

Creek Watchers App & Website



By Dylan Larrabee



Introduction

- Me and 2 other group members began development of an android app and website for the Creek Watchers group located here in Salisbury.
- The Creek Watcher's main goal is to collect various types of data about local rivers and ponds.
- Our goal was to make an android app to make this process more straightforward, efficient, and less prone to "bad data".
- We later implemented a website with an attached database for data to be stored and viewed

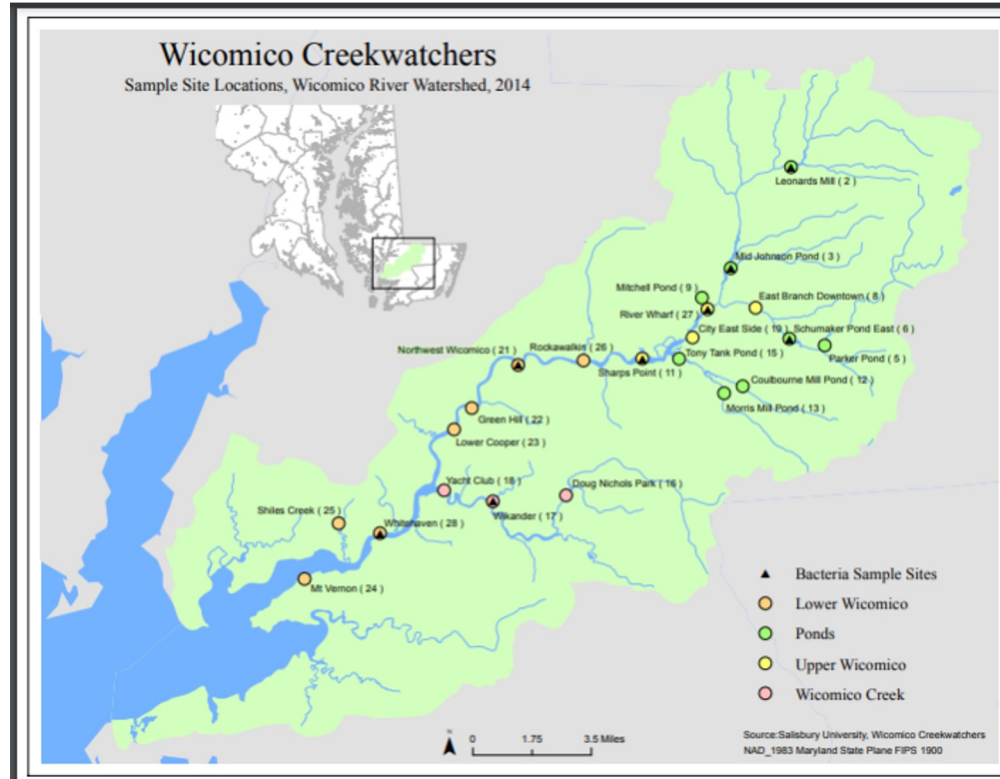


Tools Being Used



- Java is the programming language used to code functionality
- XML is the markup language used to stylize the pages
- Android studio is used as the IDE of choice
- GitHub is being used for collaboration and project storage

