Moon Runes

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Moon Runes is an Android Application that allows users to record night-time ideas and thoughts (text and/or sound) without being blinded by the backlight, fumbling with an app interface, or trying to type on the on screen keyboard.

Application Description

Moon Runes is meant to be run before going to bed. The app will then run in a mode where if the screen is touched during the night, simple gestures (like writing in the sand) will be saved like letters. In the morning, the user can review the scribbles they've drawn, choose whether to attempt to transcribe them, and send the picture and transcription to some storage service, e.g. Dropbox/Evernote/Gdrive. The "runes" drawn will likely be mostly illegible, but will hopefully remind the user enough of whatever important revelation/task/idea they thought of when they wrote it.

While the app is running and recording, the screen will remain as dim as possible (or off, if possible), and the phone in a low power state. Thus, there is no GUI for the apps' main operation; A user can simply reach over during the night and draw letters on the screen without being blinded by the backlight, squinting to click the 'new note' button, and fumbling with the on-screen keyboard.

User Story

>be 21
>in bed, trying to get to sleep
>can't sleep, too much thinking to do
>remember you need to write a user story for android development
>start thinking up a story:
>>be 21
>>in bed, trying to get to sleep
>>can't sleep, too much thinking to do
>>think up an awesome idea for an android app
>>oh gosh, you could make so much money off of this
>>it'd be stupid simple too
>>if only it weren't 2AM and you could get out of bed and start coding
>>think you'd better write that idea down
>>but no, it's too dark, and you're too lazy to get out of bed
>>oh wait, I can write it on my cell phone
>>turn on cell phone, screen blinds you
>>"Oh well, it's such an awesome idea, I'll certainly remember it the morning"
>>be in the the morning
>>can't remember anything
>>don't make awesome android app
>>don't become rich
>>feels bad man
>yeah, that sounds pretty good
>reach over to cell phone, and start tracing the letters of the story on the screen
>screen remains off, not blinding you
>app automatically records your scribbles, no on-screen keyboard needed
>feel sleepy now that you've emptied your amazing thoughts onto external memory
>go to sleep, without insomnia induced by staring at cell phone backlights for too long
>be in the morning
>wake up refreshed
>see phone, notice you have a note to yourself, in wonderful almost unintelligible english-like runes,
arranged like words
>look at it, and remember that you thought up an awesome user story for your awesome app
>start transcribing text with your on-screen keyboard now that you're awake and it's light out
>it's actually fairly easy now that you remember what you were thinking
>choose to save note (and runes) to evernote, dropbox, and google drive, because they're all free services
that expose the correct intent for saving information, and you're a hip, modern webapp consumer who
don't need no local backup
>quit out of app, and eat breakfast of champions
>later, copy it to this page on piazza
>make app, become rich and famous
everythingwentbetterthanexpected.jpg

Use Case List

1. As a user, I want to be able to draw big letters on the screen and see them displayed as regular text (smaller, in left to right order, like actual text entry)
2. As a user, I want to be able to save the letters I have written as an image to a "sharing" service, e.g. email, Evernote, GDrive, SD card, etc.
3. As a user, I want to be able to draw letters on the screen while the screen is as dim as possible, with a special latch (hold down back button for 3 seconds or something) to get back to the regular display of entered text.
4. As a user, I want to be able to--while looking at the entered characters--correct small errors in entry such as overall rotation, spacing, and line breaks.
5. As a user, I want to be able to split one note into two separate notes at a breakpoint of my choosing.
6. As a user, I want to be able to--while looking at the entered characters--add text notes using the regular keyboard that are saved with the image when the note is saved to a "sharing" service.
7. As a user, I want the letters I have drawn on the screen over a longer period of time to be split up into separate notes by time of entry, so probably separate thoughts can be viewed, added to, and saved separately.
8. As a user, I want the separate words from the letter stream of each entered note to be intelligently split where I paused between entering words, so thetextientereddoesn'tlooklikeatelagramSTOP (alternatively, make a gesture like "--" insert a space instead of a dash)
9. As a user, I want letters like "t" and "k" correctly merged from "|" + "-" or "|" + "<" when I enter them, and I want to be able to merge the characters manually when they are not automatically merged.

