to end the installation process.
3. Install Git.
   a. First, open the “Terminal” application.
   b. Run the command ‘git –version.’ If a version is not returned, the terminal will prompt you to install git. Follow the instructions provided.
   c. Install homebrew if you don’t already have it by typing /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)" into the terminal.
   d. Next, type brew install git into the terminal to install git

Configure Extension

1. Update your git configuration with your git credentials by running the following commands and updating with your information where appropriate
   git config –global user.name “John Doe”
   git config –global user.email johndoe@example.com

2. Clone the repository and login with your github credentials
   git clone https://github.ncsu.edu/engr-csc-sdc/2023FallTeam03-Kuttal.git

3. Navigate to VScode and open 2023FallTeam03-Kuttal/extension folder in a new window

4. Install node modules with command
   npm install

5. Setup an .env file in the extension directory using the .template_env file as a reference.
   a. REACT_APP_WEBPAGE_URL='https://<hostname>'
   b. REACT_APP_WEBSOCKET_URL='wss://<hostname>'
      i. where <hostname> is replaced with the hostname of the VM
6. Update the link on line 24 in extension.js in the src folder of the extension directory to reflect the hostname of the VM.
   a. `wss://<hostname>/server/extension/ws` where hostname is replaced with the hostname of the VM

7. Build the extension, this can be accomplished 2 ways
   a. From the terminal, select CTRL + Shift + P (Windows and Linux) or CMD + Shift + P.
   b. The dropdown should appear (see Figure 10).

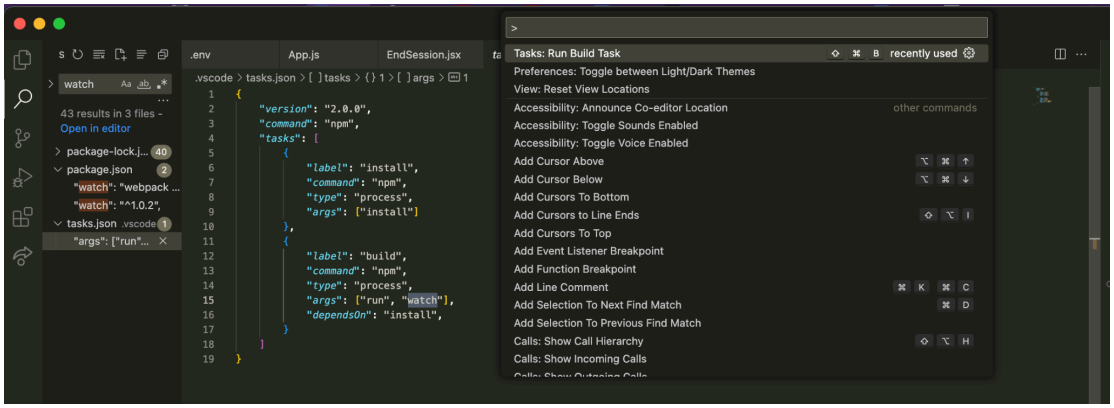

Figure 10: Build Options Dropdown

c. Select Tasks: Run Build Task

a. Alternatively, you can run the following command in the terminal of the extension folder directory:
npm run watch

a. After executing with build command, you should see an output similar to Figure 11.

