Expressive Keyboard

How to use the mock-up application

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The mock-up application, **GestureLogger**, is used to give a demo on how to use Expressive Keyboards.

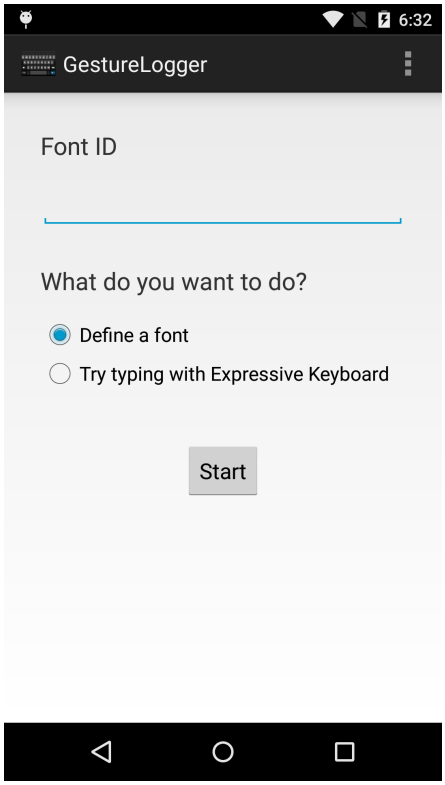


Figure 1: Prompt when first opening the app

In 27 April 2016, there are two main functions: to define a font and to try typing with dynamic outputs.

How to run the app

A. Android Debug Bridge

GestureLogger relies on Android Debug Bridge to capture the gesture coordinate and send them back to the phone.

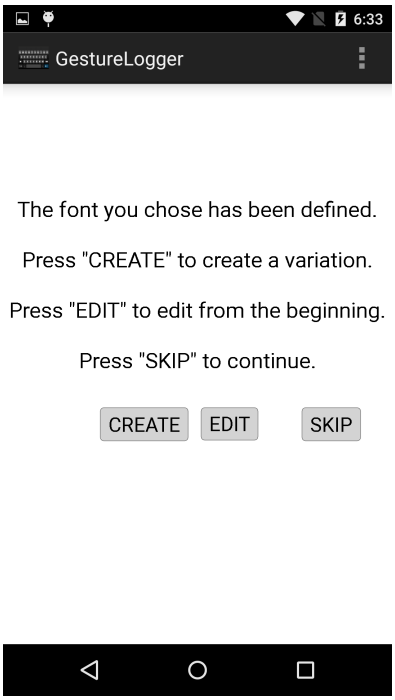
To prepare:

1. Connect the device to the computer via USB cable.
2. Make sure Android SDK is installed (or you have **adb** tools).

3. Copy the file **process.py** and **script-gesturelogger.sh** to
   "android-sdk-macosx/platform-tools/"
   or to the folder with **adb** tool.
4. Open console bash, redirect to "android-sdk-macosx/platform-tools/"
   > cd android-sdk-macosx/platform-tools/
   Register this path to $PATH Variable.
5. To run the shell script:
   > ./script-gesturelogger.sh
6. The shell is now capturing all the touch event coordinate.
7. The python script **process.py** extracts the touch coordinate and send it back to the shell. The shell then pushes a text file called "gesture.txt", containing the touch coordinate from a touch down event until a touch-up event, to "/storage/sdcard0/".
8. **GestureLogger** only reads the file when a rich output is expected.
9. To exit the shell script, press Control+C

B. GestureLogger: Define a font

1. Open **GestureLogger** application
2. Fill in the Font ID and choose “Define a font”
3. If a font with such ID has not been defined yet, you start defining from ‘a’ to ‘z’, or continue to define from where it’s left off (e.g. you quit after defining ‘g’ then you can continue defining ‘h’, etc.).
   You can try typing with the font (only colored, without interpolation) afterwards.
4. If a font with such ID has been defined once, you have three options:



CREATE a variation of the font by editing the pre-defined font (the original becomes the baseline) to enable interpolation. Here you can edit the position of the control points (don’t add/delete control points) to create the variation. You can try typing with the dynamic font (colored, with interpolation) afterwards.

EDIT the font (baseline). You can edit the position or add/delete control points. You can try typing with the font (only colored, without interpolation) afterwards.

SKIP to use the font as it is (only colored, without interpolation).

5. If a font with such ID has been defined twice (you have chosen **CREATE** in Step 4), you have two options:
   EDIT the font (variation). You can edit the position control points of the variation (don't add/delete control points).
   SKIP to use the font as it is.
   You can try typing with the font (colored, with interpolation) afterwards.

Existing font ID:

With interpolation: 2 and 78 (default – if you leave the Font ID blank).
Without interpolation: 0 and 5.

C. GestureLogger: Try typing with Expressive Keyboard

1. Open **GestureLogger** application
2. Fill in the Font ID (pick from the existing) and choose "Try typing with Expressive Keyboard"
3. The first page changes the color only.
   Press "NEXT" to continue to the second page.
4. The second page uses the dynamic font and color.

Mapping on Text

Gesture Feature	Output Properties	Effect when minimum	Effect when maximum
Inflation Ratio	- RED - Stroke-width of dynamic fonts	When the size of a gesture is the size of the word's gesture template: - RED=0 - Normal stroke-width	When the size of a gesture is twice BIGGER than the size of the word's gesture template: - RED=255 - Bold font
Curviness	- GREEN - Random offset to control points of dynamic points	When the gesture consists of straight lines: - GREEN=0 - A letter appears the same everywhere	When the gesture consists of curve, cusp, scribble, etc.: - GREEN=255 - A letter appears slightly different compared to the others
Speed Consistency	- gradient of BLUE - Interpolation weight	When the speed is consistent over a gesture: - BLUE=0 - No interpolation (the font is the baseline)	When the speed is inconsistent (faster/slower) over a gesture: - BLUE=255 slower —> blue to any faster —> any to blue - High interpolation (the font is the variation)

Mapping on Emoji

Type “emoji” to create a smiley face (note: if it’s not recorded as a word yet, type emoji several times until it is included into the personal dictionary of the keyboard.

Gesture Feature	Effect when minimum	Effect when maximum
Inflation Ratio	When the size of a gesture is the size of the word’s gesture template: closed mouth	When the size of a gesture is twice BIGGER than the size of the word’s gesture template: open mouth (only possible when the smile is big enough, so it looks like laughing)
Curviness	When the gesture consists of straight lines: small smile	When the gesture consists of curve, cusp, scribble, etc.: big smile

Technical Implementation

How to install:

- Open the project **GestureLogger** on Eclipse
- Go to *Constant* class, change variable *EXPTYPE=4*
- Run on Android device