

## How to Use this Template

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# Math Quiz for Kids

## Description

Math Quiz for Kids is a fully featured math quiz game. Test your skills in addition, subtraction, multiplication, and division! Complete the weekly challenge questions to test your skills at complex word problems.

## Intended User

Children of all ages -- anyone looking to improve their math skills.

## Features

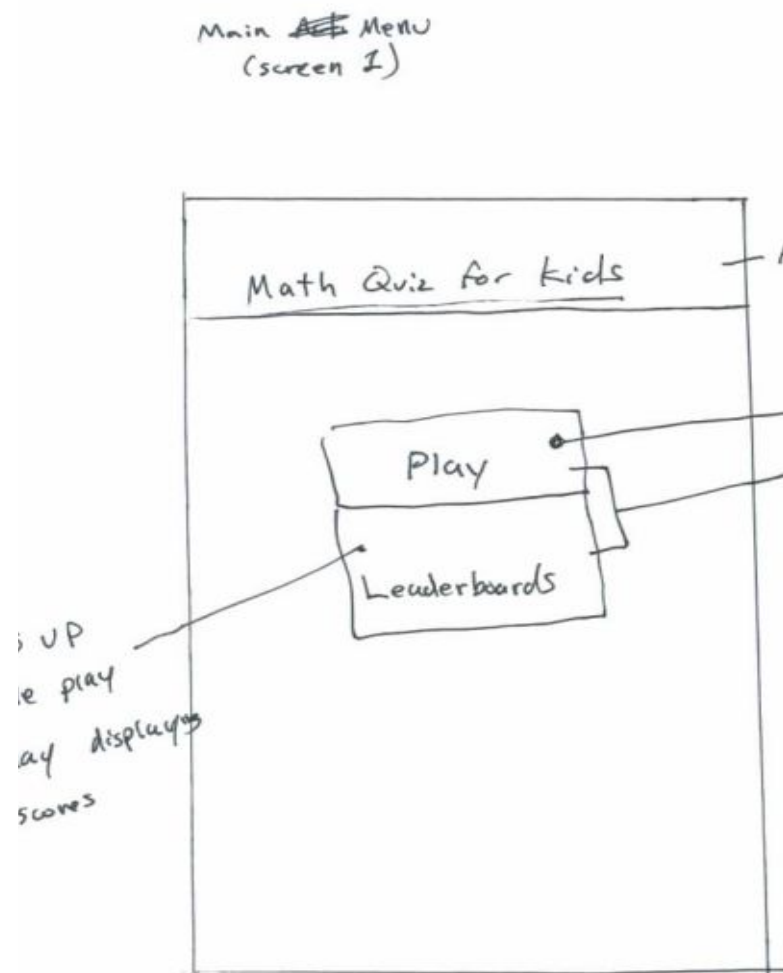
### Math Quiz

- Addition
- Subtraction
- Multiplication
- Division
- Word Problems (Pulled via JSON parsing from my website)

## User Interface Mocks

These can be created by hand (take a photo of your drawings and insert them in this flow), or using a program like Google Drawings, [www.ninjamock.com](http://www.ninjamock.com), Paper by 53, Photoshop or Balsamiq.

