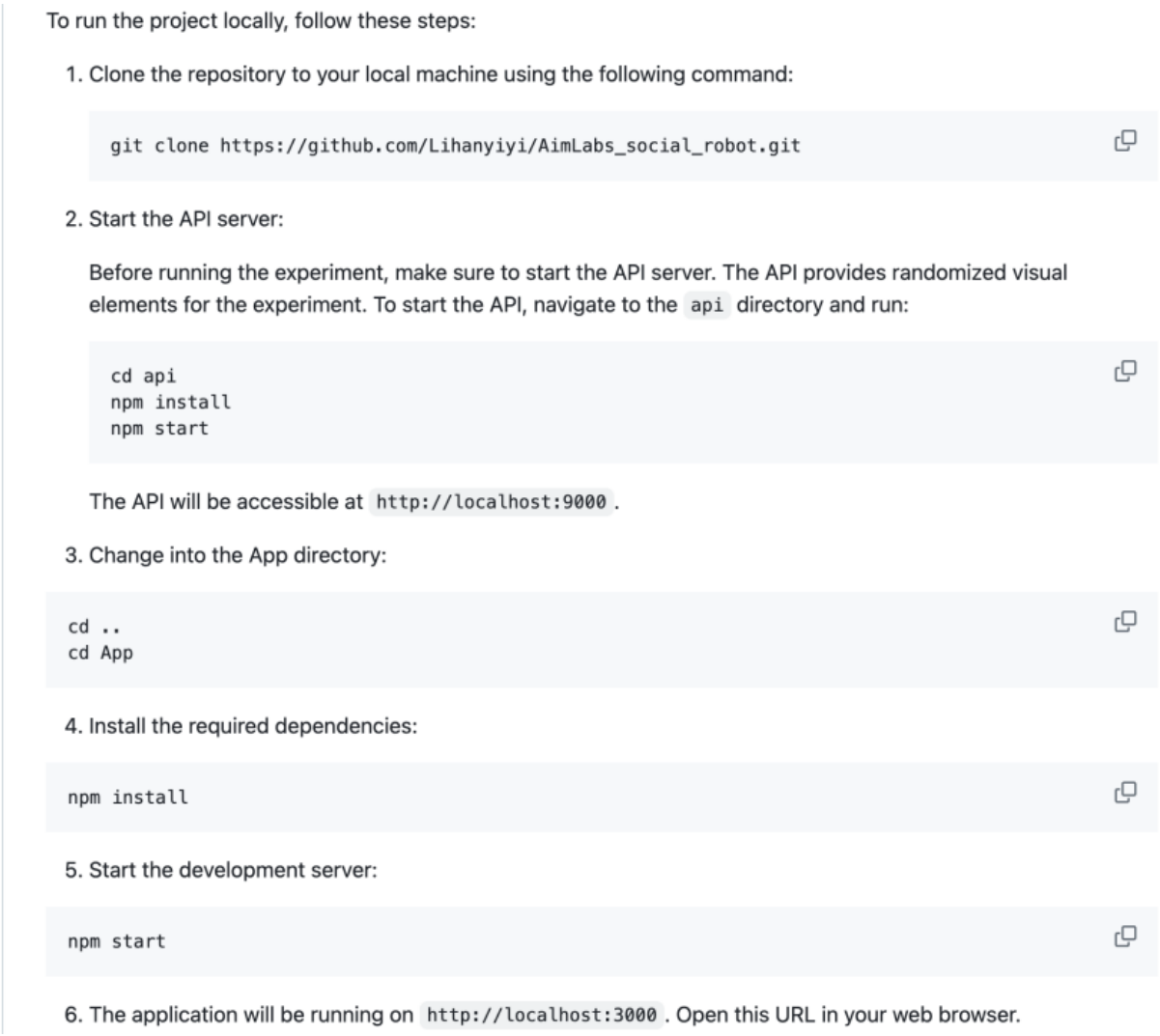
General Information

1. The PC (Robot) password is: qtrobot
2. The project is located in Home/AimLabs_social_robot
3. If you get a new qtrobot, the below picture indicates the steps for setting up:



To run the project locally, follow these steps:

1. Clone the repository to your local machine using the following command:

```
git clone https://github.com/Lihanyiyi/AimLabs_social_robot.git
```

2. Start the API server:

   Before running the experiment, make sure to start the API server. The API provides randomized visual elements for the experiment. To start the API, navigate to the `api` directory and run:

```
cd api
npm install
npm start
```

   The API will be accessible at `http://localhost:9000`.

