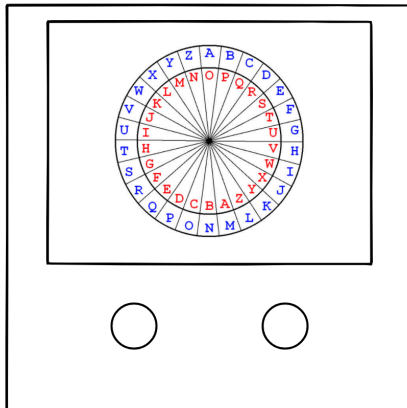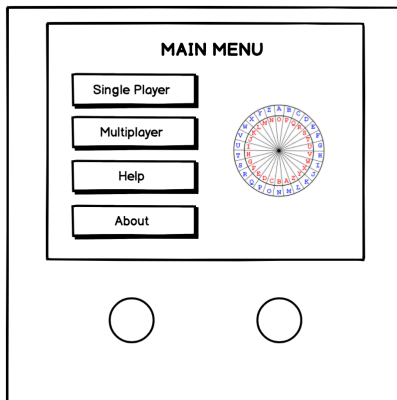# Function Development
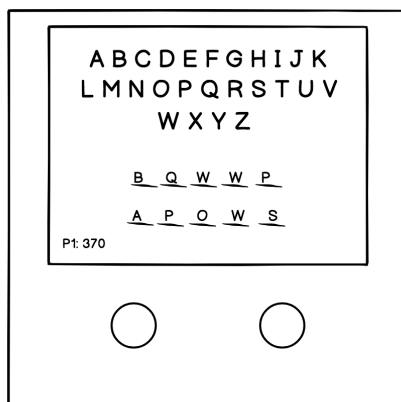Jessica Peters

Wireframe Storyboard:

Splash Screen
This screen first appears when the device has been turned on. It displays a graphic of a cipher disk and then loads the main menu.

Main Menu
This screen allows users to navigate to the device's four different modes by turning the rotary encoders to scroll and pushing the knobs to select.

Single Player Mode
An alphabet appears at the top of the screen to indicate which letters are available to be chosen, while the randomly encoded phrase appears below it. The player's current score is also displayed in the bottom corner of the screen.
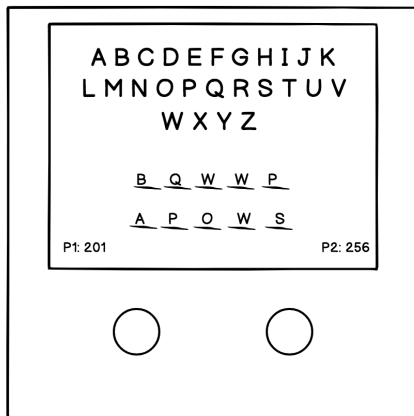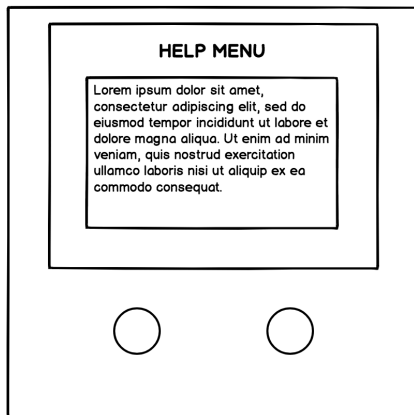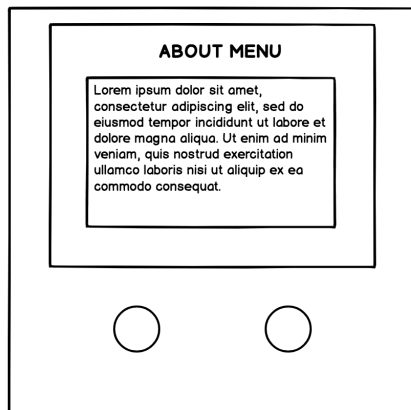
Multiplayer Mode

Like the single player mode, an alphabet appears at the top of the screen to indicate which letters are available to be chosen, while the randomly encoded phrase appears below it. Each player's current score is also displayed in the bottom corners of the screen.

A B C D E F G H I J K
L M N O P Q R S T U V
W X Y Z

B   Q   W   W   P

A   P   O   W   S

P1: 201   P2: 256

Help Menu

The help menu provides the user with information about how to correctly operate the device.

HELP MENU

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

About Menu

The about menu provides information about the device and its designer.

ABOUT MENU

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Component Sketch:

240 x 320 TFT LCD Screen

SPI

Arduino Pro Mini

Piezo Speaker

PB Rotary Encoder

PB Rotary Encoder

5v

TP5410 - LiPo Charger/Boost Converter

Slide Switch

3.7v

1100 mAh LiPo Battery

Bill of Materials:

Name	Source	URL	Qty.	Price
Arduino Pro Mini	Amazon	https://www.amazon.com/Arduino-Pro-Mini-5V/dp/B00VKIGF4G/ref=sr_1_7?ie=UTF8&qid=1518640152&sr=8-7&keywords=arduino+pro+mini	1	12.25
Rotary Encoder with Button	Sparkfun	https://www.sparkfun.com/products/9117	2	3.95
TP5410 – LiPo Charger Boost Converter	Ebay	https://www.ebay.com/itm/191990401129	1	2.19
Lithium Ion Battery	Amazon	https://www.amazon.com/uxcell-1000mAh-Rechargeable-Lithium-Polymer/dp/B0767FQDWQ/ref=sr_1_2?s=electronics&ie=UTF8&qid=1518640843&sr=1-2&keywords=lipo+battery+1000mah&dpID=41ItImsForL&preST=_SY300_QL70_&dpSrc=srch	1	9.99
2.2" 4-Wire SPI TFT LCD Display	Amazon	https://www.amazon.com/4-Wire-Display-Module-240x320-ILI9340C/dp/B01N3L01BB/ref=sr_1_2?s=electronics&ie=UTF8&qid=1518117544&sr=1-2&keywords=2.2+inch+4-Wire+screen	1	16.59

Breadboard Model: