Coderush ’25 - Web Hackathon: Typing Arena

Objective

Build **Typing Arena**, a simple web app where users practice typing and race others. It must be easy to use, work offline, and be completed in a 10-hour hackathon.

Core Problem Statement

Create a **Progressive Web App (PWA)** that lets users:

1. **Practice** typing with drills and get instant feedback.
2. **Compete** in live races and watch others.
3. **Analyze** performance with charts, badges, and sharing.

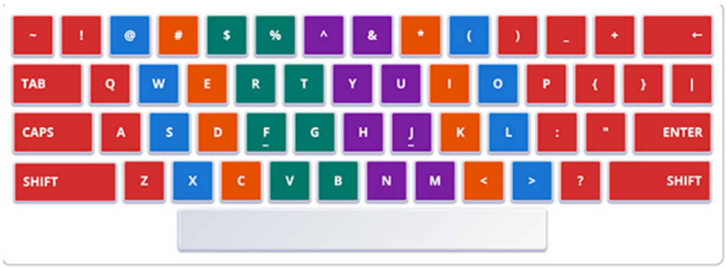
Must-haves:

- Installable (via `manifest.json`)
- Works offline for practice drills
- Responsive on both mobile and desktop

Detailed Requirements

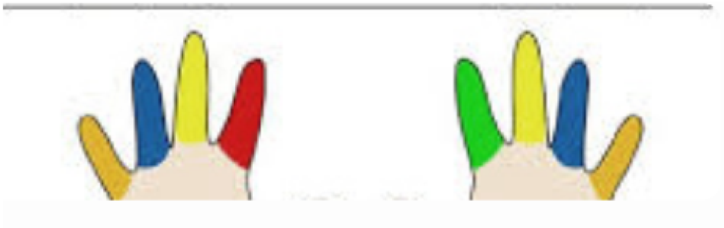
Part 1: Practice Module (Typing Playground)

1. **Visual Keyboard & Fingers**
   - Draw the keyboard using CSS (no images). (see Figure 1)


~ ! @ # $ % ^ & * ( ) _ + ←
TAB Q W E R T Y U I O P { } |
CAPS A S D F G H J K L : " ENTER
SHIFT Z X C V B N M < > ? SHIFT

(Figure 1)

   - Draw 10 colored fingers with CSS or Bézier curves (Use of images is prohibited). Highlight the finger for the next letter. (see Figure 2)



(Figure 2)

   - **Highlighting the pressed key:** If a key is currently pressed, highlight that key in *color1* if correct, or in *color2* if incorrect.

2. **Typing Area**
   - Show 2–5 lines of words from a given list, with a blinking cursor.
   - **Letter highlighting:**
     - *color1* if typed correctly
     - *color2* if typed incorrectly
     - *color3* if not yet typed
3. **Round Options:** Choose lengths of 15 s, 30 s, 60 s, or 120 s.
4. **Live Stats:** Display real-time WPM, accuracy %, error count, and time left.
5. **End Screen:**
   - Show final WPM, accuracy, total letters, correct/incorrect counts, and a small WPM-over-time graph.
   - Include "Restart" and "Share" buttons. Remember the last chosen time.
6. **Adaptive Difficulty:** Auto-switch between Beginner, Intermediate, and Advanced based on performance.

Part 2: Competition Module (Real-Time Racing)

1. **Lobby & Matchmaking**
   - Create or join public/private rooms (optional password).
   - Show player avatars and estimated WPM.
2. **Race Flow**
   - 3-second countdown.
   - Live progress bars or % complete for each player.
   - Spectator mode to watch races.
3. **Leaderboard**
   - Post-race rankings.
   - Daily top WPM list, highlighting the current user.

Part 3: User Accounts & Data

1. **Login**
   - Use OAuth 2.0 (e.g. Google or GitHub).
   - Only logged-in users can start races or save stats.
2. **Save Stats**
   - Store each round's data: time, keystrokes, WPM, accuracy.
3. **Dashboards**
   - Daily Leaderboard: Top scores with user rank.
   - Profile Page: Change display name and view graphs for day, week, month, and overall.

Part 4: Analytics & Sharing

1. **Performance Dashboard**
   - Line charts for WPM and accuracy over time.
   - Keyboard heatmap of key-press frequency.
   - Badges (e.g. "Spesedster" for 80+ WPM).
2. **Export & Share**
   - Download stats as CSV.
   - Share results or badges to social media.
3. **Admin Panel (Optional)**: Manage passages and leaderboards.

Part 5: PWA & Deployment

- Include `manifest.json`.
- Cache assets for offline practice.
- Responsive design for phones and desktops.
- Deploy anywhere and share your code repository.

Part 6: Code Writing

- **Code Challenges**: Support typing drills in languages like Python, JavaScript, Java, or C++. Preserve formatting and highlight syntax.

Tech Guidelines

- Allowed: any full-code framework (e.g. React, Vue, Svelte, Django, Rails).
- Prohibited: website builders or no-code platforms.

Judging Criteria

- Ease of Use: simple UI/UX, installable PWA, offline support
- Core Features: practice drills, real-time racing, analytics
- Creativity: unique twists, gamification, localization
- Technical Quality: code quality, testing, performance, security
- Deployment & Documentation: live demo, README, accessibility
- Stretch Goals: bonus features implemented

Logistics & Deliverables

- Duration: 10 hours in total
- Submit:
  - Live app URL
  - Add the code to Github Classroom
  - Optional demo video

Good luck—and happy typing!