The Site Locations





Goals of the App

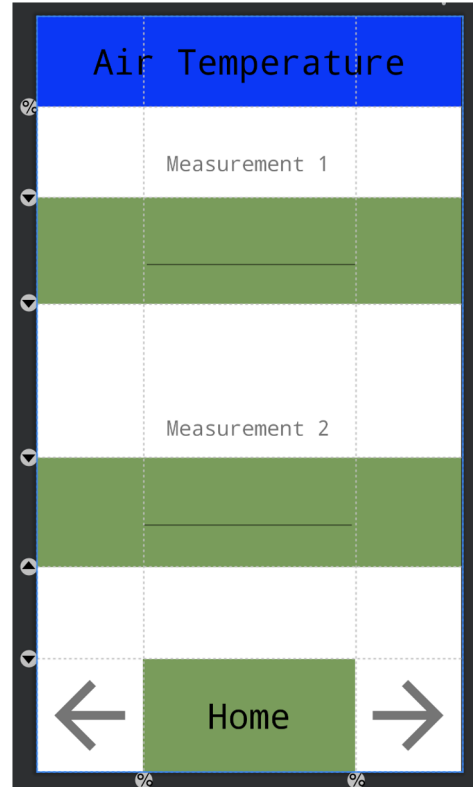
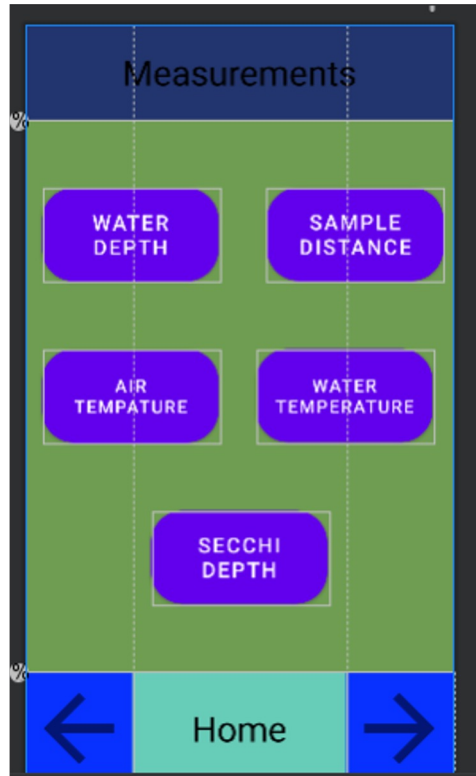
- Create a user friendly interface for data collection
- Create error checking to prevent impossible or unlikely values from being entered
- Accessible to all ages
- Easy submission of data
- Create a system for the Creek Watcher leaders to view and alter data as needed

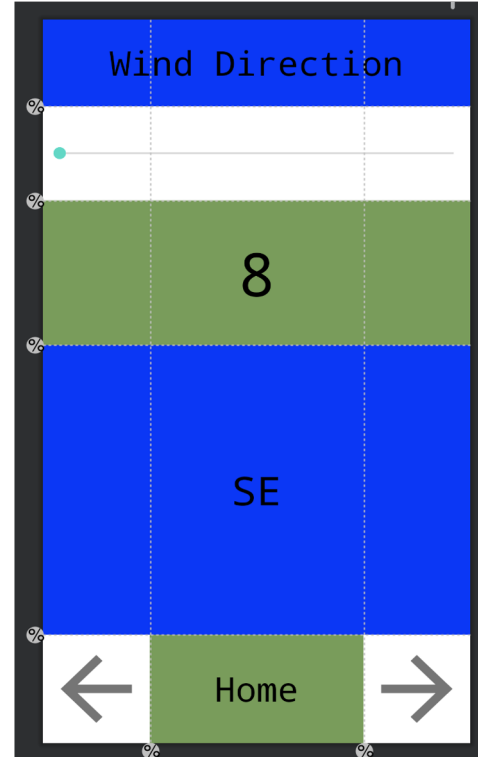
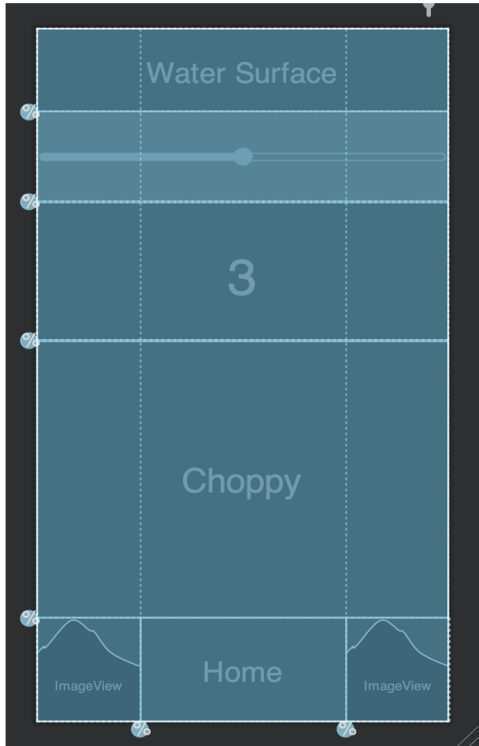