Use Case Diagram
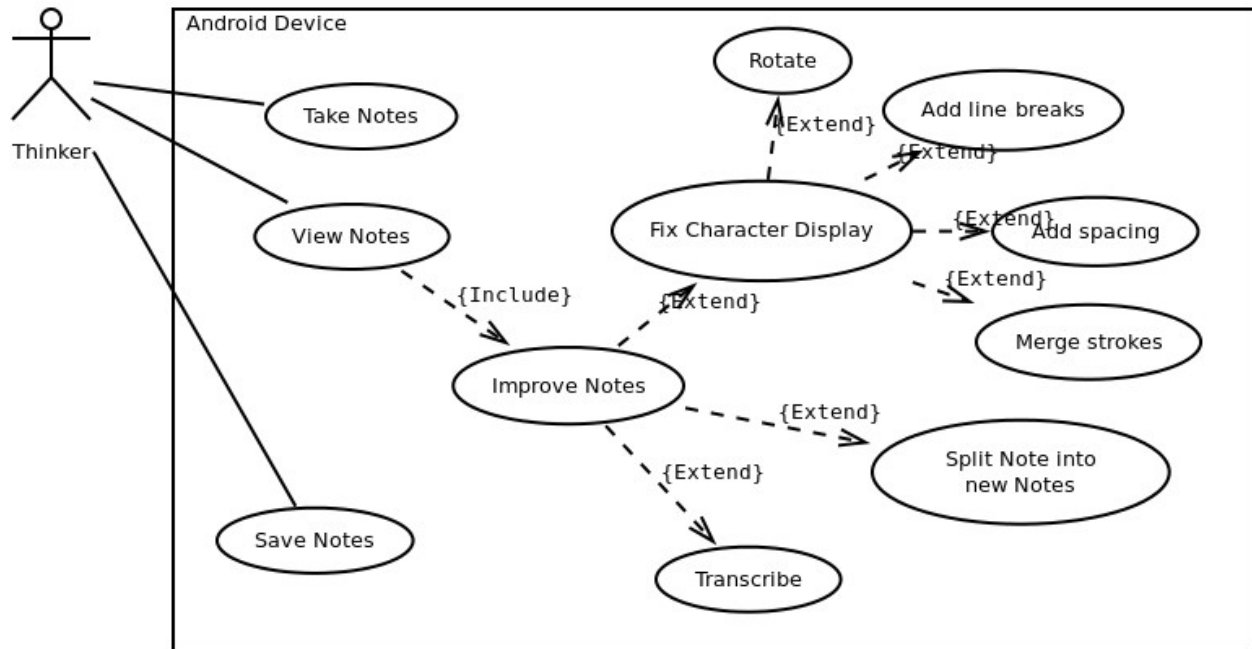
Thinker Scribbles Note

As a sleepy thinker, I want to be able to scribble notes on my phone without looking at the screen.

Actor: Thinker
Purpose: to record ideas externally without a light-source or need for complicated user interaction, which are unwanted when trying to get to sleep.

Precondition: Thinker has the phone and application within reach from their sleeping position.
Postcondition: Thinker can view, modify, and save the notes they scribbled from the past session (overnight)

Success Scenario:
1. Thinker opens app.
2. Thinker taps button to enter "record" mode.
3. App enters full-screen mode, dims brightness, disables lockscreen, and remains open.
4. Thinker, when prompted by a thought, scribbles a note onto the screen.
5. When ready (in the morning), thinker exits record mode, and views the taken notes from the last session.

Frequency: any occasion the Thinker wishes to take notes without complicated user interaction (every night)

Possible implementation issues:
1. The app might not be able to fully disable the lockscreen without root permissions.
2. The app might not be able to disable the home button without root permissions, which could inadvertently be pressed, pausing the application.

