

Learn2Code Analysis

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Defined Project Scope :-

1. User Management Module

Scope:

This module handles all user-related activities, from registration and authentication to profile customization. It supports multiple roles (students, parents, instructors, admins) with tailored interfaces and functionality.

Key Responsibilities:

- Registration System:
- Parent/guardian registration for children.
- Age verification (6–17 years).
- Multi-role support.
- Profile creation with age-appropriate UI.

Authentication:

- Secure login/logout.
- Password recovery.
- Two-factor authentication for parents.

Profile Management:

- Link child profiles to parent accounts.
- Customization by age group.
- Progress dashboards for performance tracking.
- Fun avatar customization for kids.

Impact on Project:

This ensures a safe, personalized, and age-appropriate experience while meeting security requirements for minors.

2. Course Management Module

Scope:

Manages the creation, structuring, and delivery of learning content across different age groups and skill levels. Ensures that the right content is delivered to the right audience.

Key Responsibilities:

- Age-Specific Learning Tracks:
- 6–9 years: Visual programming (Scratch, Blockly).
- 10–13 years: Game development (Python, JavaScript).
- 14–17 years: Web/mobile development, advanced concepts.

Course Structure:

- Levels: Beginner, Intermediate, Advanced.
- Session scheduling.
- Interactive content (videos, quizzes, projects).

Content Management:

- Upload/download learning materials.
- Age-appropriate content filtering.
- Gamification elements for engagement.

Impact on Project:

Creates a dynamic, engaging learning environment and allows scalability by adding new courses or tracks.

3. *Learning & Progress Tracking Module*

Scope:

Enables tracking of student engagement, skill acquisition, and completion of courses.

Facilitates communication of progress to parents and awarding of certifications.

Key Responsibilities:

- Enrollment System:
- Course registration.
- Prerequisite checking.
- Class scheduling.

Progress Monitoring:

- Completion tracking.
- Skill assessments.
- Badge/points system.

Certification:

- Automated certificate generation.
- Shareable digital achievements.
- Detailed progress reports for parents.

Impact on Project:

Promotes transparency and motivation by giving students and parents clear visibility into progress and achievements.

4. *Payment & Subscription Module*

Scope:

Manages financial transactions, subscription models, and billing for access to courses and resources. Ensures secure and flexible payment options.

Key Responsibilities:

- Subscription Plans:
- Monthly/quarterly/annual plans.
- Family discounts.
- Free trial options.

Payment Processing:

- Secure payment gateway integration.
- Multiple payment methods.
- Receipt generation.

Billing Management:

- Invoice history.
- Renewal reminders.
- Cancellation and refund processing.

Impact on Project:

Provides sustainable revenue generation while giving users convenient payment options and transparent billing.

Main Modules:-

1. User Management Module

Features:

- Registration System
- Parent/guardian registration for children
- Age verification (6-17 years)
- Multi-role support (students, parents, instructors, admin)
- Profile creation with age-appropriate interfaces
- Authentication
- Secure login/logout
- Password recovery
- Two-factor authentication for parents
- Profile Management
- Child profiles linked to parent accounts
- Age-based profile customization
- Progress dashboards
- Avatar customization for kids

2. Course Management Module

Features:

- Age-Specific Learning Tracks
- 6-9 years: Visual programming (Scratch, Blockly)
- 10-13 years: Game development (Python, JavaScript)
- 14-17 years: Web/mobile development, advanced concepts
- Course Structure
- Modular levels (Beginner, Intermediate, Advanced)
- Session scheduling
- Interactive materials (videos, quizzes, projects)
- Content Management
- Upload/download materials
- Age-appropriate content filtering
- Gamification elements

3. *Learning & Progress Tracking Module*

Features:

- Enrollment System
- Course registration
- Prerequisite checking
- Class scheduling
- Progress Monitoring
- Completion tracking
- Skill assessment
- Badge system
- Certification
- Automated certificate generation
- Shareable achievements
- Progress reports for parents

4. *Payment & Subscription Module*

Features:

- Subscription Plans
- Monthly/quarterly/annual options
- Family discounts
- Free trial periods
- Payment Processing
- Secure payment gateway integration
- Multiple payment methods
- Receipt generation
- Billing Management
- Invoice history
- Renewal reminders
- Cancellation processing

Main Features:-

1. User Management

- Parent/guardian registration with child linking.
- Age verification (6–17 years).
- Multi-role support (student, parent, instructor, admin).
- Secure authentication (login/logout, password recovery, 2FA for parents).
- Profile customization and progress dashboards.

2. Course Management

- Age-specific learning tracks (6–9, 10–13, 14–17 years).
- Modular course levels (Beginner, Intermediate, Advanced).
- Session scheduling and interactive materials (videos, quizzes, projects).
- Content upload/download with age-appropriate filtering.
- Gamification for engagement.

