NileTech Learning Platform Documentation

1. Project Overview

Project Name: NileTech Learning Platform.
Tagline: "Flowing like the Nile, growing like the savanna – making technology learning simple, practical, and accessible for everyone."

Mission:
NileTech is a youth-led platform aimed at inspiring and empowering the young people of South Sudan through technology education. Just as the Nile River brings life and opportunity across our land, NileTech brings knowledge and digital skills to every learner. We believe that everyone, regardless of background, should have the chance to learn, grow, and succeed in today's digital world.

Vision:
We envision a South Sudan where technology knowledge is within everyone's reach, enabling youth to create, innovate, and shape a brighter future for themselves and their communities.

2. Problem Statement

In South Sudan, many young people face serious challenges in accessing digital skills education, even though these skills are increasingly essential for employment, entrepreneurship, and meaningful participation in the modern economy. Digital skills training programs are often expensive, placing them beyond the reach of most youth. At the same time, support for youth-focused technology education from schools and other institutions remains very limited, leaving a large gap in practical learning opportunities.

Learning is further complicated by unreliable electricity and poor internet connectivity, which make consistent and uninterrupted study difficult. Although some ICT initiatives exist, many of them focus primarily on infrastructure development rather than on teaching practical, hands-on digital skills. As a result, young people often lack the real-world experience needed to apply technology effectively.

In addition, many available learning resources are not designed with the local context in mind. This reduces their relevance and makes it harder for learners to relate to the content or apply it to their daily lives and local job markets.

Our goal is to address these challenges by creating an accessible, practical, and engaging digital learning platform. This platform will provide young South Sudanese with opportunities to learn, practice, and apply digital skills in a supportive environment. By building confidence and practical competence, we aim to empower youth to take advantage of opportunities in the growing digital economy and actively shape their own futures.

3. Project Scope

NileTech is designed to deliver a learning experience that is practical, supportive, and easy to access for young people with different levels of digital exposure. The platform focuses on the following key areas:

Digital Skills Training:
NileTech offers structured courses in coding, web development, and basic IT skills, designed in a simple and step-by-step manner. The content emphasizes practical learning, allowing learners to build real skills that can be applied to employment, freelancing, or entrepreneurship, even if they are complete beginners.

Mentorship & Support:
Learners will have opportunities to connect with experienced mentors who can provide guidance, motivation, and career advice. This support system helps learners overcome challenges, gain confidence, and make informed decisions about their learning and professional paths.

Feedback & Progress Tracking:
The platform includes tools that allow learners to track their progress over time, receive feedback on their work, and identify areas for improvement. By clearly showing milestones and achievements, learners are encouraged to stay motivated and committed to their learning journey.

Accessible Platform:
NileTech is built as a web-based, mobile-friendly platform to ensure wide accessibility.

Interactive lessons are optimized for low-bandwidth environments, making it possible for learners with limited internet connectivity to access quality digital education anytime and anywhere.

Target Users:

- Youth (15–30 years) across urban and peri-urban areas of South Sudan.
- Displaced and underserved communities with limited access to formal education.

4. System Architecture

1. Entry / Landing (index.php)

- Determines login state via PHP sessions.
- Provides navigation to modules, mentorship, feedback, and authentication pages.

2. Authentication (signup.php, login.php)

- Input validation: sanitizeInput(), isValidEmail().
- Session management via session.php.

3. Database (db.php)

- Connection helpers: getDBConnection(), closeDBConnection().
- Tables: users, user_progress, feedback, mentor_contacts.

4. Modules & Lessons (module.php, lesson.php)

- Users can access lessons by module.
- Interactive lessons use CodeMirror editor; progress tracked via progress.php.

5. Mentorship (mentorship.php)

- Lists mentors, allows learners to send messages.

- Stored in mentor_contacts for admin review.

6. Feedback (feedback.php)

- Users submit feedback via form or modal.
- Validated and stored in feedback table; optional email notifications via functions.php.

7. Dashboard & Profile (dashboard.php, profile.php)

- Displays progress per module.
- Allows profile updates and shows welcome message.

8. Security & API

- All API endpoints require session authentication.
- Data access via secure DB helpers; inputs sanitized server-side.

5. Key Features

User Authentication

Secure signup and login with session-based access control.

Module-Based Lessons

Interactive lessons organized by modules with a built-in code editor.

Progress Tracking

Tracks module completion and displays progress on the dashboard.

Mentorship

Allows learners to contact mentors for guidance and support.

Feedback System

Enables users to submit feedback to improve content.

Admin Oversight

Admins review mentorship requests and feedback.

Responsive UI

Optimized for mobile use and low-bandwidth connections.

6. Testing

PHPUnit Testing:

- Test coverage includes DB connections, lesson progress updates, and feedback submission.
- Results: *(Include table of tests and pass/fail outcomes)*

Manual Testing:

- Functionality checked for login/signup, module access, interactive coding, feedback submission, mentorship form, and profile updates.

8. Documentation / References

- Database schema: database.sql
- Session and authentication helpers: session.php, db.php
- UI assets: style.css, script.js
- Interactive editor: CodeMirror scripts included in lesson.php
- APIs: progress.php, stats.php, mentor-contact.php, feedback.php

9. Future Enhancements

- Mobile app integration for offline lessons.
- Gamification to encourage course completion.
- Expanded content for advanced digital skills (AI, data analysis).
- Analytics dashboard for admins to monitor engagement and outcomes.