App Design

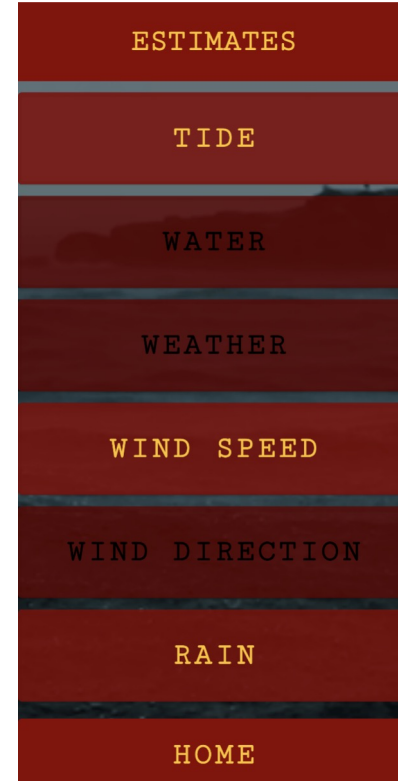
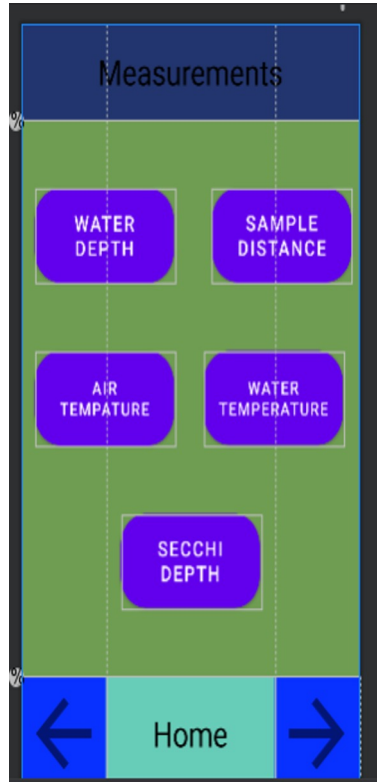
- Form Selection: Create new form or edit old one
 - If new, enter new name or select saved one
- Site Selection: 26 total sites to choose from
- Home Page: Access to all other content in app
- Data Collection: Different menus for estimated values and precise measurement values as well as comments page.
- Data Review: Overview of all the data values to enter or edit

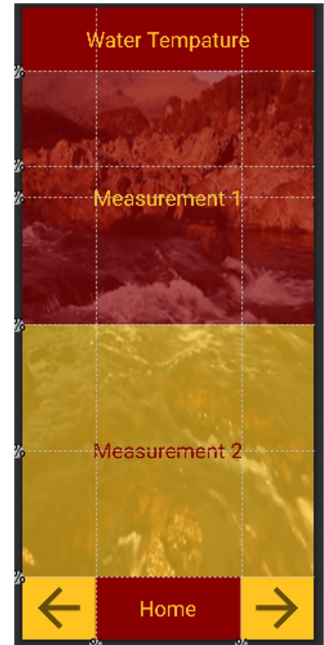
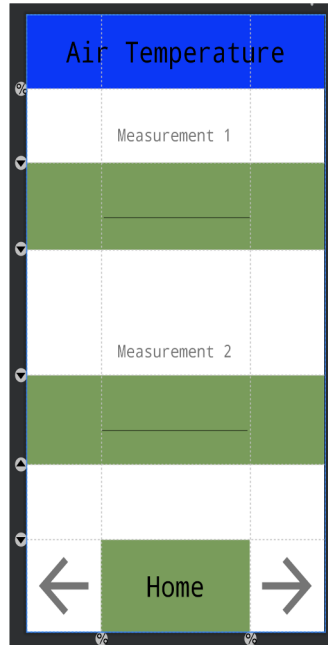
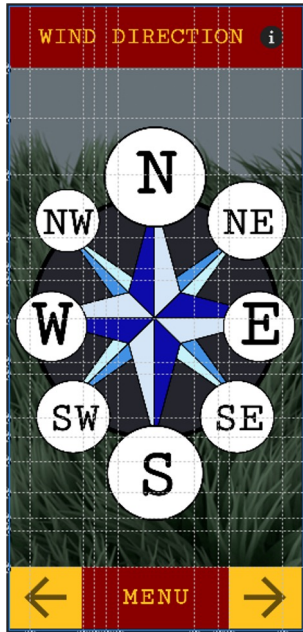
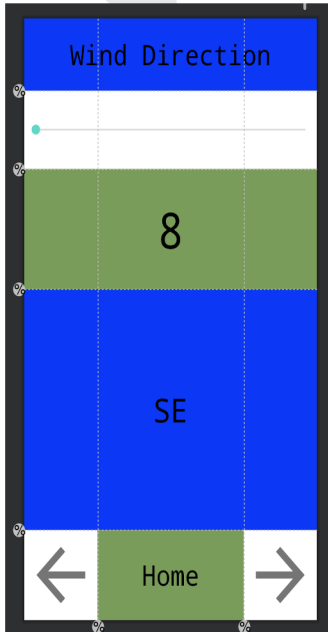
Early Design





