TCHAIClass V01.5

Step-by-Step Setup and User Guide

Yahya Nazar

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Table of contents

Overview

TCHAIClass V01.5 is a browser-based live teaching platform. The teacher runs a small Python server on their laptop. Students connect from any device on the same WiFi network using a session join key.

New in V01.5: Students can now ask an AI assistant for help directly inside the Student View. The teacher sets the context (instruction), students paste their code or question, and Claude responds instantly. The teacher sees which students used AI help in the roster panel.

This guide is configured for teacher **Yahya Nazar**. The project is installed at: **/Users/yahyanazer/Dropbox/T**

The platform has two windows:

- **Teacher Console** — full session control, tool selection, AI instruction, roster management
- **Student View** — receive tools, raise hand, react, send questions, ask AI for help

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What is New in V01.5

Feature	Description
AI Help Panel	New panel in Student View — students paste code or questions and get an instant answer from Claude
Three AI Modes	Fix (debug code), Add (extend with new feature), Explain (understand a concept)
Teacher AI Instruction	Teacher sets context once at session start — guides every student's AI interaction
AI Roster Indicator	Teacher sees a badge next to any student who has used AI help
AI Activity Log	Every AI interaction is logged to the Event Log and saved with the session
.env API Key	Anthropic API key stored securely in a local `.env` file — students never see it

> **Note**
>
> V01.5 is fully backwards compatible. If no API key is set, the platform runs exactly as V01 — the AI panel shows a disabled message and everything else works normally.

Window Layout

The diagram below shows the panel layout for both windows. Each panel is labelled A through F and colour-coded by function.