Thinker Saves Note

As a Thinker, I want to be able to save recorded notes from the app to a different service, like Dropbox or Google Drive.

Purpose: Saving the notes outside the app allows users to leverage existing, mature backup and search services for storing notes, as well as do simple sharing or backup through email or the device SD card.

Implementation: When viewing taken notes, the Thinker can tap a "Save Button", which will prompt for the service to use. The backing service will receive an intent containing an image version of the scribbled notes, as well as any manual text transcription the user has saved.

The app stores recorded notes internally as well, so users have the option to take notes while offline. However, the application will not provide its own backup service on the internet.

Thinker Transcribes Note

As a thinker, I want to be able to transcribe a scribbled note to regular text, using the regular android input methods (on screen or physical keyboard).

Purpose: The recorded scribbles will likely be crude and harder to read, due to the inexact nature of the input. However, if viewed close to the time they were written (in the morning), the thinker should be able to recall what they were thinking enough to jog their memory. By offering a transcription interface, the Thinker can additionally refine the note to something fit for more permanent storage, as well as correct things or make additions.

Implementation details: Since the Thinker won't be looking at the device when taking notes, an option to fix the rotation of all the recorded characters needs to be added to make transcription feasible. Also, options to split/join incorrectly merged keystrokes, and re-add word spacing or newlines to the scribble stream can help make the transcription less necessary (or future machine transcription more viable).

The interface itself should show a line of scribbled text with a input field below, matched as close as possible in font-size to the scribbled text so the transcription lines up with the original.

Domain Classes

Rune: A set of strokes that make up one english-like letter. Usually contains only one stroke, unless split or merged from multiple Runes. May also contain 0 strokes (space)
Note: A stream of Runes, as well as an optional annotation (text), and created/edited timestamps. A Note can be exported as an image, or as just the annotation text.
Recorder: handles mouse gesture events and outputs the appropriate Runes to a Note, encapsulating such handling as multi-stroke merging, grouping Runes into Notes by input time, and so on.

Screen Specifications
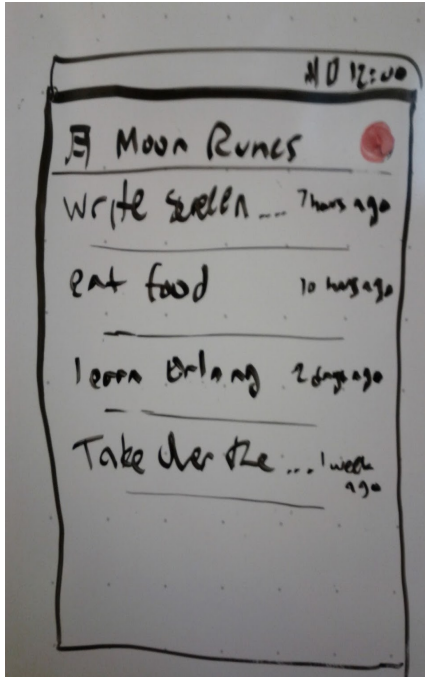
Main Screen

Displays a list of notes taken, sorted by date order, with a preview of the note's contents.