Revised Design







The Final Product

- Many visual and quality of life changes were made
- Color and theme adjustments for the sake of visibility
- Submission of data to creekwatchers website



Website Design

- Simple and Straightforward
- User login to allow administrative viewing and editing of data
- Publicly viewable graphs based on collected data
- Database implementation to store collected data (using Firebase)



Login/Entry Page

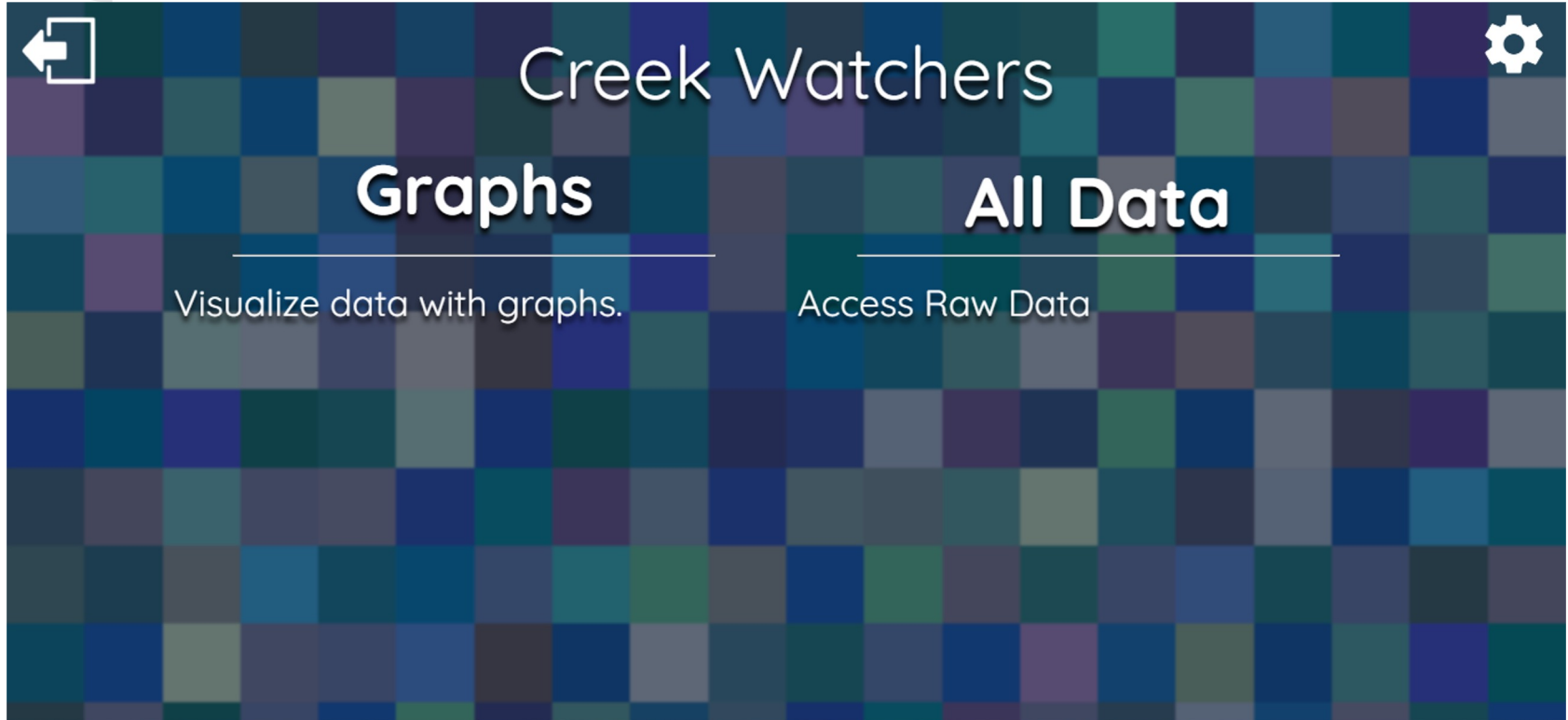


Creek Watchers

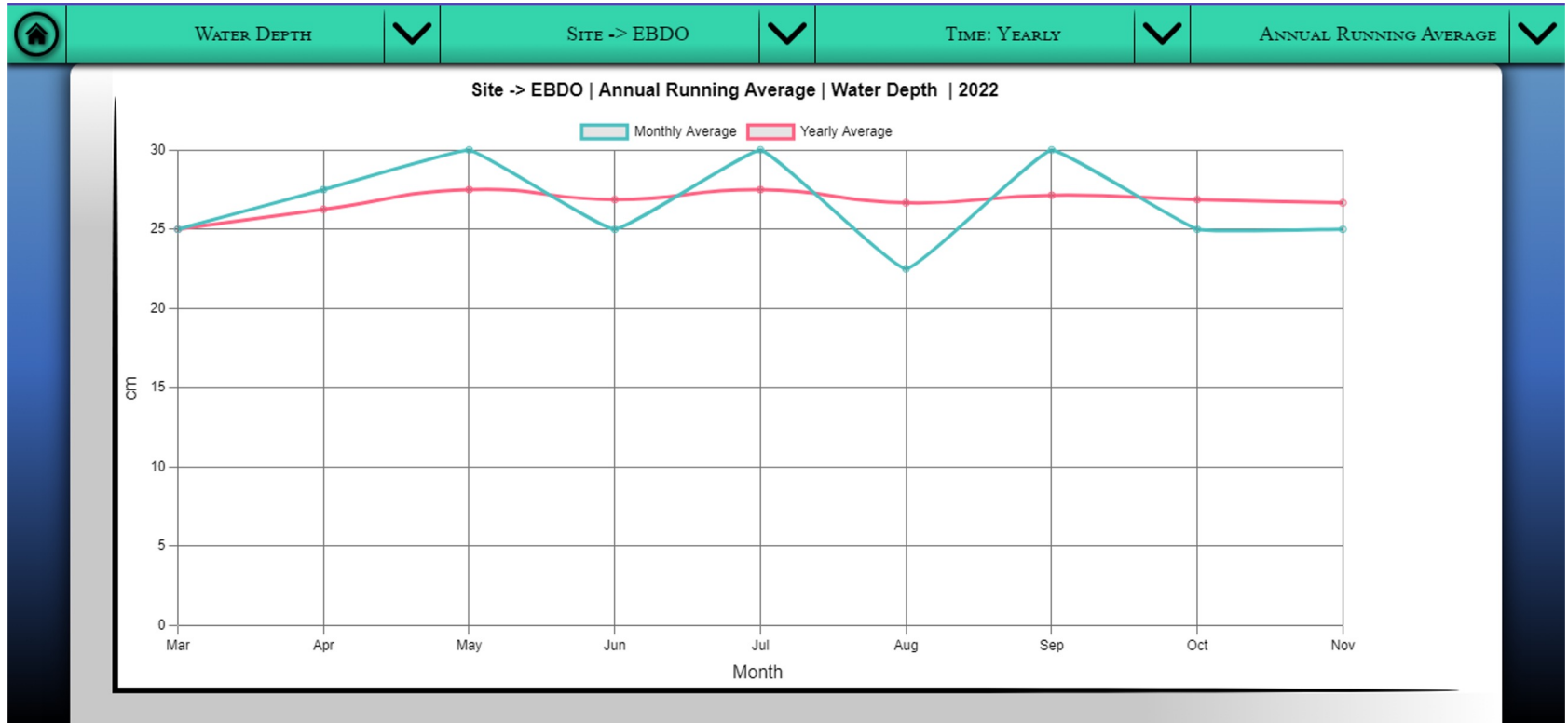
Login

Guest

Admin Home Page



Graphs (Publically Viewable)