Panel Reference — Teacher Console

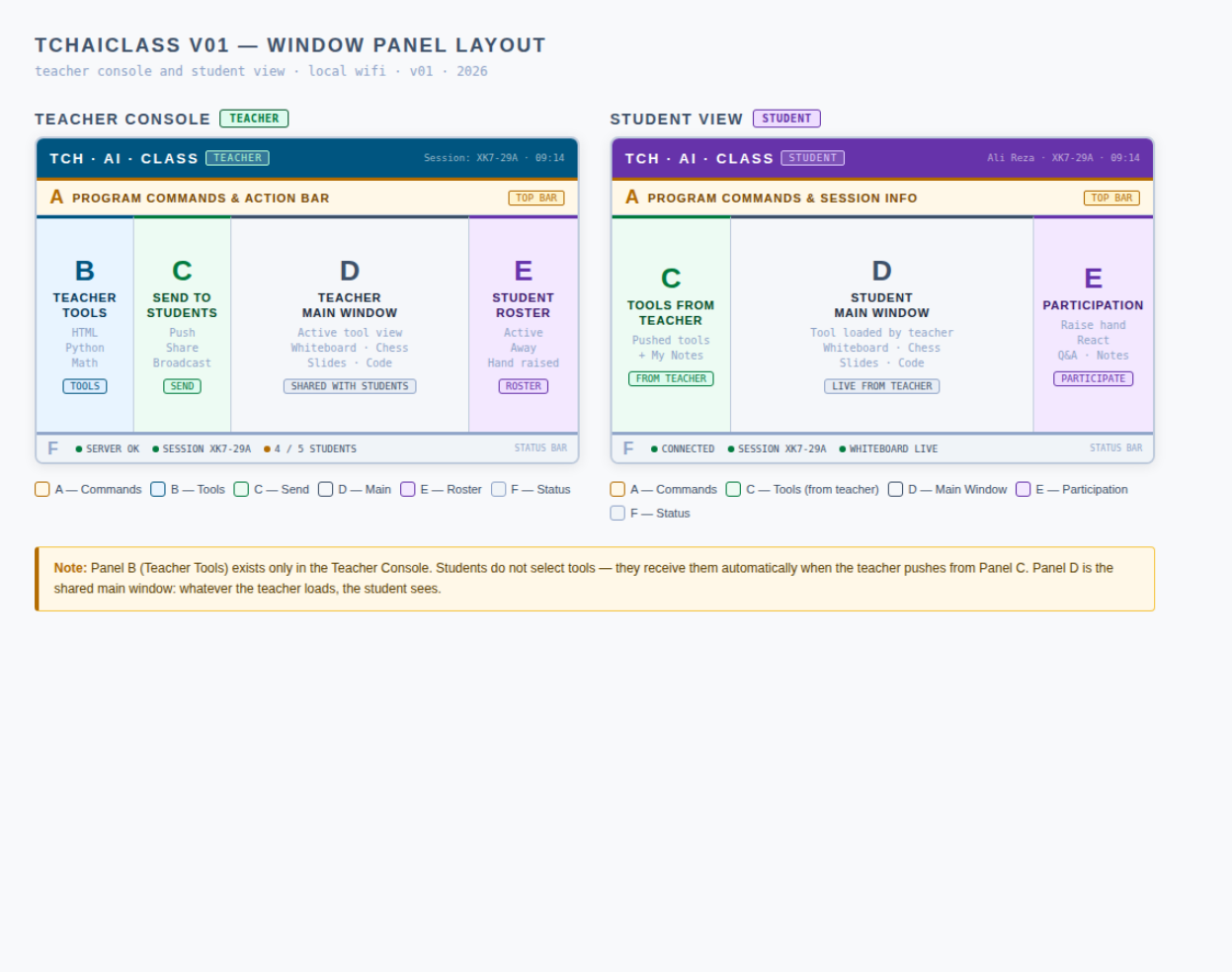

Figure 1: TCHAIClass V01.5 — Teacher Console (left) and Student View (right)

Panel	Name	Description
A	Program Commands	Top bar — session info, theme toggle, clock
B	Teacher Tools	Tool library organised by category (HTML, Python, Math)
C	Send to Students	Push selected tool to students, broadcast messages, end session
D	Main Window	Active tool view — shared live with all students
E	Student Roster	Lists all students — active, away, hand raised, AI used
F	Status Bar	Server status, session key, student count, AI status

Panel Reference — Student View

Panel	Name	Description
A	Program Commands	Top bar — session info, student name, theme toggle, clock
C	Tools from Teacher	Tools pushed by teacher appear here; private notes area
D	Main Window	Active tool loaded automatically when teacher pushes
E	Participation	Raise hand, reactions, Q&A messages, progress timer
AI	AI Help	New in V01.5 — Fix / Add / Explain modes, powered by Claude
F	Status Bar	Connection status, session key, active tool, elapsed time

> **Note**
>
> **Panel B** exists only in the Teacher Console. Students receive tools automatically when the teacher pushes from Panel C.

Before You Start

Configuration Summary

```
Teacher Name : Yahya Nazar

Project Path : /Users/yahyanazer/Dropbox/TchAIClass

Dev Folder   : /Users/yahyanazer/Dropbox/TchAIClass/Development

Session Logs : /Users/yahyanazer/Dropbox/TchAIClass/Development/sessions/logs

API Key File : /Users/yahyanazer/Dropbox/TchAIClass/Development/.env
```

Requirements

- Mac with Python 3.x installed
- All students on the same WiFi network as **Yahya Nazar**'s laptop
- Chrome or Safari browser (teacher and students)
- Files saved in: **/Users/yahyanazer/Dropbox/TchAIClass/Development**
- An Anthropic API key — get one free at **console.anthropic.com**

Files Required in Development Folder

```
/Users/yahyanazer/Dropbox/TchAIClass/Development

  server.py

  teacher.html

  student.html

  requirements.txt

  .env                    <- NEW in V01.5 (your API key)

  .env.template           <- NEW in V01.5 (copy this to create .env)

  tools/

     tools_registry.json
```

```
    HTML/Whiteboard/whiteboard.html

courses/

    demo_course.json

students/

    demo_roster.json
```

Step 1 — Disable AirPlay Receiver

macOS reserves port 5000 for AirPlay Receiver. You must turn it off before starting the server.