Red "record" action enters recording mode (which has no UI).
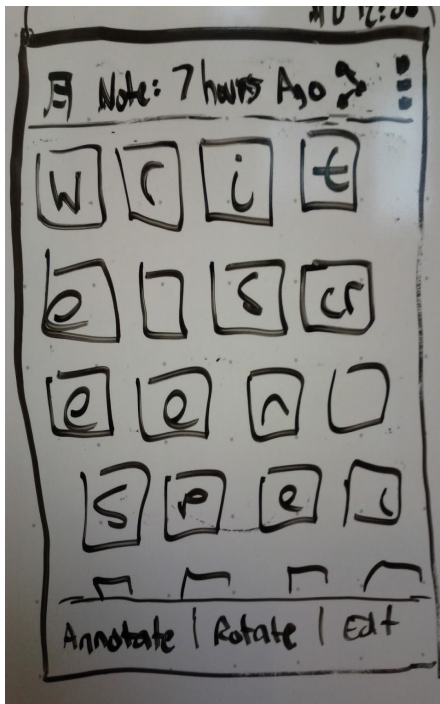
Tapping a note opens the Note view.
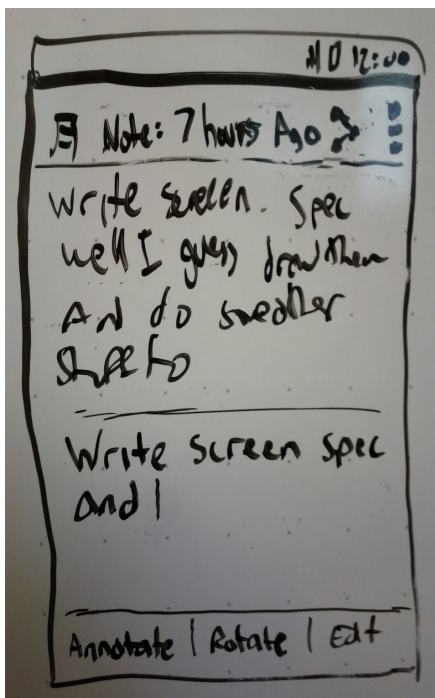
Note View

Displays the taken note's Runes, as well as any Annotations below. The "Share/Connect" and "Menu" Options expose additional functionality on the action bar. A split action bar at the bottom switches between other modes.
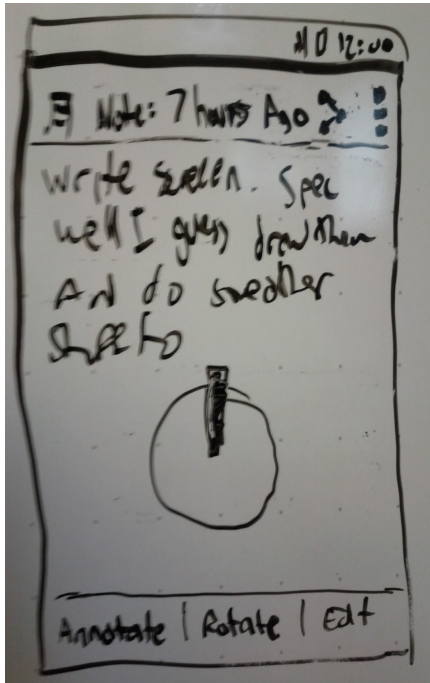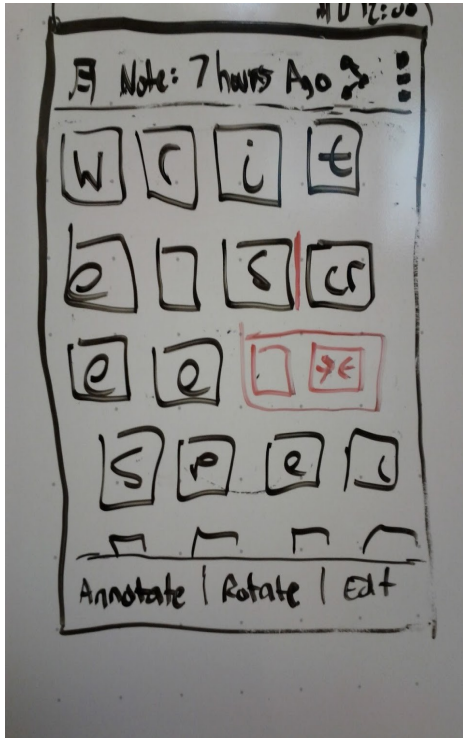
Rotate Mode