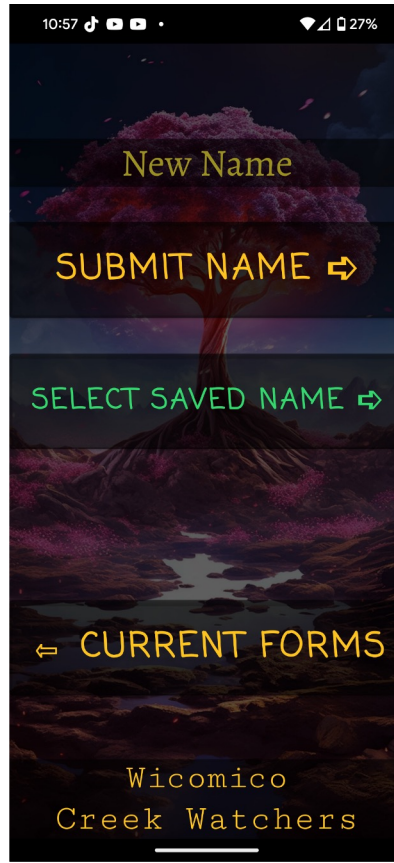
Data Section (Admin view only)

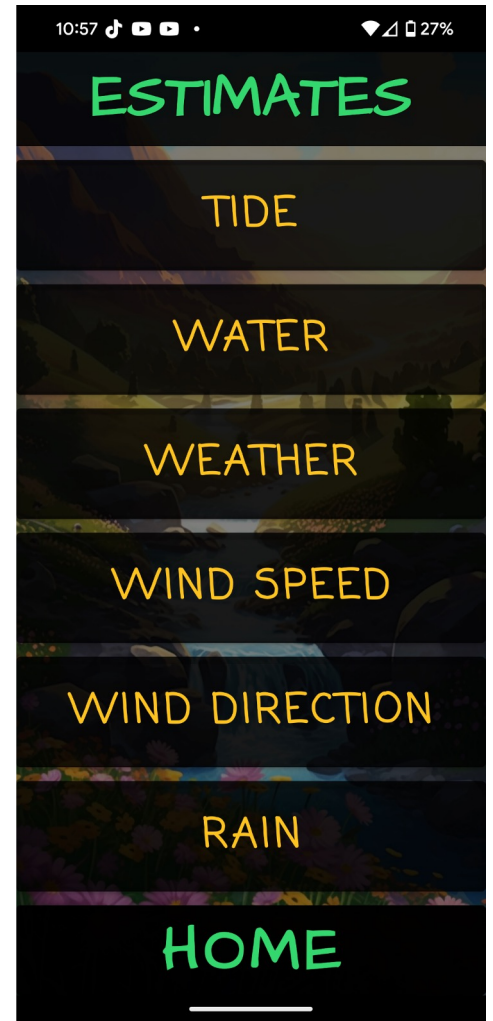
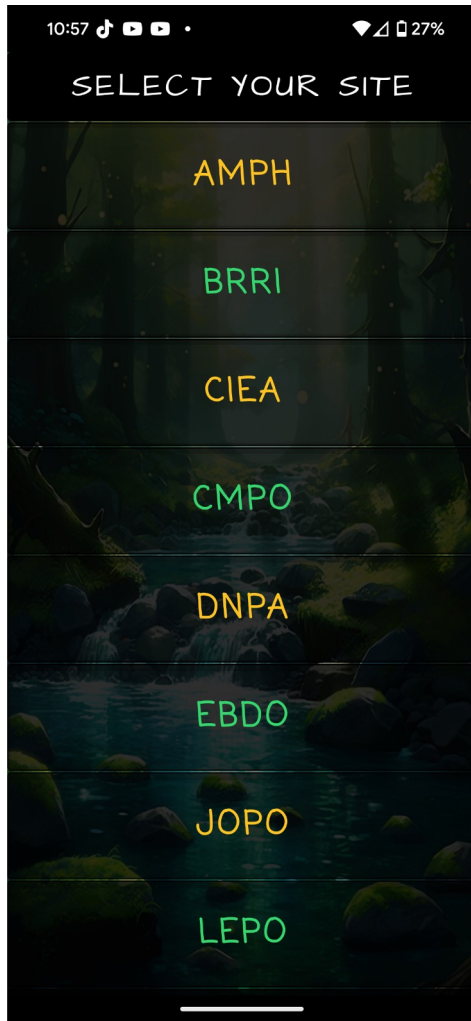