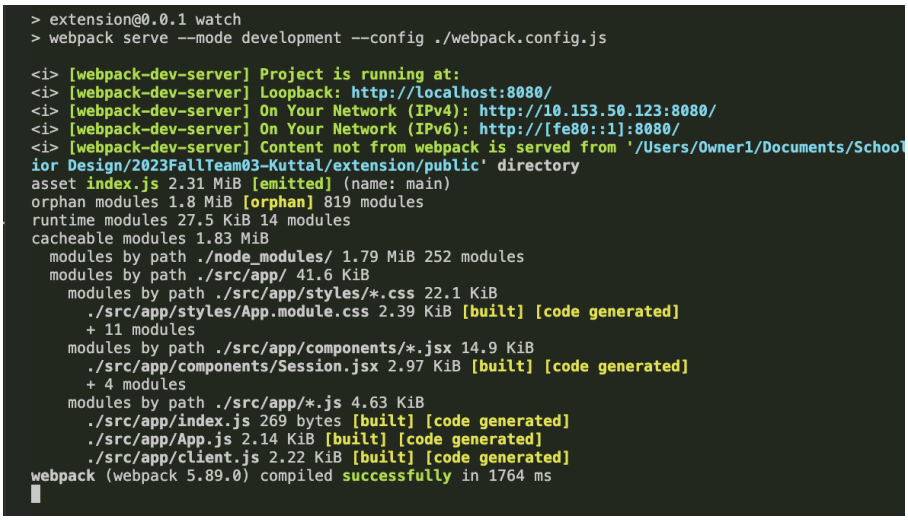

Figure 11: Extension Build Output

6. Run the extension.
   a. Select F5 for Windows and Linux.
   b. Select fn + F5 for Mac.
   c. This should automatically pop open a VS Code window with the extension installed. Click on the pair programming tool icon (see Figure 12).