Instructions:

- Click **Apple menu** → **System Settings**
- Click **General** → **AirDrop & Handoff**
- Turn **AirPlay Receiver** → **OFF**

Verification:

☐ AirPlay Receiver toggle is grey (off)
☐ Port 5000 is now free

Notes / Issues:

Step 2 — Install Python Packages

V01.5 adds two new packages. Run this command once in Terminal — it installs all four packages needed.

```
pip install flask flask-socketio anthropic python-dotenv --break-system-packages
```

Verification:

☐ No errors during install
☐ Terminal shows `Successfully installed` for all four packages
☐ `flask` installed
☐ `flask-socketio` installed

☐ `anthropic` installed
☐ `python-dotenv` installed

Notes / Issues:

Step 3 — Create the .env File and Add Your API Key

This is a **new step in V01.5**. The `.env` file stores your Anthropic API key securely. The server reads it at startup — students never see it.

Instructions:

- In Finder, open the Development folder at: **/Users/yahyanazer/Dropbox/TchAIClass/Development**
- Find the file called `.env.template`
- Duplicate it and rename the copy to `.env`
- Open `.env` in a text editor (TextEdit or VS Code)
- Replace `sk-ant-your-key-here` with your real API key

The `.env` file should look like this:

```
ANTHROPIC_API_KEY=sk-ant-api03-xxxxxxxxxxxxxxxxxxxxxxx
```

> **!** Important
>
> Keep your `.env` file private. Never share it, email it, or commit it to GitHub. It contains your personal API key. The `.env.template` file is safe to share — it contains no real key.

Get your API key:

- Go to **console.anthropic.com**
- Sign in or create a free account
- Click **API Keys → Create Key**
- Copy the key and paste it into your `.env` file

Verification:

☐ `.env` file exists in the Development folder
☐ File contains `ANTHROPIC_API_KEY=sk-ant-...` with a real key
☐ File is named exactly `.env` (not `.env.txt`)

Notes / Issues:

Step 4 — Start the Server

Open Terminal and run both commands. **Leave Terminal open for the entire session.**

```bash
cd /Users/yahyanazer/Dropbox/TchAIClass/Development

python3 server.py
```

Expected Terminal output in V01.5:

```
[DEBUG] .env file loaded
[DEBUG] Anthropic AI - ENABLED
[DEBUG] TCHAIClass V01.5 Server starting...
[DEBUG] Teacher  -> http://localhost:5000/teacher
[DEBUG] Student  -> http://192.168.x.x:5000/student
[DEBUG] AI Help  -> ENABLED
[DEBUG] Share this URL with students on the same WiFi
 * Serving Flask app 'server'
 * Debug mode: on
```

> ⚠ Warning
>
> If you see `[DEBUG] Anthropic AI - DISABLED` check that your `.env` file exists and contains a valid API key, then restart the server.
> The warning about `urllib3` is harmless — ignore it.
> If you see `Address already in use` repeat Step 1 — AirPlay Receiver is still on.

Verification:

- ☐ Terminal shows `Serving Flask app` with no errors
- ☐ Terminal shows `Anthropic AI - ENABLED`
- ☐ Teacher URL is visible: `http://localhost:5000/teacher`
- ☐ Student URL is visible in Terminal output
- ☐ Terminal window is left open

Notes / Issues:

Step 5 — Open Teacher Window (Panel A)

Open Chrome or Safari and go to the Teacher URL.

```
http://localhost:5000/teacher
```

You will see the **Start a Session** setup card — this is **Panel A**. Notice the new **AI Instruction** field added in V01.5.