Displays a dial on the screen that, when dragged, rotates all the runes of the Note to that angle.
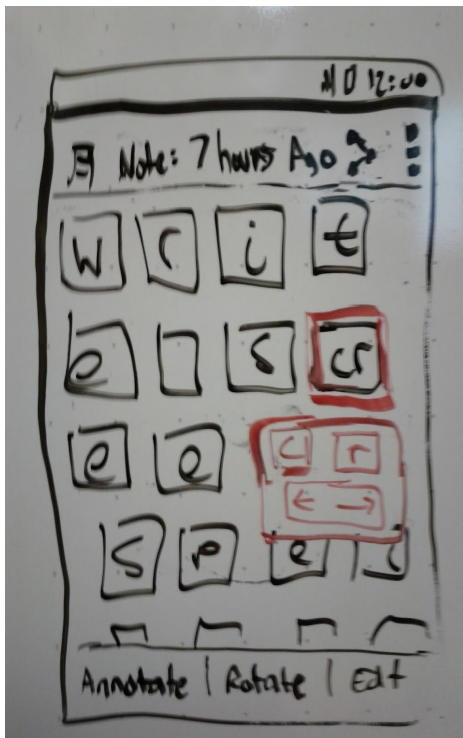

Edit Mode

Displays every rune, including blanks, as a separate tile, e.g. the iOS home screens. The individual letters can be dragged around, or tapped for additional editing features.
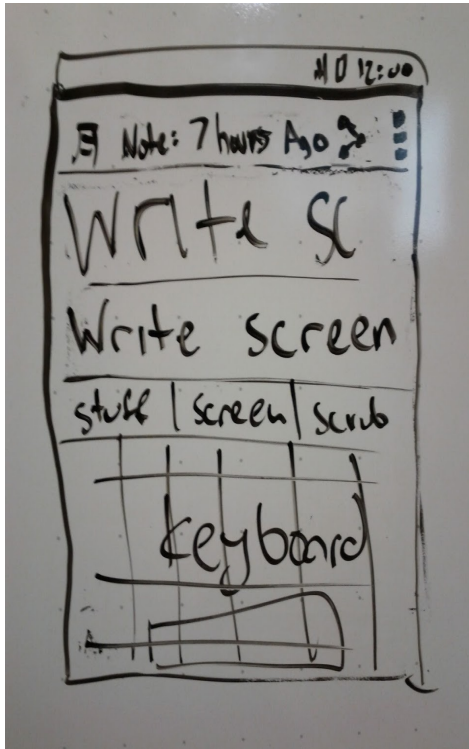
Space/Merge Mode

Tapping the space between two Runes opens a submenu that allows the user to insert a space or merge the two Runes together.
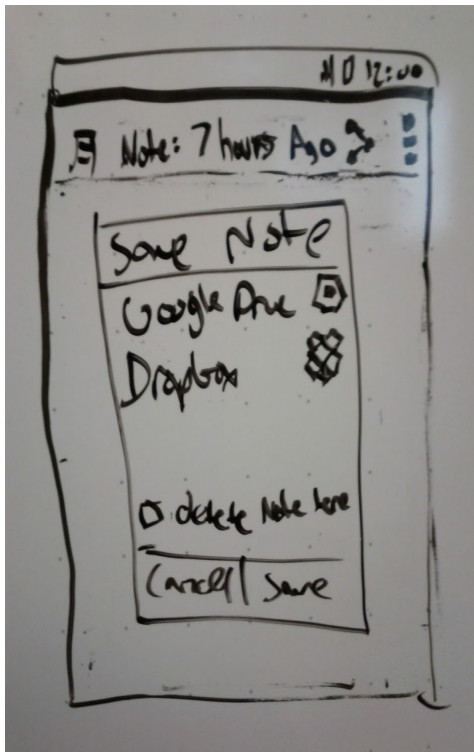

Split/Delete Mode

Tapping a single Rune shows a menu to split the strokes of a Rune, or delete the rune entirely.

Annotate Mode

Tapping the annotation text brings up the keyboard and compacts the annotation/Rune display to one line, with the Runes shown bigger for ease of annotation.

Save Note

Tapping the "share/save" action opens the regular menu to select a provider, with an additional option to delete the Note from Moon Rune's internal storage (if it is no longer needed)