Tuesday Level Up Guide

- ❏ 1. Obtain and import the "NEW_Base.hex" file into Makecode.
- ❏ 2. Add images to display for the weaker signal strengths. (The checkmark is the strongest).
- ❏ 3. Add a block after showing the checkmark to show the "receivedString" the beacon is sending.
- ❏ 4. Load the program onto the Microbit and keep track of all the words you receive from the beacons; show the message you've received to an instructor.

- ❏ 5. Update your program to be able to change radio groups using the "A" and "B" buttons.
- ❏ 6. Add checks (conditional / if this, then) to the variable that keeps track of the radio group to only decrease if it's greater than 7, and only increase if its less than 12.
- ❏ 7. Once again, find all the beacons and keep track of the messages received. Show an instructor the recovered message.
- ❏ 8. Explain to an instructor how you've utilized what you've learned about programming so far to update the beacon software.

- ❏ 9. Create a variable and set it equal to an empty array of strings. Rather than displaying the receivedString, store it in the array so you do not have to manually keep track of the messages. (Remember to check if the message has already been stored previously so you don't get duplicates). Add functionality to your program that on button A+B pushed, loops through the array and displays each of the messages received.
- ❏ 10. Add functionality to your program that scans through channels 1 through 50 and stores any messages received from the beacons.
- ❏ 11. Once again, go and get all of the messages the beacons are sending, this time across channels 1-50 and show an instructor the complete message.
- ❏ 12. Explain to an instructor how using an array allowed you to let the computer keep track of the received messages rather than manually writing them down. Additionally, explain why the Microbit loop through channels 1-50 is much faster than manually changing the channels and looking for beacons across that many channels.