Verification:

- ☐ Browser opens without errors
- ☐ Start a Session card is visible with Course and Class dropdowns
- ☐ AI Instruction field is visible below Teacher Name
- ☐ Dark / Light theme toggle works in top right corner

Notes / Issues:

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Step 6 — Start a Session with AI Instruction

Fill in the setup card including the new AI Instruction field, then launch the session.

Instructions:

- Select **Demo Course** from the Course dropdown
- Select **Introduction Class** from the Class dropdown
- Type your name — **Yahya Nazar** — in the Teacher Name field
- Type an AI instruction in the **AI Instruction** field — for example:

```
Fix the bug in the for loop and explain what was wrong
```

- Click **START SESSION**

The join key will appear in large letters. Write it down — students need it.

```
Join Key received: ________
```

> **Note**
>
> The AI Instruction is the context Claude uses when students ask for help. It tells Claude what the lesson is about and what kind of help to give. You can leave it blank and Claude will still answer, but a good instruction leads to better, more focused answers.
> **Good instruction examples:**

- *"Fix the syntax errors in the Python script"*
- *"Add a function to calculate the average of a list"*
- *"Explain what a for loop does in simple terms"*

Verification:

- ☐ Join key appears on screen in large letters
- ☐ Student URL is shown below the key
- ☐ Session label updates in Panel A top bar
- ☐ Terminal shows `[DEBUG] Session created`

Notes / Issues:

Step 7 — Students Open the Student Window (Panel A)

Each student opens a browser on their own device and goes to the Student URL. The exact IP is shown in your Terminal after Step 4.

```
http://[IP shown in Terminal]:5000/student
```

> **!** Important
>
> Students must use the IP address shown in your Terminal — **not** `localhost`. Only **Yahya Nazar**'s machine can use `localhost`.

Students fill in the join form:

Field	Value
Your Name	Student's own name
Student ID	e.g. S001, S002
Join Key	Key from Step 6

Students click **JOIN CLASS**.

Verification:

- ☐ Student window opens — Panel A shows course and session info
- ☐ Panel D shows "Waiting for teacher to push a tool"
- ☐ Panel E shows Raise Hand and reaction buttons
- ☐ **AI Help panel is visible** and shows `ON` if AI is enabled
- ☐ Student name appears in Teacher Panel E roster
- ☐ Terminal shows `[DEBUG] Student joined`

Notes / Issues:

Step 8 — Select and Push a Tool (Panels B, C, D)

The teacher selects a tool from Panel B and pushes it to students via Panel C. The tool loads in Panel D on both the teacher and student screens.

Instructions:

- In the Teacher window look at Panel **B** on the left
- Click **HTML Tools** to expand the category
- Click **Whiteboard** to select it
- The tool preview appears in Panel **C**
- Click **Push to All Students** in Panel C

Verification:

☐ Whiteboard loads in Teacher Panel D
☐ Whiteboard loads in Student Panel D automatically
☐ Student Panel C lists Whiteboard under "From Teacher"
☐ Student Panel D shows `LIVE FROM TEACHER` badge
☐ Terminal shows `[DEBUG] Tool pushed`

Notes / Issues:

Step 9 — Student Uses AI Help (AI Panel)

This is the **new step in V01.5**. Students use the AI Help panel to get assistance with their code or questions.

Instructions for the student:

- Look at the **AI Help panel** on the right side of the Student View
- Choose a mode:
  - **Fix** — paste broken code and ask Claude to find and fix the bug
  - **Add** — paste code and describe a feature to add
  - **Explain** — paste code or a concept to get a plain-language explanation
- Paste the code or type the question in the text area
- Click **Ask AI**
- The answer appears in the panel within a few seconds

Example — Fix mode:

A student pastes this broken Python code:

```
for i in range(10)
    print(i)
```

Claude responds with the fix and an explanation of the missing colon.