3. Change into the App directory:

```
cd ..
cd App
```

4. Install the required dependencies:

```
npm install
```

5. Start the development server:

```
npm start
```

6. The application will be running on `http://localhost:3000`. Open this URL in your web browser.

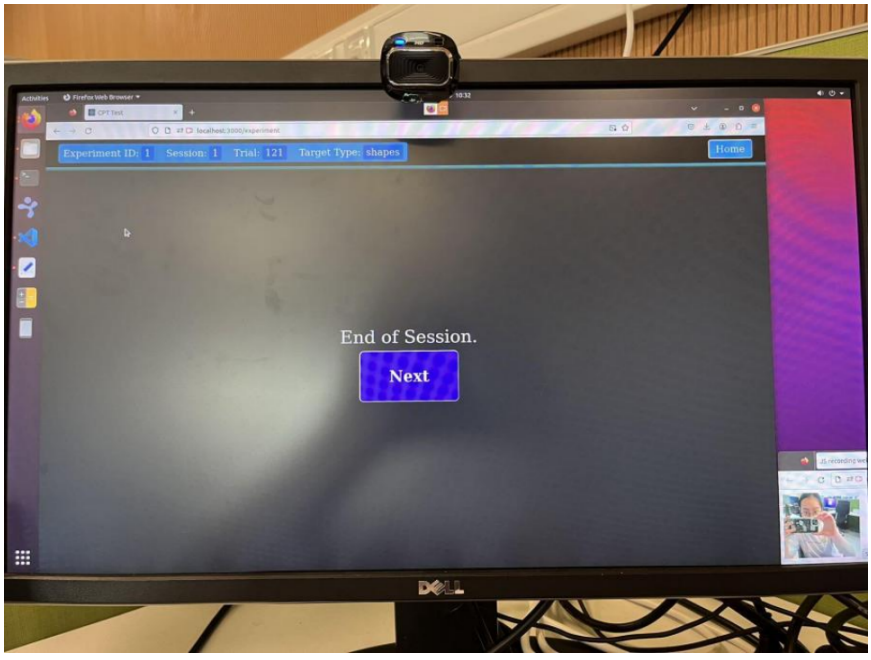
4. The line highlighted in green does not need to run during the setting up period

Protocol for running the experiment-experimenter side

5. Run in the terminal “roslaunch ~/rosbridge_websocket_qtpc.launch”
   a. This is to connect the application with the qtrobot to do the distraction
6. Modify the code in vscode for changing the default experiment number and session number [Go to App/src/App.js in App folder and change it in line 14,15]

a. This is to avoid the loss of experiment number and session number when recalibration is called
b. A recalibration will be called when the accurancy for calibration is lower than 60% [it's not automatic, participants need to be do it by themselves by clicking "recalibrate" button, clicking "ok" button will directly go to experiment session]

7. Set up and test the tablet for controlling the social interaction
    a. Open Educator tablet, connect to the robot
    b. Go to the introduction file in lessons.
    c. Then click Start to start the social interaction
        i. If it works well, then cancel the social interaction at this time, and continue to do the following steps
        ii. If it does not work well, please try to restart the robot, and then do all the steps starting from step 5
        iii. Do step 8 until the social interaction works well
8. Start the application in vscode and direct to the page with "camera message"
    a. First in the terminal of vscode, direct to api folder [cd api]
    b. Then run the command npm start [npm start]
    c. Open another terminal in vscode, direct to App folder [cd App]
    d. Then run the command npm start [npm start]
    e. Input the numbers and direct to the page with "camera message"
9. Open the "recording through webcam.html", make sure the main screen can see the part of the content in the webcam
    a. First go to home/AimLabs_social_robot/recording through webcam.html
    b. Click the file "recording through webcam.html"
    c. Please move the html into a new window in the browser and allow the permission to record. When the dialog window is open, please select " Microsoft LifeCam HD-3000: Mi"
10. Then make sure that we put the application window and the recording window at a proper position. A sample position is shown below.



11. Start the python code for recording through the camera on the robot [*End the recording till the end of the experiment, you can end it at any time as you wish by enter [Ctrl] C*]
    a. Record the social interaction
    b. Open another terminal in the computer
    c. Run [cd ~/AimLabs_social_robot/robot_camera_recording/]
    d. Run [python3 qt_face_recognition_annot.py]
    e. End the recording using [Ctrl C]
12. Then use the keyboard and type `[Ctrl] + [Alt] + [Shift] + [R]` to record the whole screen, the length is set to be 1 hour
    a. Length means the longest recording time that the ubuntu can record, when the recording exceeds the length, the ubuntu will automatically stop recording
    b. If you want to change the recording length, you can run the line of code in a new terminal window. This should be done before recording,

```
gsettings set org.gnome.settings-daemon.plugins.media-keys
max-screencast-length time[in seconds]
```

    c. Stop the recording by type `[Ctrl] + [Alt] + [Shift] + [R]` again, the file will automatically saved into Videos folder
13. Click Start in the tablet to start the social interaction

Then it's time for the participants to do the experiment

When the participants finish, the step we need to do is

1. Press Ctrl C in the terminal which runs the recording through camera in the robot
2. Press `[Ctrl] + [Alt] + [Shift] + [R] to stop recording the whole screen`

`How to access the files save data:`

~/AimLabs_social_robot/robot_camera_recording/: directory for recording through robot camera, and the csv files for emotions
Downloads: directory for response time, random elements, raw gaze data.txt, heatmap.png
Videos: directory for recording through webcam

Limitation

1. The participants will see themselves when they are doing the experiment since we are recording the whole screen, which may cause extra distraction

2. We use shortcut to record the whole screen, which needs the experimenter not to forget the start and the end of the recording
3. The recording does not contain any audio, since the robot computer does not have speaker.