Mobile App Development
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Grad Project Plan

Description:

This iPad app will be designed for first graders to practice their spelling words in three different ways. This app will be a tab view app with the three different spelling word games as three tabs. For each game, before the game begins, the student will be asked to enter their name. This name will be attached to that student's score so that scores among different students can be compared.

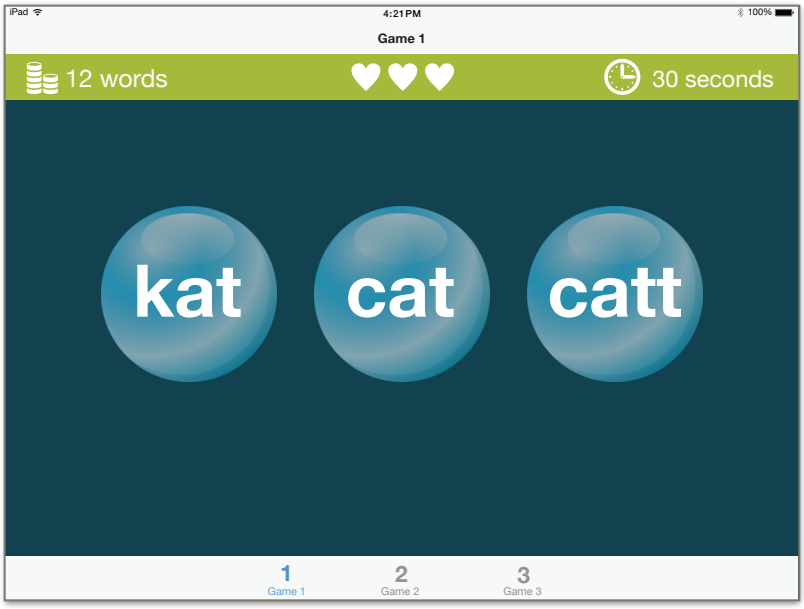
In the first spelling word game, there will be three different spellings of a first grade spelling word, each in a bubble. One of these words will be spelled correctly and two will be spelled incorrectly. The student's goal is to tap the word that is spelled correctly and to get through as many words as they can in a certain amount of time. If the student taps a word that is spelled correctly, an animation, such as the bubble popping, and/or a sound will indicate that s/he selected the correct answer and the words will be replaced with the next three words. If the student taps a word that is spelled incorrectly, the animation will not play and instead an error sound will play. The student will have to try again until they get the correct answer. The student has three "lives" so the forth time s/he taps a word with incorrect spelling, the game will end. The app will also keep track of and display how many correctly spelled words the student has selected and the time remaining in the game. The app will store all of the previous high scores and at the end of the game, the student will be able to see how his/her score compares.

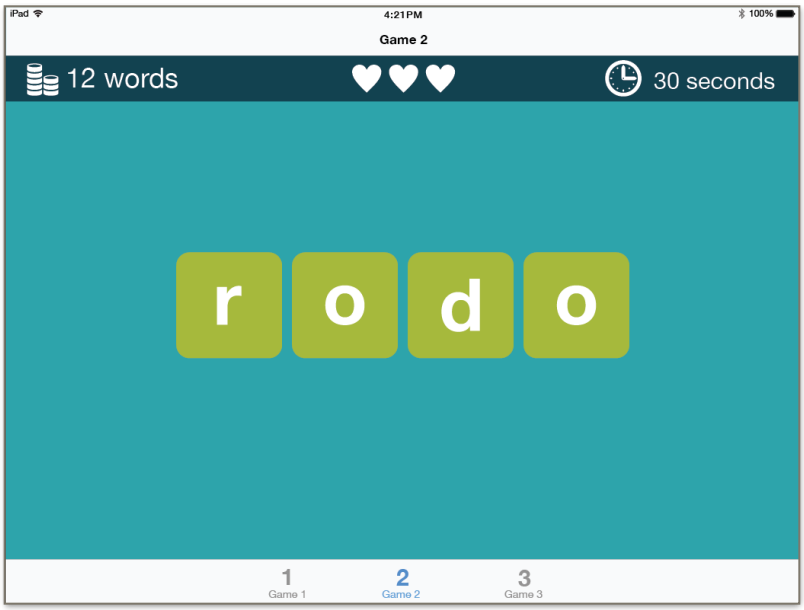
For the second game, the student will be presented with a spelling word that is scrambled. Each letter will be in its own square and the student will have to drag the squares into the correct order to spell the word. If the student sorts the letters into the correct order, the word will light up/ animate and/or a sound will indicate that it's correct. If s/he arranges the letters in the wrong order, the animation will not play and instead an error sound will play. The student will have to try again until s/he gets the correct answer. Like the first game, the student has three "lives" and the app keeps track of the number of correct answers in a certain amount of time and compares the student's score to previous scores at the end of the game.

