

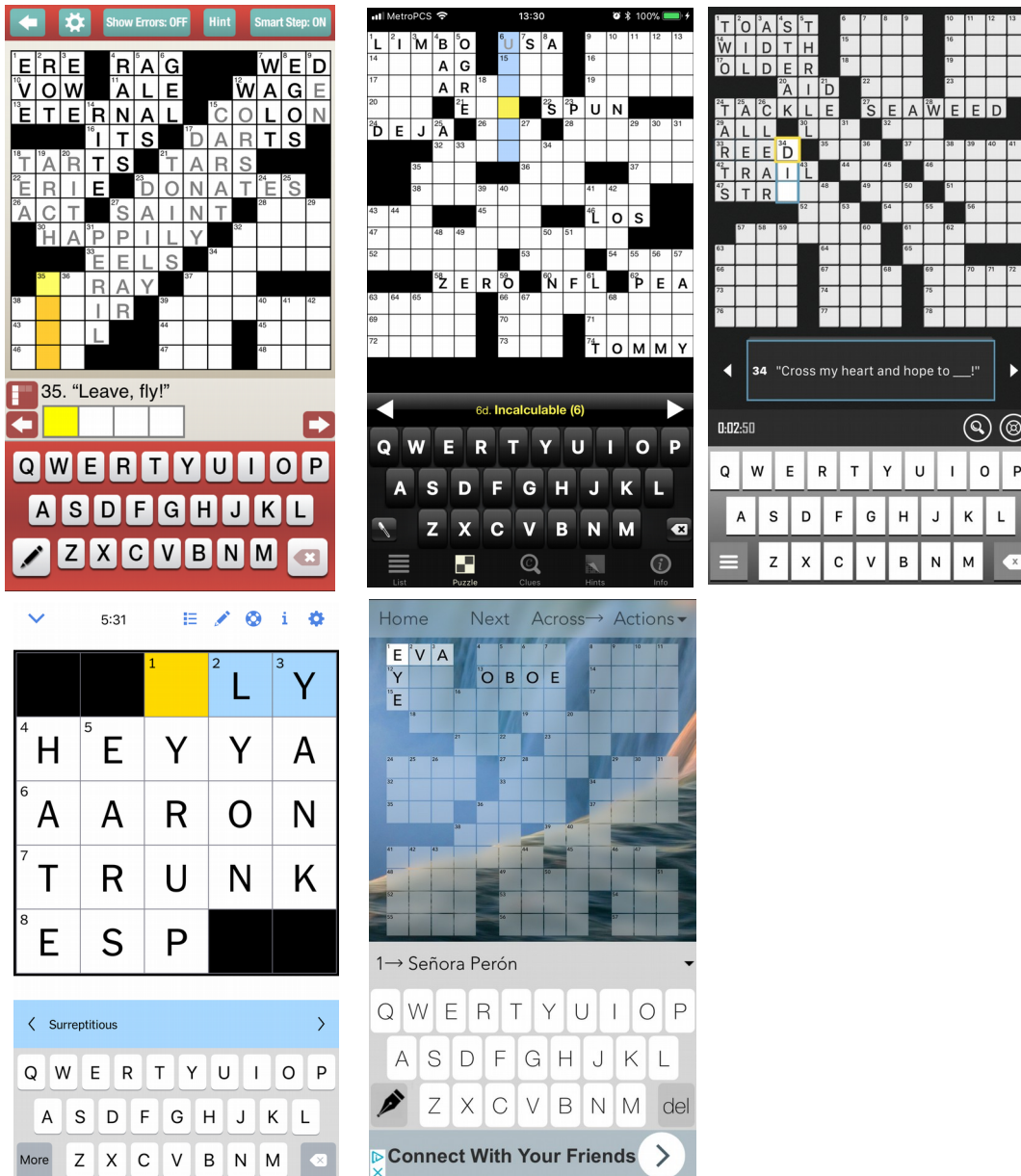
CS-411: Mobile Programming (iOS Apps)

SECOND_App: CROSSWORD_PUZZLE_App

A crossword puzzle app (a type of word game), consisting of a grid of horizontal and vertical squares and blanks, into which words crossing vertically and horizontally are written according to clues. Extra, more detailed clues may be given optionally, or feedback may be given (letter by letter, word by word, or group of words by group) to help the player know if their solution is correct. In competitions, puzzles are timed and/or the number of incorrect guesses the player makes are counted. At the end of the puzzle, the correct solution is shown. Additional puzzles can be purchased, if the player wants to play more than one free puzzle per day. A reasonable minimum size for the puzzle is 13x13 or 15x15, based on the below market research. (Smaller puzzles are only offered as examples of standard-size puzzles.)