3. Learning & Progress Tracking

- Course enrollment with prerequisite checks.
- Progress monitoring (completion, skill assessment, badges).
- Automated certificates and shareable achievements.
- Progress reports for parents.

4. Payment & Subscription

- Flexible subscription plans (monthly, quarterly, annual, family discounts, free trial).
- Secure payment gateway with multiple methods.
- Receipt generation, invoice history, and renewal reminders.
- Cancellation and refund processing

User Stories:-

- *User Management Module*

1. As a parent, I want to register myself with email and password so that I can access the system
2. As a parent I want to register my child's account with age, email and credential so that I can manage their access
3. As a parent, I want my child's profile linked to my account so that I can monitor and control their usage
4. As a system I want verify that a child account uses a unique email so that duplicate accounts are prevented
5. As a system I want to verify the child's age (6–17 years) so that the correct learning track is assigned.
6. As a student, I want to create my profile with an avatar so that it feels personal and engaging
7. As a user, I want to log in securely so that my account is protected.
8. As a system I want to verify accounts' roles are valid [student – parent- instructor]
9. As a parent, I want two-factor authentication so that my data and my child's data are secure
10. As a student, I want to see my dashboard so that I can monitor my own progress.
11. As a system, I want to expire OTPs for email confirmation after a limited time (ex: 30s) so that account verification remains secure.
12. As an instructor, I want to see my dashboard so that I can manage courses
13. As an admin, I want user accounts to have valid roles (student, parent, instructor) so that access control is enforces
14. As a user, I want to reset my password if I forget it so that I can regain access to my account
15. As a system, I want to expire OTPs for password reset after a limited time(ex: 30s) so that unauthorized access is prevented
16. As a user, I want to upload my profile (name, avatar, contact info) so that my account details remain accurate and personalized

17. As an admin, I want to suspend or freeze accounts in case of misuse so that the system remains safe

- *Course Management Module*

1. As a student aged 6–9, I want to learn using visual programming tools so that coding feels easy and fun.
2. As a student aged 10–13, I want to take game development courses so that I can learn programming through games.
3. As a student aged 14–17, I want to access web and mobile development courses so that I can build real-world applications.
4. As an instructor, I want to upload videos, quizzes, and projects so that my students have interactive materials.
5. As a parent, I want course content filtered by age so that my child is only exposed to appropriate material.
6. As a student, I want gamified challenges so that learning stays fun and motivating.
7. As a system, I want to schedule classes and sessions so that students know when to attend.
8. As a parent, I want to be notified about my child's attendance so that I can ensure they are participating
9. As a student, I want to search and filter courses so that I can find the most relevant ones easily
10. As a student, I want to submit assignments so that I can practice my skills
11. As an instructor, I want to provide feedback on assignments so that students can improve
12. As a parent, I want to cancel my child's course enrollment so that I can change their learning path if needed
13. As a parent, I want to edit my child's enrolled course and switch to another one after checking prerequisites so that I can choose a more suitable course

- *Learning & Progress Tracking Module*

1. As a student, I want to enroll in courses so that I can start learning immediately.
2. As a system, I want to check prerequisites before enrollment so that students join courses at the right level.
3. As a student, I want to track my course completion so that I know how far I've progressed.
4. As a system, I want to update a course status from "In Progress" to "Completed" when requirements are met so that progress is tracked properly
5. As a student, I want to earn badges when I achieve milestones (such as completing a course or scoring high in a quiz) so that I stay motivated
6. As a parent, I want to receive reports on my child's progress so that I can monitor their improvement.
7. As a parent, I want to compare my child's current progress with previous reports so that I can measure improvement
8. As a student, I want to receive a certificate after finishing a course so that I can showcase my achievement.
9. As an instructor, I want to see student performance data so that I can give targeted feedback.

- *Payment & Subscription Module*

1. As a parent, I want to choose from different subscription plans (monthly, quarterly, annual) so that I can select one that fits my budget.
2. As a parent, I want family discounts so that I can enroll multiple children at a lower cost.
3. As a parent, I want a free trial option so that I can test the platform before paying.
4. As a parent, I want to pay through different methods so that I can use my preferred option.
5. As a parent, I want a digital receipt after payment so that I have proof of purchase.
6. As a parent, I want to see my billing history so that I can track past payments.
7. As a parent, I want renewal reminders so that my child's learning is not interrupted.
8. As a parent, I want to cancel my subscription if needed so that I have full control over payments.
9. As a parent, I want to request a refund for canceled subscriptions within an eligible period so that I feel secure about my payments
10. As a parent, I want to change my subscription plan (upgrade or downgrade) so that it fits my changing needs
11. As a system, I want to send payment failure notifications so that parents can retry and maintain uninterrupted service