7. To verify if the extension is running, follow troubleshooting steps outlined below.

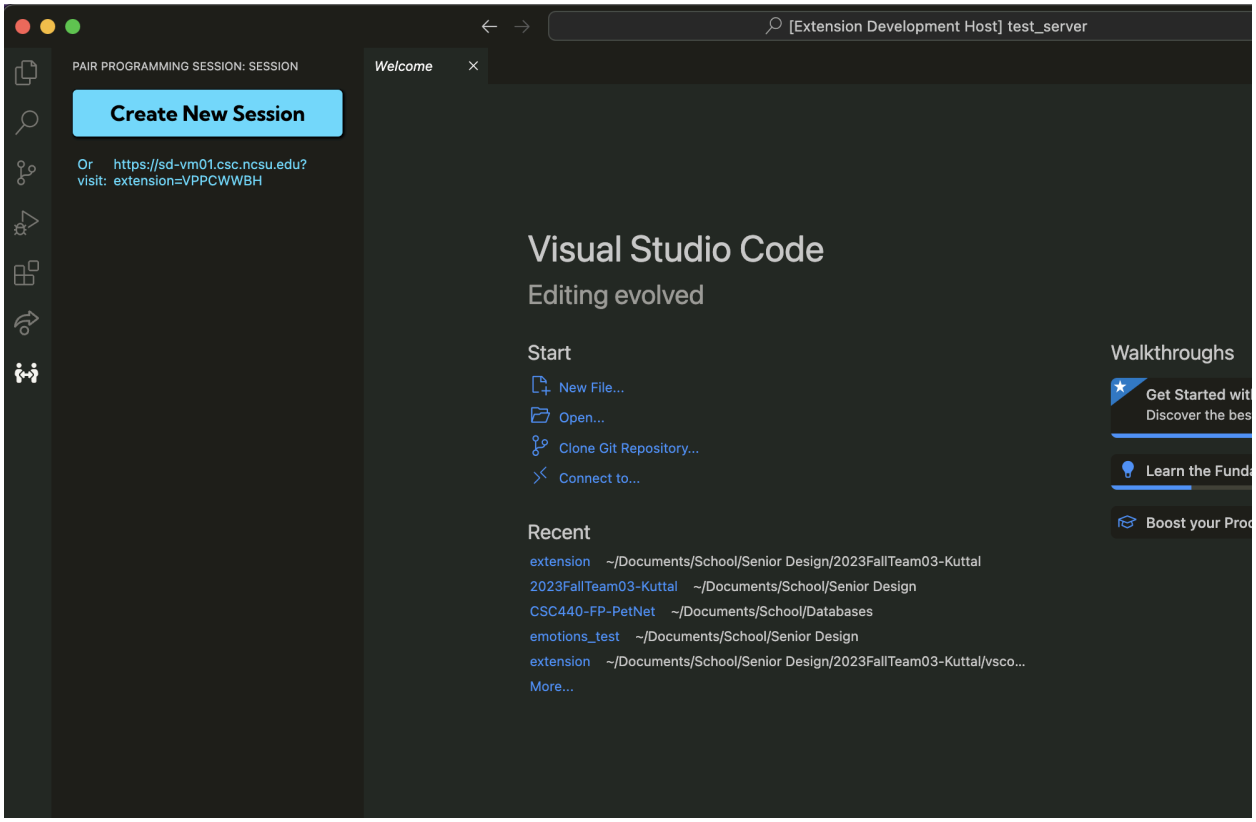

Figure 12: VSCode Window with Extension Installed

Troubleshooting Guide

Extension

1. If the extension is installed, but no information or incorrect information is in the panel, try the following steps.
    1. Refresh the application
        a. Close and open the extension panel again
            1. You may need to do this a couple of time.

    2. In the VSCode Bar, navigate to the Help option.
        a. Select the toggle developer tool (see Figure 13).
        b. Expand the console view (see Figure 14).
            i. Add console.log() statements to the extension and view their output. Errors may already be logged.

3. If you were unable to install the extension:
    a. Check that you are running the commands in the extension directory.
    b. Delete the node_modules folder and re-run the command: npm install.
    c. Check if your VS Code needs to be updated.
    d. Restart your computer.
    e. Uninstall and reinstall VSCode.

