■ Lichess Puzzle Trainer
User Manual

A single-file web application for training chess tactics using the Lichess puzzle database offline.

Application file: **puzzles.html**

Puzzle data: local CSV files split by difficulty

Document version: 1.0

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1. Introduction

Lichess Puzzle Trainer is a self-contained HTML application that lets you practise chess tactics using puzzles from the public Lichess database. After you prepare local CSV files (by difficulty), you can train fully offline—no Lichess account and no continuous internet connection are required.

The app runs entirely in your web browser. Open the file **puzzles.html** (double-click or drag into Chrome, Edge, or Firefox). All puzzle logic uses the chess.js library; piece graphics are embedded SVG images.

1.1 Main features

- Offline training from local CSV puzzle files
- Theme filter: Mixed, Opening, Middlegame, Endgame
- Five difficulty bands by puzzle rating (ELO)
- Built-in Download & Split tool to build CSVs from the official Lichess database
- Click-to-move board with legal-move hints
- Hint, full Solution playback, Reset, and Lichess Analysis link
- Side to move always shown at the bottom of the board
- Optional screen wake lock to reduce display sleep during training

1.2 What you need

- A modern desktop browser (Chrome or Edge recommended for Download & Split)
- The file **puzzles.html**
- Puzzle CSV files for the difficulties you want (see section 3)
- For Download & Split: a stable network and enough free disk space

Mobile browsers can load existing CSVs and train, but creating the database split is more reliable on a desktop computer.

2. Getting Started

2.1 Open the application

Locate **puzzles.html** on your computer and open it in a browser. You should see the title “Lichess Puzzle Trainer” and a settings card with Theme, file picker, and Download & Split.

2.2 Quick start (if you already have CSV files)

- Set **Theme** (use Mixed for the widest selection).
- Under **Puzzle file (difficulty)**, choose one CSV (e.g. normal_1601-2000.csv).
- Wait until the status shows that puzzles were loaded; the board appears automatically.
- Solve the position by clicking the piece, then the destination square.
- Use Next Puzzle, Hint, Solution, Reset, or Load CSV as needed.

2.3 Quick start (no CSV files yet)

Use **Download & Split** (section 3) to download the official Lichess puzzle dump, split it into five difficulty files, and save them to a folder of your choice. Then follow section 2.2.

3. Preparing Puzzle Files

3.1 Difficulty bands

Puzzles are grouped by Lichess puzzle rating. The app expects the following file names (produced by Download & Split):

File name	Rating range	Label
easiest_under1200.csv	ELO < 1200	Easiest
easy_1201-1600.csv	1201 – 1600	Easy
normal_1601-2000.csv	1601 – 2000	Normal
hard_2001-2400.csv	2001 – 2400	Hard
hardest_over2400.csv	ELO > 2400	Hardest

You may also use older names such as **puzzles_normal_1601-2000.csv**; the app loads any valid Lichess puzzle CSV. Theme filtering is applied after the file is read.

3.2 Download & Split (built into the app)

On the start screen, the card **Download & Split** fetches the official compressed database from database.lichess.org, decompresses it on the fly, and writes up to N puzzles into each of the five difficulty files.

- **Puzzles per difficulty CSV** — default is chosen from reported device memory when possible (e.g. 15 000 on low-RAM devices, 100 000 on typical desktops). You can change this number (1 000–500 000).
- Click **Download & Split**.
- If the browser supports it, choose a **folder** where the five files will be saved. Existing files with the same names are overwritten.
- If folder selection is unavailable, the browser downloads the five files to your usual download location.
- Progress text shows download size, rows scanned, and how many puzzles were collected per band.

The process streams data so the full uncompressed database is not held in RAM. You still need a stable connection (~300 MB download) and a desktop browser for best results.

3.3 CSV format

Files follow the Lichess public puzzle CSV schema:

```
PuzzleId, FEN, Moves, Rating, RatingDeviation, Popularity, NbPlays, Themes, GameUrl, …
```

The **FEN** is the position before the opponent's setup move. The **Moves** field is a space-separated list of UCI moves; the first move is that setup move, and the rest is the solution line.

4. Training Interface

4.1 Board orientation

The side to move is always placed at the **bottom** of the board (White at the bottom when White to move; Black at the bottom when Black to move). There is no separate orientation label.

4.2 Making moves

- Click a piece of the side to move. Legal destination squares are marked with dots.
- Click the destination square to enter the move.
- Only the moves that follow the official solution line are accepted.
- After a correct player move, the opponent's reply is played automatically when the solution continues.

• When the full solution is completed, the status shows a success message.

4.3 Rating display

The puzzle's Lichess rating is shown under the board, right-aligned (for example "Rating: 1850"). Puzzle ID, play counts, and theme tags are not shown in the panel.

4.4 Buttons

Control	Action
Hint	Highlights the origin of the next solution move and marks the destination with a ring.
Solution	Plays the remaining solution moves on the board (about 0.9 s per half-move).
Analyze	Opens the current position in the Lichess analysis board in a new tab.
Reset	Restores the starting position of the current puzzle.
Next Puzzle	Loads the next puzzle from the local pool (shuffled on load).
Load CSV	Returns to the start screen to change theme or select another file.

4.5 Theme filter

Before loading a file, choose a theme:

- **Mixed** — no theme filter; all puzzles in the CSV may be used
- **Opening** — puzzles tagged with the opening theme
- **Middlegame** — middlegame-tagged puzzles
- **Endgame** — endgame-tagged puzzles

The app loads up to several hundred matching puzzles into an in-memory pool and shuffles them. When the pool is empty, use **Load CSV** to load again (optionally with another theme or file).

5. Tips and Best Practices

- Start with Easy or Normal if you are unsure of the right level; check the rating under the board.
- Use Hint sparingly—try to calculate before revealing the key square.
- Solution is ideal for reviewing lines you missed; then Reset and try to replay the idea yourself.
- Analyze is useful when you want an engine evaluation or to explore alternatives on Lichess.
- Keep CSV files on local disk so the browser can read them quickly.
- For Download & Split, prefer Wi■Fi and leave the tab open until the status says "Done".

6. Troubleshooting

6.1 Nothing happens after selecting a CSV

Ensure you are using a current copy of puzzles.html. Watch for a status message such as "Reading …" or an error under the file picker.

6.2 "CSV seems empty" or read errors

- Confirm the file is decompressed **.csv**, not **.zst**.
- Very large files on phones may fail; try desktop or a smaller split count.
- The file must use the Lichess puzzle header (PuzzleId, FEN, Moves, …).

6.3 No puzzles matched the theme

Switch Theme to **Mixed**, or pick another difficulty file. Some bands contain few opening-tagged puzzles.

6.4 Download & Split fails

- Use Chrome or Edge on a computer; allow the site to ask for a folder.
- Check disk space and network; the download is about 300 MB.
- Lower “Puzzles per difficulty CSV” if the browser runs out of memory.
- If the folder dialog was cancelled, run Download & Split again.

6.5 Solution stops early

The app plays every UCI move in the CSV solution line after the setup move. If a move cannot be applied, an error is shown instead of “Solved”. Use Reset and try Solution again, or skip with Next Puzzle.

6.6 Screen goes to sleep

The app requests a screen wake lock where the browser allows it. If the screen still dims, adjust your device’s display timeout or keep the tab focused.

7. Privacy, Licensing, and Credits

Puzzle content comes from Lichess and is published under a Creative Commons CC0 licence. This trainer is an independent tool and is not affiliated with Lichess.org.

When you only use local CSV files, puzzle solving does not require network access. Download & Split contacts database.lichess.org. The Analyze button opens lichess.org in a new tab. Chess piece artwork is based on the CBurnett set commonly used with Lichess-style boards.

No personal account is created by this application. Files you save remain on your device.

8. Quick Reference

8.1 File checklist

- puzzles.html — the application
- easiest_under1200.csv, easy_1201-1600.csv, normal_1601-2000.csv, hard_2001-2400.csv, hardest_over2400.csv — data
- puzzles.pdf — this manual

8.2 Typical workflow

```
Open puzzles.html → (optional) Download & Split → Theme → choose CSV → solve → Next / Hint / Solution → Load CSV to switch set.
```

End of User Manual — Lichess Puzzle Trainer