

Advanced Prototyping Project Book

03-Function Proposal

Hardware

Inputs

Grove - GSR Sensor

Function: Senses the electrical conductance of the skin between two fingers to identify emotions based on sweat

Source: <https://www.seeedstudio.com/Grove-GSR-sensor-p-1614.html>

LilyPad Temperature Sensor

Function: Senses temperature as detected from physical touch based on body heat which will add to the ability of this device to detect user emotion/mood

Source: <https://www.sparkfun.com/products/8777>

Rotary Potentiometer- 10k Ohm, Linear

Function: mood/fortune mode switch; Turning the knob to the left will activate the fortune telling mode whereas turning the knob to the right will activate the mood identifying mode

Source: <https://www.sparkfun.com/products/9939>

Toggle Switch

Function: on/off switch; This switch has a somewhat retro aesthetic which will add to this device's looks as well as act as the user's on/off switch

Source: <https://www.sparkfun.com/products/9276>

Processing

Arduino Pro Micro

Justification: This Arduino Processor provides a decent amount of pins as needed for the several inputs and outputs listed above, while keeping within the smaller size needed for this handheld device

Source: <https://store.arduino.cc/usa/arduino-micro>

Outputs

LCD Screen

Function: This screen will display any instructions to the user, as well as a countdown/loading screen while the user's inputs are being taken, and lastly the mood/fortune message will be communicated to the user through this screen

Source: <https://www.sainsmart.com/products/1-8-tft-spi-lcd-screen-with-microsd-socket>

Mini Speaker – PC Mount 12mm 2.048Hz

Function: This speaker will provide basic sounds that assure the user that the device is at work and that their inputs are received

Source: <https://www.sparkfun.com/products/7950>

Power

Lithium Ion Battery – 850mAh

Source: <https://www.sparkfun.com/products/13854>

Software

Arduino Programming

Libraries provided by part distributors