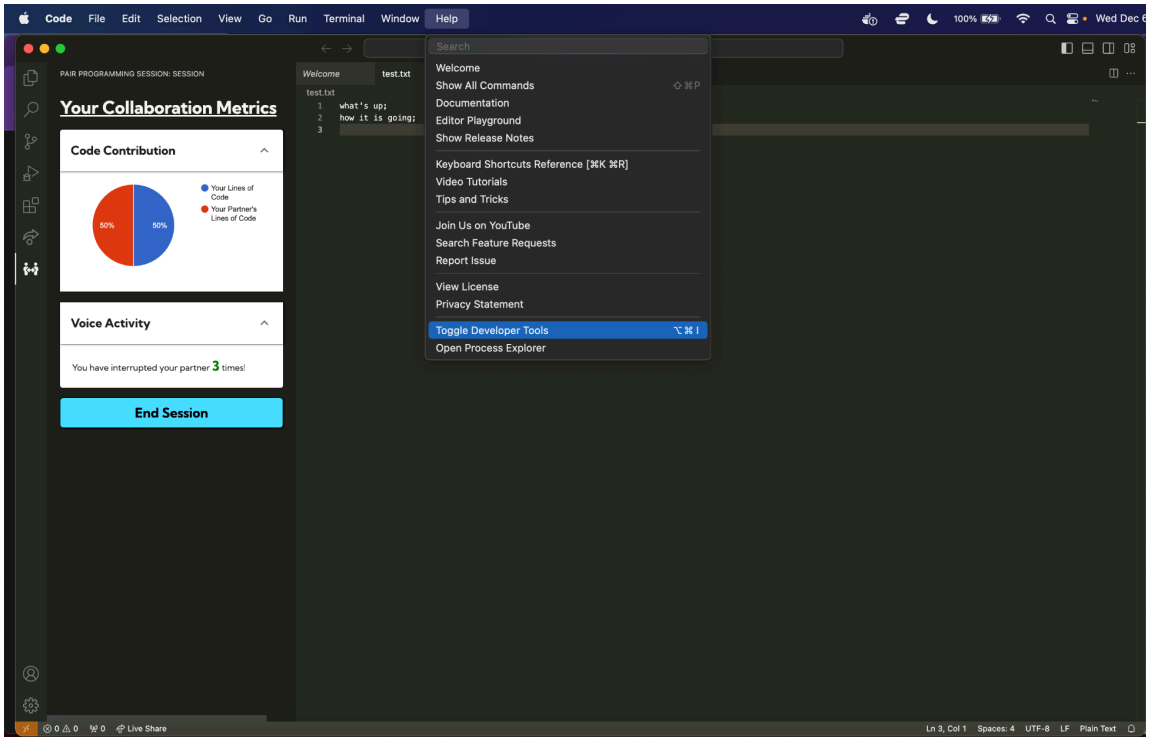

Figure 13: Developer Tools Options in VSCode View

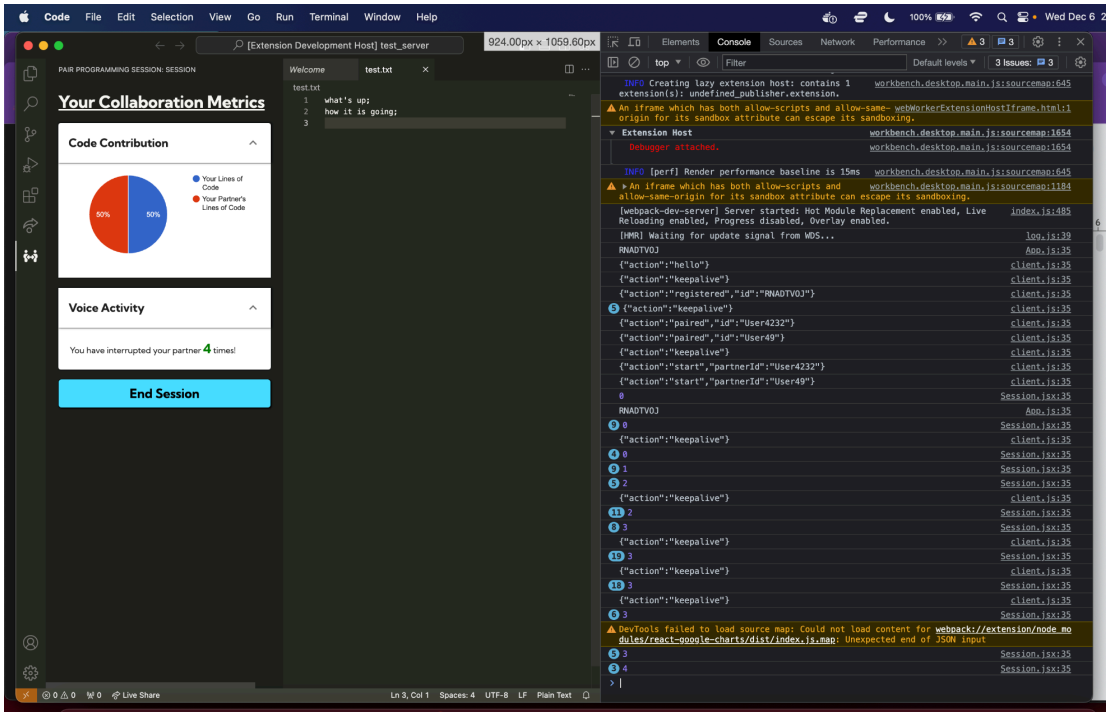

Figure 14: Extension Panel Console Output

VM

Setup

1) If you are unable to build the docker containers, try running the following commands:
   docker compose down
   docker system prune
2) If any command fails to execute or time out, try restarting the VM.
3) Double check you have enough available memory in your VM.

Web Application

1) Navigate to the URL you are hosting the app on.
    a) Right-click on the screen.
    b) Select inspect.
    c) We are logging any error that could arise, which you can view in the output.