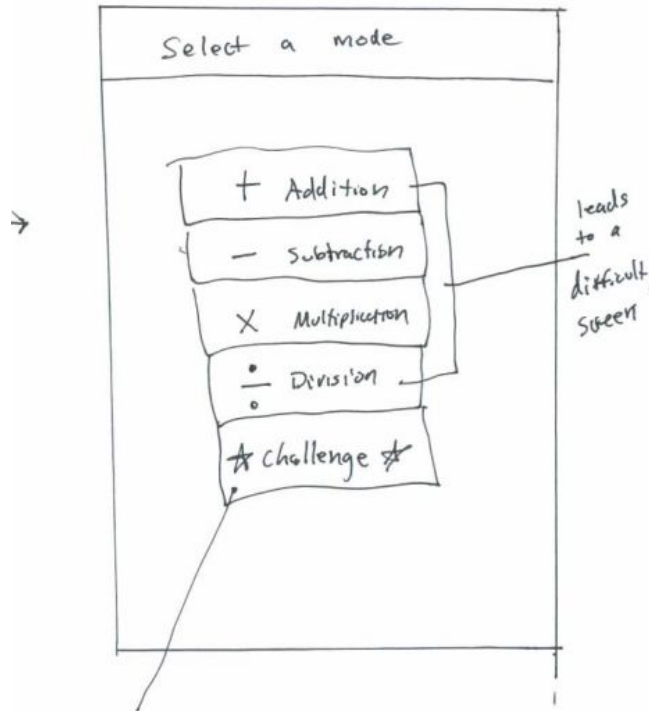
## Screen 1



Main Menu - allows for selecting play or leaderboards

## Screen 2

Play Menu  
(screen 2)



- Leads to Quiz with questions pulled from website. (Word problems)
- No additional difficulty selection

After selecting Play - choose a Quiz Mode.

### Screen 3

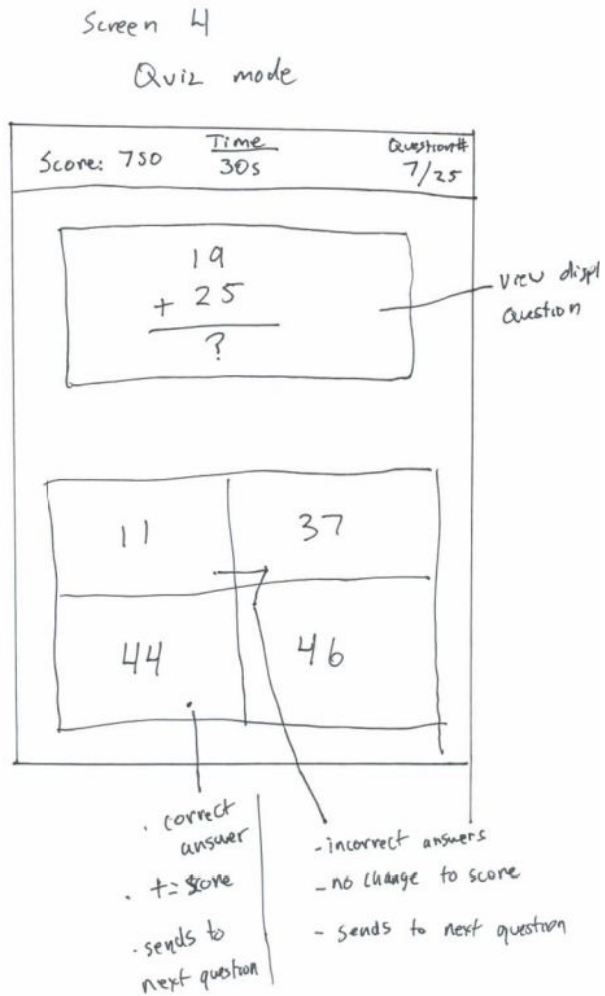
Screen 3  
Difficulty select

Addition: Choose difficulty

Easy
Medium
Hard

After selecting a quiz mode, choose difficulty.