 Name

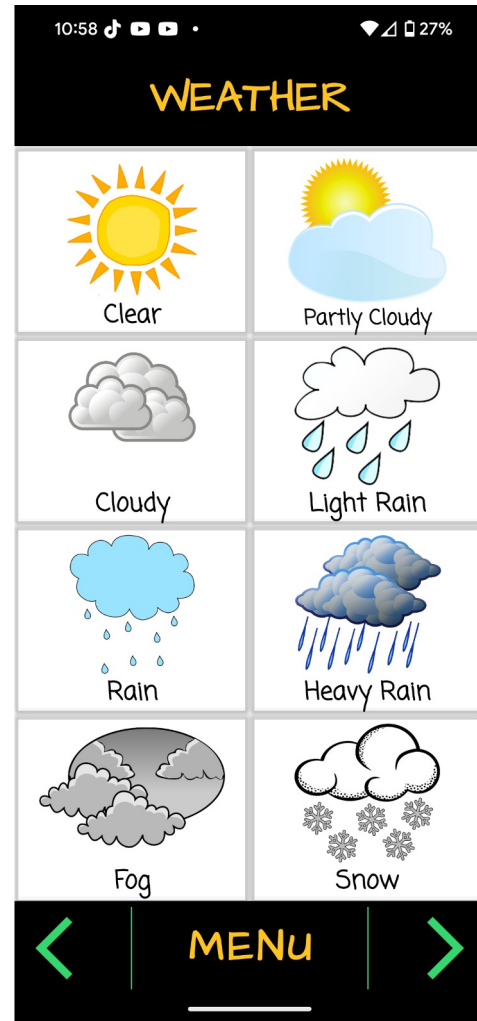
 Export

NAME	DATE	SITE	TIDE	WEATHER	WATER SURFACE	WIND SPEED	WIND DIRECTION	RAINFALL	WATER DEPTH	SAMPLE DISTANCE	AIR TEMPERATURE	WATER TEMPERATURE	SECCI DEPTH	BOTTOMED OUT	TUBE USED	PLASTIC BOTTLE	GLASS BOTTLE	COMMENTS
CreekWatche	2022-05-10	MTVE	High	Clear	Ripples	Calm	South West	Unusual Storm	218	20.0 ft	16.7	14.2	72	false	false			
CreekWatche	2022-09-27	WHVN	Low	Clear	Choppy	Light	nan	Unusual Storm	90	100.0 ft	20.7	22.2	65	false	false			
CreekWatche	2022-07-12	PIWH	Low	Clear	Ripples	Light	nan	Unusual Storm	10	5.0 ft	25.4	26.7	5	false	false			
CreekWatche	2022-03-29	AMPH	Middle Flooding	Clear	Ripples	Calm	nan	Heavy	148	1.0 ft	2.8	9	107	false	false			
CreekWatche	2022-05-15	PAPO	Non-Tridal	Clear	Heavy Chop	Medium	nan	Light	20	10.0 ft	22.1	12.3	75	false	false			
CreekWatche	2022-07-12	NITH	Middle Flooding	Clear	Calm	Calm	nan	Unusual Storm	160	60.0 ft	30.7	28.6	35	false	false			
CreekWatche	2022-05-24	LOCO	Middle Falling	Light Rain	Choppy	Light	West	Light	2.7	50.0 ft	14.8	24.3	45	false	false			
CreekWatche	2022-07-12	MTVE	Middle Flooding	Clear	Heavy Chop	Medium	nan	Unusual Storm	101	6.9 m	34.5	26.7	30	false	false			

The App







10:58 [icons] 27%

WIND SPEED i

Heavy 12+ mph

Medium 5-12 mph

Light 0-5 mph

Calm 0 mph

< MENU >

10:58 [icons] 27%

WIND DIRECTION i

< MENU >

10:58 [icons] 27%

RAINFALL (PAST 48 HR) i

Unusual Storm

Heavy >15"

Medium 5-15"

Light 0.5-5"

Trace <0.5"