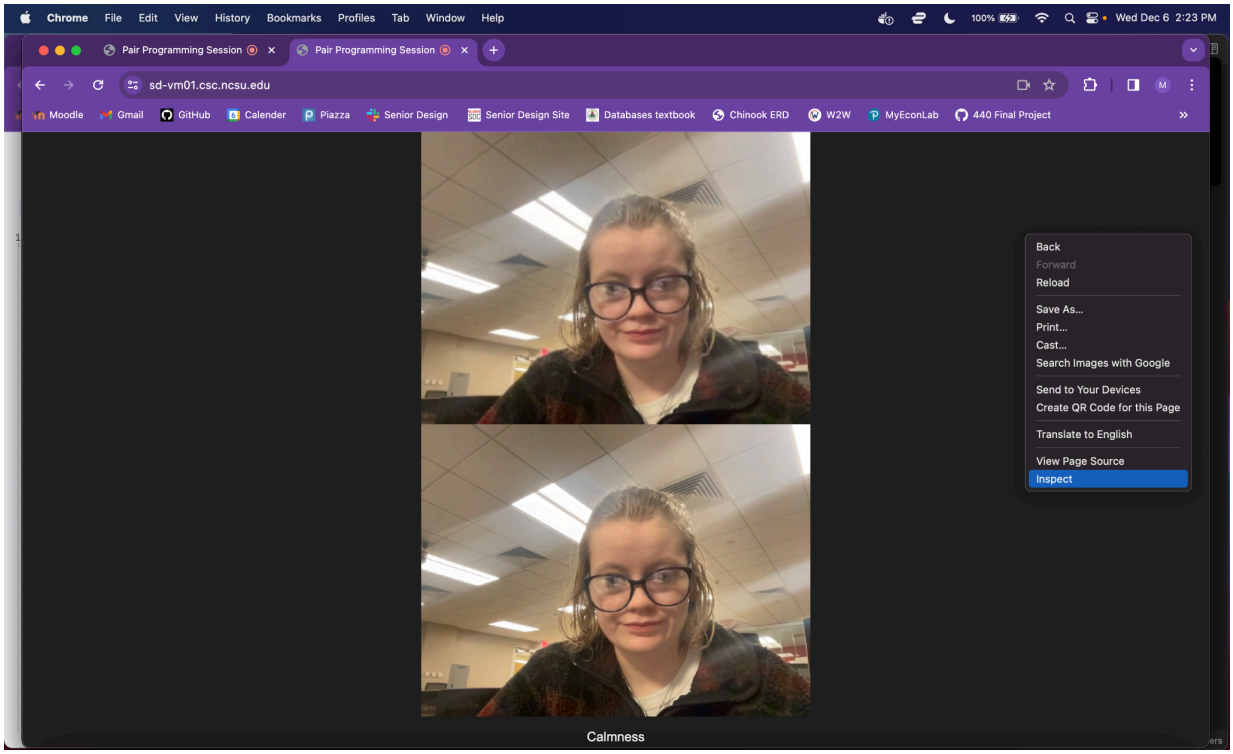

Figure 15: Developer tools options on website

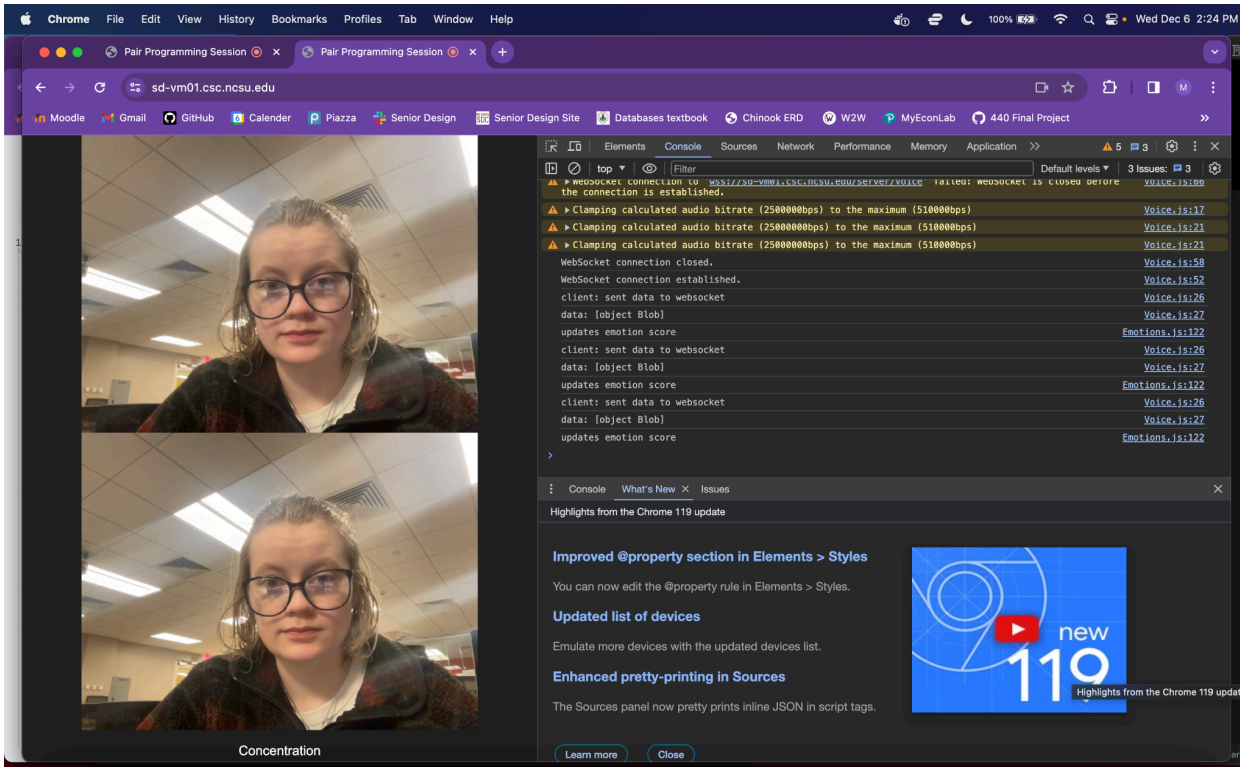

Figure 16: Console output for website

Database

1. If the console output statement does not provide enough insight, install MongoDB Compass on your local machine to view the entries in the database.
2. Open https://www.mongodb.com/try/download/compass and scroll down to the MongoDB Compass Download (GUI) section.
3. Select the platform that reflects your computer's operating system.
4. Select Download and follow the remainder of the installation steps.
5. Open MongoDB Compass on your computer.
6. Select new connection.
7. Fill out the URI with your vm's hostname: mongodb://<hostname>:27017/?authMechanism=DEFAULT
8. Select Advanced Connection Options and Authentication
    a. Fill out the fields with the MONOG_USER, MOGO_PASSWORD and MONGO_INITDB_DATABASE specified in the 2023FallTeam03-Kuttal/vm/.env file
    b. You should now be able to see all the data and can view the information as the API calls update the database.