What the teacher sees:

- A badge appears next to the student's name in Panel E roster
- A toast notification shows: *"Ali Reza asked AI for help"*
- The Event Log records the student name, mode, and first 80 characters of their question

Verification:

- ☐ AI Help panel shows `ON` status indicator
- ☐ Mode buttons (Fix / Add / Explain) are clickable
- ☐ Student can type in the text area
- ☐ Clicking Ask AI shows the spinner briefly
- ☐ Answer appears in the answer box below the button
- ☐ badge appears in Teacher Panel E roster next to the student
- ☐ Teacher Event Log shows `[DEBUG] AI used by ...`
- ☐ Terminal shows `[DEBUG] AI response sent to ...`

Notes / Issues:

Step 10 — Test Participation Features (Panel E)

Students use Panel E to interact with the teacher.

Instructions:

- In the Student window Panel **E**, click **Raise Hand**
- Click a reaction button (thumbs up, question, etc.)
- Type a question in Q&A and click Send

Verification:

- ☐ Raised hand shows amber highlight in Teacher Panel E roster
- ☐ Reaction toast notification appears in Teacher window
- ☐ Q&A message appears in Teacher Q&A panel
- ☐ Broadcast message from Teacher appears in Student Panel E

Notes / Issues:

Step 11 — End Session (Panel C)

When the lesson is complete, the teacher ends the session from Panel C. The session log now includes the full AI interaction history.

Instructions:

- In the Teacher window, Panel **C**, click **End Session**
- Confirm the dialog that appears

The session log is saved automatically to:

```
/Users/yahyanazer/Dropbox/TchAIClass/Development/sessions/logs
```

The log file includes:

- All students who joined and their connection times
- Tools that were pushed
- Every AI interaction — student name, mode, question, and answer summary

Verification:

☐ Session ended confirmation appears on screen
☐ Session log file saved in the sessions/logs folder
☐ Terminal shows `[DEBUG] Session ended`
☐ Start a Session card reappears in Teacher Panel A
☐ Session log JSON contains an `ai_log` section

Notes / Issues:

Problem	Cause	Fix

Troubleshooting

Problem	Cause	Fix
`Address already in use`	AirPlay still on	Repeat Step 1
Blank teacher page	File missing from folder	Confirm all files are in /Users/yahyanazer/Dropbox/TchAIClass/Dev
Student cannot connect	Wrong URL	Use IP address, not `localhost`
Key not accepted	Session not started	Teacher must click START SESSION first
Tool not appearing in student	Not pushed	Click Push to All Students again in Panel C
Roster not updating	Network issue	Student should refresh and rejoin with same key
`Anthropic AI - DISABLED`	No API key	Check `.env` file has a valid `ANTHROPIC_API_KEY`
AI panel shows disabled message	AI off on server	Restart server after adding API key to `.env`
AI answer is slow	API latency	Normal — Claude usually responds in 2–5 seconds
AI gives irrelevant answer	No instruction set	Teacher should set an AI Instruction in Step 6

Overall Feedback Form

Overall Rating:

- ☐ Works perfectly — ready to use
- ☐ Works with minor issues — small fixes needed
- ☐ Needs fixes before use

AI Help Rating:

- ☐ AI answers were accurate and helpful
- ☐ AI answers were mostly helpful but needed improvement
- ☐ AI answers were not useful for this lesson

Top Issue or Suggestion:

_____

_____

```
Tested by : Yahya Nazar

Version   : V01.5

Path      : /Users/yahyanazer/Dropbox/TchAIClass
```

Field	Value
Tested by	Yahya Nazar
Date	_____
Version	V01.5
Project Path	/Users/yahyanazer/Dropbox/TchAIClass

Version History

Version	Date	Description
V00	2026-06-08	Static HTML prototype — no server
V01	2026-06-10	Local WiFi server — Flask + SocketIO
V01.5	**2026-06-11**	**AI Help added — Claude integration via Anthropic API**
V02	TBD	Cloud deployment via Render.com
V03	TBD	Production hosting on tchai class.com