MARKET RESEARCH:

- **Crossword Puzzles!** (13x13 iPhone/iPad looks empty, does not allow rotation)
- **Crossword Light** (11x11 or 22x22 iPad, handles rotation correctly)
- **Penny Dell Crossword puzzle** (13x13, does not allow rotation)
- **New York Times Crossword puzzle** (5x5 daily minis), full subscrip \$40/year
- **Crossword (Redstone Games)** (15x15 for most puzzles)



Cells at beginning of words are marked with the word's number (horizontal/vertical words are numbered accordingly). The currently selected word is highlighted, and the currently selected letter within that word is highlighted even more. A clue is shown that for the currently selected word (regardless of the letter within the word).

If multiple clues (for different horizontal and vertical words) are capable of being shown at the same time, then the current clue is highlighted. If there are too many clues to show at the same time, then the window scrolls appropriately. Some apps have an option to show completed words using a strike-through font through the corresponding clue, even if the guessed word is wrong (or optionally, as a hint, only if it is correct).

MOUSE GESTURES

Clicking selects appropriate word (according to mode), single clicking again changes the current mode
Double-clicking selects and zooms in, double-clicking again (selects) and zooms out
Pinch/expanding zooms out/in, accordingly; long presses, pans, and rotations are ignored.

AUTO-ADVANCE

Entering a letter automatically moves to the next letter (by current mode). "Next" is defined as next letter/next wrong letter/next blank letter, depending on the app. Auto-advance sometimes chooses between horizontal and vertical in same group of words, sometimes choosing the easiest path of words to get all of the words in a group

Ere (1H) --> Eve (1V) --> Rot (2V) --> Vow (10H) --> Ewe (3V) --> Eternal (13H)

ERE

VOW

ETERNAL

Deleting a letter does not move to next letter

MONETIZING

Apps can be monetized in a variety of ways, if desired, or offered completely for free.

If monetized, apps can be purchased for an up-front amount, or ads can be shown, or a fee can be charged to turn off the ads. In-app purchases can also be offered, such as tickets can be purchased, which can be used to buy hints on letters or words, or to purchase puzzles. Typically, small, easier puzzles are offered daily for free. Some apps offer one free puzzle per level (hard/medium/easy) per day.

MENU ITEMS or TAB_BAR ITEMS

- Shows current mode (H/V)
- takes you to the home page
- allows choosing a hint
- turns smart stepping on/off
- has a settings icon with...
 - STATS (%complete, time, extra clues, hints used, completed/correct/incorrect words or letters)
 - USER MANUAL (text file with app description, marketing, app play instructions, websites for company and customer service (has version/build #), trouble shooting hints)
 - shows if errors are on/off

TYPES OF OPTIONS (options often have an information icon to describe them)

- Sets smart step (auto advances to next letter)
- Tap goes to first letter (goes to first (empty) letter in a word)
- Hints (more detailed description, marks incorrect word/letter, usually monetized)
- Skips filled squares within a word
- Jumps back to the first blank within a word
- Jumps to the next clue
- Sets the clue size (small/normal/large/larger)
- Shows timer
- Shows competitive features
- Plays music when solved
- Selects color scheme (high contrast/normal)
- Background music

- Background images
- Multiple puzzles

iPhone/iPad Capability and/or Handling Rotation

some apps have it; some don't

Timer/Move Counter

Timer measures how long it takes to solve a puzzle (option)

Move counter measures how many moves it takes to solve a puzzle

Keyboard

Generally custom built from buttons, with...

Letters and delete AND... MORE key (numbers/symbols) or SETTINGS or MENU key

Probably Not in Version One

Shows percent of completed puzzle in puzzle selection page (by coloring in completed squares)

Echoes word being completed (with highlighting) under hint, (to allow selecting letters more easily when grid cells are small)