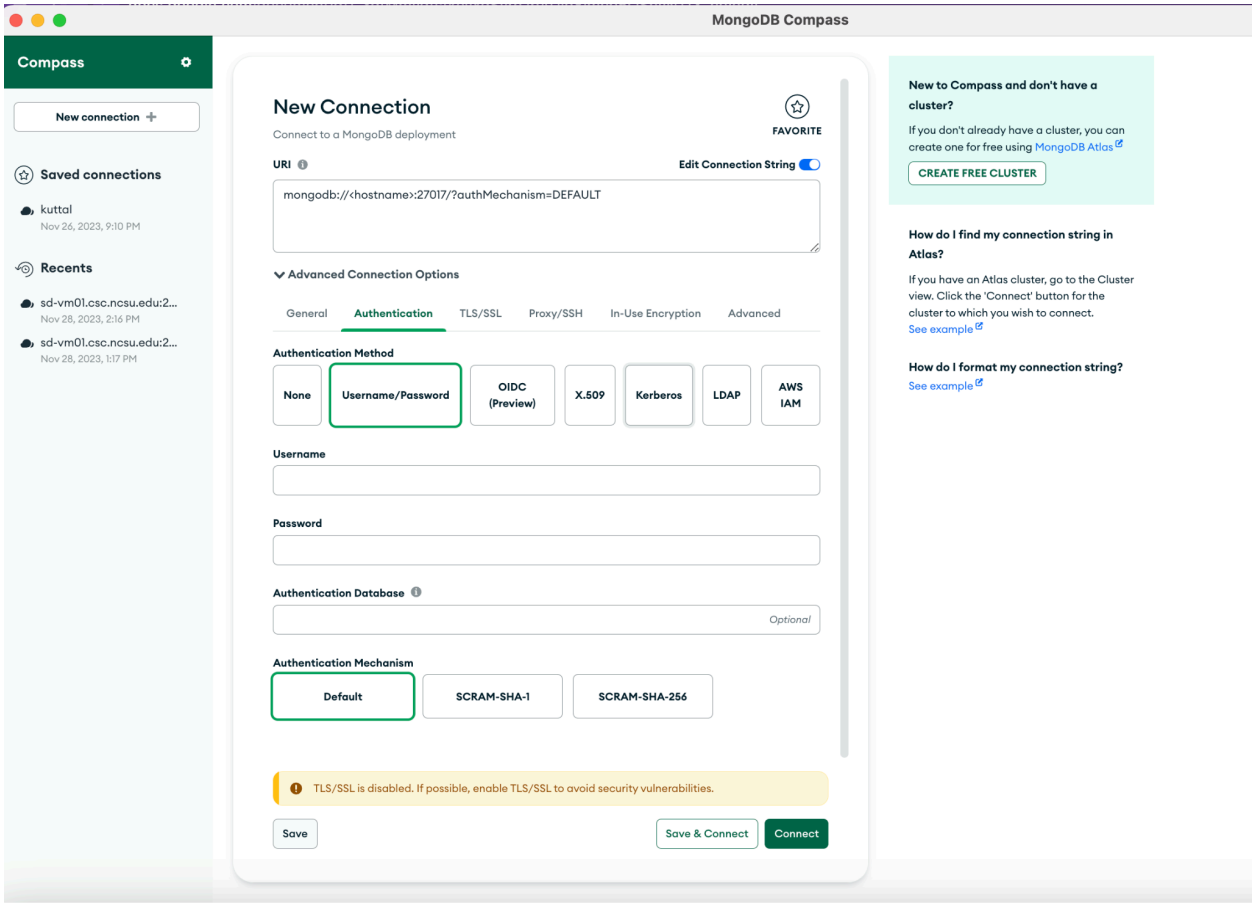

Figure 17: Create a Connection to the Mongo Database with MongoDB Compass

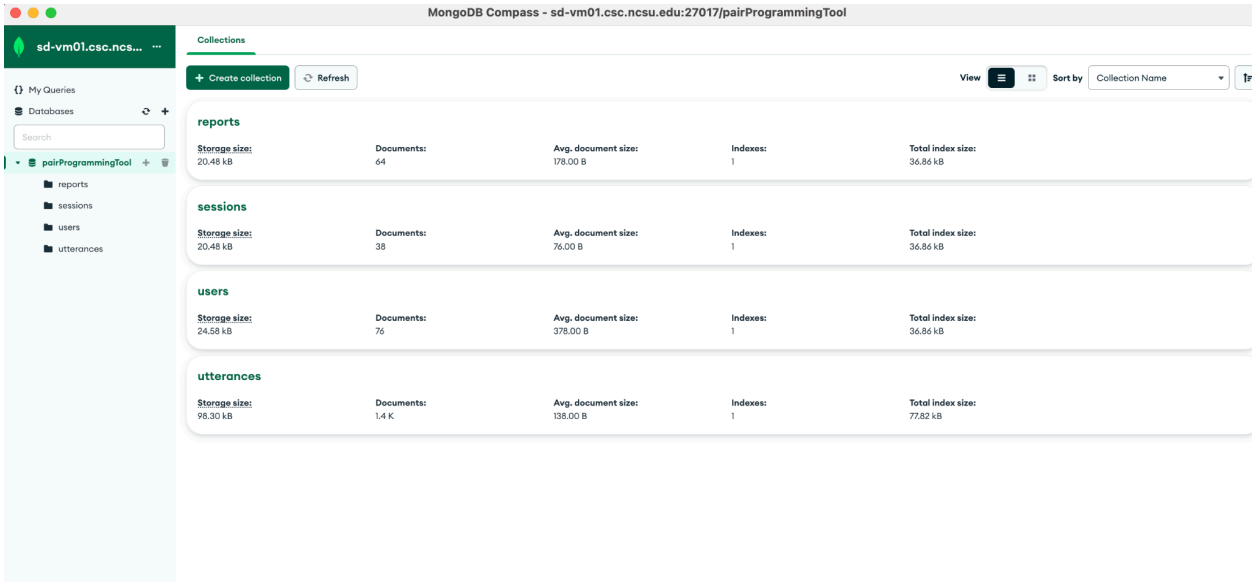

Figure 18: Successful Connection to Mongo Database