

Access to Quality Education: Minnow

Lab 2

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## **1 Introduction**

This section will explain the purpose, scope and the important definitions, acronymns and abbreviations that are associated to Minnow.

### **1.1 Purpose**

This document provides detailed specifications and requirements for Minnow, an online source of materials and modules to assist teachers and students.

### **1.2 Scope**

Students may not be provided with the necessary materials or teaching methods needed to understand subject areas in school. Teachers may also be missing the necessary materials they need to reach all their students in an effective manner. Minnow will branch into these missing areas in order to provide the students and the teachers with the opportunity to succeed.

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### 1.3 Definitions, Acronyms, and Abbreviations

**Accessibility Tools** – Features such as text-to-speech, closed captioning, and visual aids that support diverse learners.

**Gamification** – The use of interactive lessons, quizzes, and rewards to enhance student engagement.

**Multimodal Learning** – An approach that integrates various forms of content delivery, including visual, auditory, and interactive methods.

**Personalized Learning** – Adaptive lesson plans that adjust based on a student's strengths and weaknesses.

**Role-Based Access** – A security feature that ensures users (students, teachers, parents) have appropriate permissions based on their role.

**Secure Authentication** – Measures to protect user privacy and maintain data security.

**Virtual Tutoring** – Online support resources designed to assist students outside of traditional classroom settings.

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#### 1.4 References

- “Challenges of Traditional Schooling: World Schools.” *World Schools - Find the Best International Schools Worldwide*, 17 Apr. 2024, <https://world-schools.com/challenges-of-traditional-schooling/>.
- National Center for Education Statistics. *The Condition of Education 2024*. U.S. Department of Education, Institute of Education Sciences, 2024,  
<https://nces.ed.gov/pubs2024/2024144.pdf>.
- Oudat, Qutaibah, and Mohammad Othman. *Embracing Digital Learning: Benefits and Challenges of Using Canvas in Education*. 06 2024,  
<https://doi.org/10.5430/jnep.v14n10p39>.
- “What Is the Problem with Traditional Education Methods? - High School of America.” *High School of America - High School Diploma Online | Online High School and Homeschool Curriculum*, 3 Aug. 2022, [www.highschoolofamerica.com/why-traditional-educationmethods-are-becoming-outdated/](http://www.highschoolofamerica.com/why-traditional-educationmethods-are-becoming-outdated/).
- Manjaly, Stalin J. “Duolingo Accepted Universities in USA for 2024 Intake.” LeapScholar, 13 Nov. 2024, <https://leapscholar.com/blog/duolingo-accepted-universities-in-usa/>.
- “Learn a Language for Free.” Duolingo, 11 Feb. 2025, <https://www.duolingo.com/>.
- The unrealized promise of high-quality instructional materials*. NASBE. (n.d.).  
<https://www.nasbe.org/the-unrealized-promise-of-high-quality-instructional-materials/>.
- From the desk of the CEO: Changing the systems that perpetuate poverty and low literacy*. ProLiteracy. (n.d.). <https://www.proliteracy.org/news/from-the-desk-of-the-ceo-changing->

Doan, Sy, and Anna Shapiro. "Do Teachers Think Their Curriculum Materials Are Appropriately Challenging for Their Students?" *RAND*, 11 Dec. 2023,  
[www.rand.org/pubs/research\\_reports/RRA134-21.html](http://www.rand.org/pubs/research_reports/RRA134-21.html).

Team Crystal(October 06, 2025) Lab 1 – Minnow Retrieved October 28, 2025 from  
[https://mray008.github.io/CS411W\\_CrystalProject/labs.html](https://mray008.github.io/CS411W_CrystalProject/labs.html)

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## 1.5 Overview

Section 2 of this document will provide an overview of Minnow.

Section 3 contains the specific requirements, organized by feature.

## 2 Overall Description

This section will provide perspective on the Minnow and the functions that Minnow contains. It will also touch on the two types of accounts associated with the users of Minnow.

### 2.1 Product Perspective

Minnow is a website that provides students and teachers with modules in order to assist the students with learning specific subjects. It will provide materials in the form of gamified modules, with lessons on how to accomplish the goals of each module and quizzes and test in the form of games.

### 2.2 Product Functions

The Minnow website provides games inside their gamified modules; these games consist of favorites such as bingo and match and drop games. These games will act as the quizzes and tests for each module in order to reduce stress on the students. There will be two different types of accounts(student and teachers). Each type of account will have their own dashboard; teachers will have the option to assign their students with specific modules. Students will see their private dashboard where their assigned modules will be displayed.

### 2.3 User Characteristics

Minnow has two types of users: Instructors and Students. Students will be the default user, while Teachers will be provided keys for their students. To assist students with troubling areas of learning is the primary goal of the minnow software. This will be accomplished by using modules tailored to the individual students based on the difficulty of the subjects. Teachers will

have the access to assign students and view student assessments through their teacher dashboard.

#### **2.4 Constraints**

N/A

#### **2.5 Assumptions and Dependencies**

N/A

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