

- R1** The application shall contain tutorials to teach various mathematical concepts
- R2** The application shall contain games to reinforce learning of mathematical concepts
  - R2.1** A game shall be composed of a series of randomly generated mathematical problems for the user to solve
    - R2.1.1** Each problem shall be composed of two operands and an operator
  - R2.2** The operator used in generating a game's problems shall be selected by the user
    - R2.2.1** The possible operators shall be addition, subtraction, multiplication and division
  - R2.3** The games' operands shall be randomly generated
  - R2.4** Each game shall have user-configurable parameters
    - R2.4.1** The game duration shall be configurable by the user
    - R2.4.2** The number of problems shall be configurable by the user
    - R2.4.3** The range of numbers shall be configurable by the user
      - R2.4.3.1** The specified range shall limit the operands when the operator is addition, subtraction or multiplication
      - R2.4.3.2** The specified range shall limit the dividend when the game type is division
  - R2.5** A game shall end when the specified duration or number of questions has been met or if the game is manually ended by the user
- R3** The application shall generate feedback for the user
  - R3.1** Data regarding the user's performance shall be collected during each game
    - R3.1.1** The number of problems answered correctly during a game shall be recorded
    - R3.1.2** The number of problems answered incorrectly during a game shall be recorded
    - R3.1.3** The amount of a user spent in a game shall be recorded
  - R3.2** Each game's collected data shall be analyzed
    - R3.2.1** The user's accuracy shall be calculated
    - R3.2.2** The user's speed shall be calculated
  - R3.3** The user's performance shall be tracked over time
- R4** The application shall store feedback in a user profile
- R5** The application shall implement a graphical user interface (GUI)
  - R5.1** The application shall show a main menu on initial launch
    - R5.1.1** The main menu shall contain buttons to user profile, games, and tutorials
  - R5.2** The GUI shall contain a tutorial section
    - R5.2.1** The tutorial screen shall display high-level tutorial categories for the user to choose from

- R5.2.2** The tutorial categories shall display drop-downs of their contained tutorials upon being tapped
- R5.2.3** The user shall be taken to the appropriate tutorial upon tapping a contained tutorial
  - R5.2.3.1** The tutorial shall be a text-based activity with scrolling
  - R5.2.3.2** The user shall be able to navigate back to other menus from the tutorial
- R5.3** The GUI shall contain a games section
  - R5.3.1** The GUI shall provide a game select screen for the user to select from the application's games
    - R5.3.1.1** The game select screen shall display categories for the user to chose from
    - R5.3.1.2** The user shall be taken to the game options screen upon tapping a catagory
  - R5.3.2** The GUI shall provide a game options screen for user to configure the game parameters
    - R5.3.2.1** The game options screen shall display options for the user to manipulate game time duration
    - R5.3.2.2** The game options screen shall display options for the user to specify the number of questions
    - R5.3.2.3** The game options screen shall display options for the user to specify whether or not scores will be shown during the game
    - R5.3.2.4** The user shall be taken to the appropriate game upon tapping a game start button
  - R5.3.3** The GUI shall provide a way for the user to play the application's games
    - R5.3.3.1** The in-game screens shall contain a button to end the current game
- R5.4** The GUI shall contain a section for viewing the user's statistics
  - R5.4.1** The statistics screen shall display high-level statistics categories for the user to view
    - R5.4.1.1** The high-level categories shall be displayed in a scrollable, horizontal bar
  - R5.4.2** The information within each category shall be presented graphically