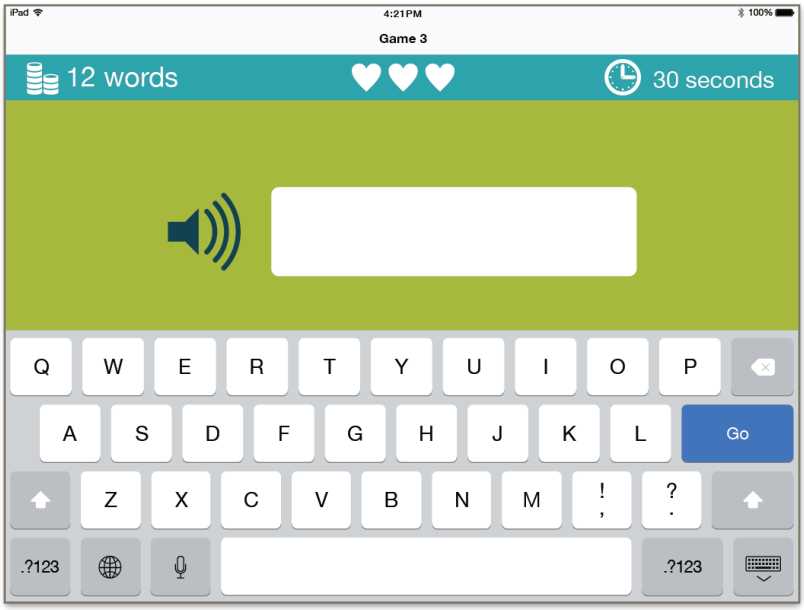
In the third game, an audio clip of a spelling word will be played and the student must type the word into a text field. The student can re-play the audio by tapping a button. Scoring will work the same as the other two games.

If we are able to accomplish this, it would be ideal to allow teachers to enter in their own spelling words. This way, the app could be used by different grade levels.

Visual Design:


iPad
4:21 PM
100%
Game 1
12 words
30 seconds
kat
cat
catt
1
Game 1
2
Game 2
3
Game 3


iPad
4:21 PM
100%
Game 2
12 words
30 seconds
r
o
d
o
1
Game 1
2
Game 2
3
Game 3


iPad
4:21 PM
100%
Game 3
12 words
30 seconds
Q
W
E
R
T
Y
U
I
O
P
A
S
D
F
G
H
J
K
L
Go
Z
X
C
V
B
N
M
!
,
?
.
.?123
.?123

Pseudocode:

- enter name alert to attach the score to the student's name
- words are stored in a plist as an array of dictionaries
- each word is a dictionary with these entries:

Key	Value
correct	cat
incorrect	kat
incorrect2	catt
audio	cat.mp3

Game 1:

```
var lives = 3
var score = 0

UILabel connections (outlets)
• score
• timer

UIButton connections (senders):
• bubbleOne
• bubbleTwo
• bubbleThree
• startButton
        start the timer
                count down from 2 minutes and display the time remaining in the timer UILabel
                when time == 0
                        endGame()
        displayWord()

func displayWord()
        randomly choose a dictionary
        displays the three words from that dictionary in the three UIButtons, in a random order

if the user taps a word with the key "incorrect" or 'incorrect2"
        play error sound
        place an X image over the word
        subtract 1 life
        if lives <= 3
                endGame()

if the user taps a word with the key "correct"
        play correct sound
        play animation
        update score
        displayWord()    // to go to the next word

func endGame()
```

alert “Time is up!”
show score
show previous high scores

Game 2:

var lives = 3
var score = 0

UILabel connections (outlets):
- score
- timer

UIButton connections (senders):
- startButton

func startGame()
start the timer
count down from 2 minutes and display the time remaining in the timer UILabel
when time == 0
endGame()
displayWord()

func displayWord()
randomly chose dictionary and get the value that corresponds with the correct key (the spelling word)
scramble the letters of this word
generate a block for each letter and display each letter on a block (allow blocks to be rearranged by the user)

if the letters/blocks do not spell the spell the word
play error sound
subtract 1 life
if lives <= 3
endGame()

if the letters/blocks are in the correct order to spell the word
play correct sound
play animation
update score
displayWord() // to go to the next word

func endGame()
alert “Time is up!”
show score
show previous high scores

Game 3:

var lives = 3
var score = 0

UILabel connections (outlets):
- score
- timer

UITextField connection (sender):
- userEnteredWord

UIButton connections (sender)s:
- replayAudio
    play the audio file that was chosen
- startButton
    func startGame()
        start the timer
            count down from 2 minutes and display the time remaining in the timer UILabel
            when time == 0
                endGame()
    displayWord()

func displayWord()
    randomly choose dictionary and get the value for that dictionary's audio key (the audio file)
    play this audio file

if the text in the UITextField called userEnteredWord != the value of the dictionary's correct key (the spelling word)
    play error sound
    subtract 1 life
    if lives <= 3
        endGame()

if the text in the UITextField called userEnteredWord == the value of the dictionary's correct key (the spelling word)
    play correct sound
    play animation
    update score
    displayWord() // to go to the next word

func endGame()
    alert "Time is up!"
    show score
    show previous high scores