

# Matrix Specification

**App Name:** Matrix - A Math Worksheet Generator

## **Specification**

We want to develop an app that allows the user to generate and print out pseudo randomized math questions as a customized worksheet. The math questions will be at an elementary school level from various subtopics; such as addition, subtraction, multiplication, division, and least common multiple to name a few.

Each worksheet will be highly customizable; allowing users to choose their desired topic (and subtopic), difficulty level (easy, medium, or hard), number of questions, and the format of the question (horizontal or vertical view). Furthermore, users will have the ability to choose formatting details including worksheet title, instructor name, and font size. Once the user generates the worksheet, a single local PDF of the worksheet will be created, including an answer sheet on a separate page. The user will also have the ability to save and download this PDF. Finally, the app will store each user's information, such as personal details, user history (ex. parameters of previous worksheets created), and user scores (which can be inputted by the user).

Example UI on the next page.

Home Screen

**Matrix**

**A Math Worksheet Generator**

Username

Password

**Log in**

**Register**

**Back**

**Create A New Worksheet**

**User Profile**

**User History**

Each Topic will have an additional page with subtopics

**Back**

**Choose Topic**

Addition ⓘ

Subtraction ⓘ

Division ⓘ

Multiplication ⓘ

LCM ⓘ

...

**Back**

**Addition**

Standard ⓘ • Example  
• Grade level

Fraction ⓘ

Pictures ⓘ

...

There will be difficulty options

**Back**

**Choose Difficulty**

Easy ⓘ For example,  
easy addition  
would have 1  
number

Medium ⓘ

Hard ⓘ

**Back**

**Worksheet Customization**

Title

Number of Questions

Font Size

Question Format

Horizontal  
Vertical

**Generate Worksheet**

**Use Default Settings**

## Supplementary information

Horizontal question format:  $34 + 21 = \underline{\quad}$

Vertical question format: 
$$\begin{array}{r} 34 \\ + 21 \\ \hline \end{array}$$

Standard question type = integers only

Fraction question type = fractions only