None

< MENU >

WATER DEPTH



MEASUREMENT



MENU



SAMPLE DISTANCE



MEASUREMENT



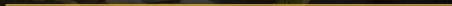
MENU



AIR TEMPERATURE



32.0 °C

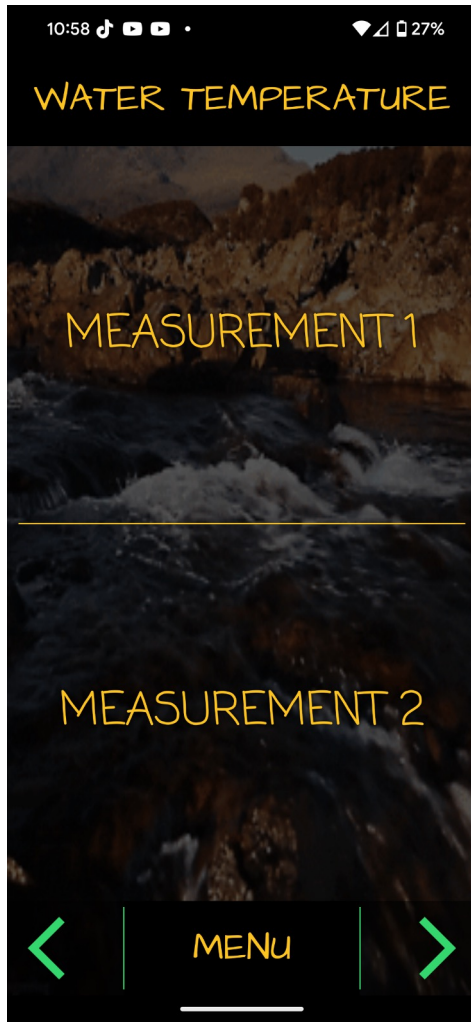


13.0 °C



MENU



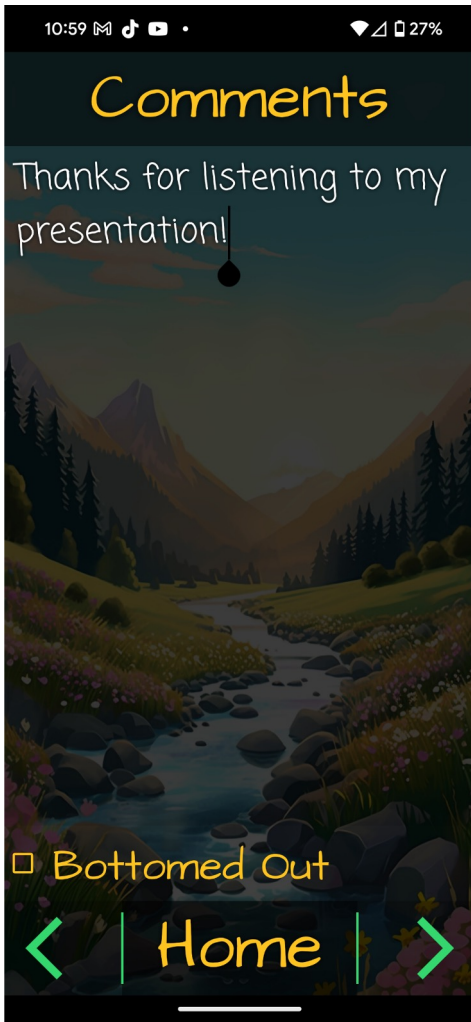


Comments

Thanks for listening to my presentation!

□ Bottomed Out

< | Home | >



10:59 [icons] 27%

REVIEW

WIND DIRECTION
Tap to set

RAIN
Tap to set

WATER DEPTH
Tap to set

SAMPLE DISTANCE
Tap to set

AIR TEMP
32 °C, 13 °C

WATER TEMP
Tap to set

SECCHI DEPTH
Tap to set

SUBMIT

11:00 [icons] 27%

REVIEW

WIND DIRECTION
N

RAIN
Heavy

WATER DEPTH
2 cm

SAMPLE DISTANCE
2 m

AIR TEMP
32 °C, 13 °C

WATER TEMP
1 °C, 2 °C


SECCHI DEPTH
238.5 cm, 111.11 cm

SUBMIT

11:00 [icons] 27%

SUBMIT

Form
Submitted



Thank you
for being a
Creekwatcher!

HOME



Any Questions?