## Screen 4



### Quiz Gameplay Screen

App bar displays score: time elapsed : questions / questions remaining

View for the math questions

4 multiple choice questions

## Screen 5

Screen 5  
Challenge Question

Score:	Time	Question #
500	60s	1/10

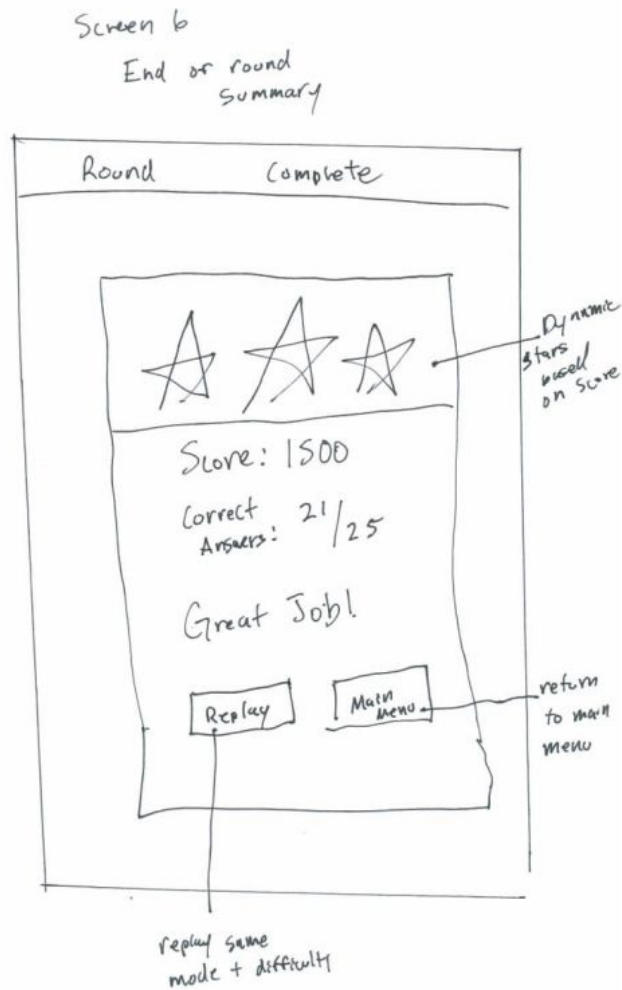
Sally has 5 sea shells. She finds 11 more while walking on Beach. She drops 3 and they break. How many does she have left?

16	7
13	9

Challenge Question Screen

Word questions retrieved from my website as json. Stored on phone using room.

## Screen 6



End of round summary screen

Dynamically generated stars based on total score

Automatically submits score to google play services leaderboards if signed in (prompts if not)

Displays an interstitial ad every 3 rounds.

Buttons to return to main menu or replay round.

## Key Considerations

How will your app handle data persistence?

Weekly challenge questions will be parsed from Json and stored with room.



**Describe any edge or corner cases in the UX.**

Once the user is in a round (series of math questions) there will be a pause menu where the user can return to main menu.

**Describe any libraries you'll be using and share your reasoning for including them.**

Retrofit -easy retrieving and parsing of json data from remote source.

Room - easy database solution for pojo data models

Picasso - ease of use for image displaying

Gson - for converting data to and from json.

**Describe how you will implement Google Play Services or other external services.**

Google Mobile Ads (admob) : will be displayed after every few rounds of gameplay.

Google Play Game Services : will keep track of high scores from gameplay via Leaderboard.

## Next Steps: Required Tasks

This is the section where you can take the main features of your app (declared above) and break them down into tangible technical tasks that you can complete one at a time until you have a finished app.

### Task 1: Project Setup

Draft the activities

Create data models for questions / answers

### Task 2: Quiz Gameplay setup

- Setup question generation
- Setup answer generation
- Setup score persistence between 'question / answer rotation'

### Task 3: Implement UI for Each Activity and Fragment

- Build UI for MainActivity
- Build UI for the quiz gameplay
- Build UI for end of round summary

### Task 4: Implement Admob

- Use my admob account to create ad units for the end of round summary screen interstitial ad
- Implement ad on end of round summary screen

### Task 5: Implement google play game services

- Have the score from a successfully completed round post to google play game services leaderboard, assuming user signs in to google play game services.

### Task 6: Setup Room and pojo question models

- Make sure CRUD and version control is implemented. Properly overwrites data when new questions are retrieved.

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#### Submission Instructions

- After you've completed all the sections, download this document as a PDF [ File → Download as PDF ]
  - Make sure the PDF is named "**Capstone\_Stage1.pdf**"
- Submit the PDF as a zip or in a GitHub project repo using the project submission portal

If using GitHub:

- Create a new GitHub repo for the capstone. Name it "**Capstone Project**"
- Add this document to your repo. Make sure it's named "**Capstone\_Stage1.pdf**"