Morse Code Workshop

A micro:bit makecode project (mentor guide)

Base character types:

morse_decoder

morse_encoder

morse_transmitter

morse_receiver

morse_transceiver

Mentor support characters:

morse_channel_admin

morse_echo_challenge

morse_messenger_challenge

morse_translator

morse_decoder

decodes user input morse signals into alphanumeric characters

<u>user input:</u>

button A == dot, button B == dash, tilt left == confirm inputs and decode

<u>LED output:</u>

count of morse signals input by user

listing of morse signals entered as zeros and ones (at development time only)

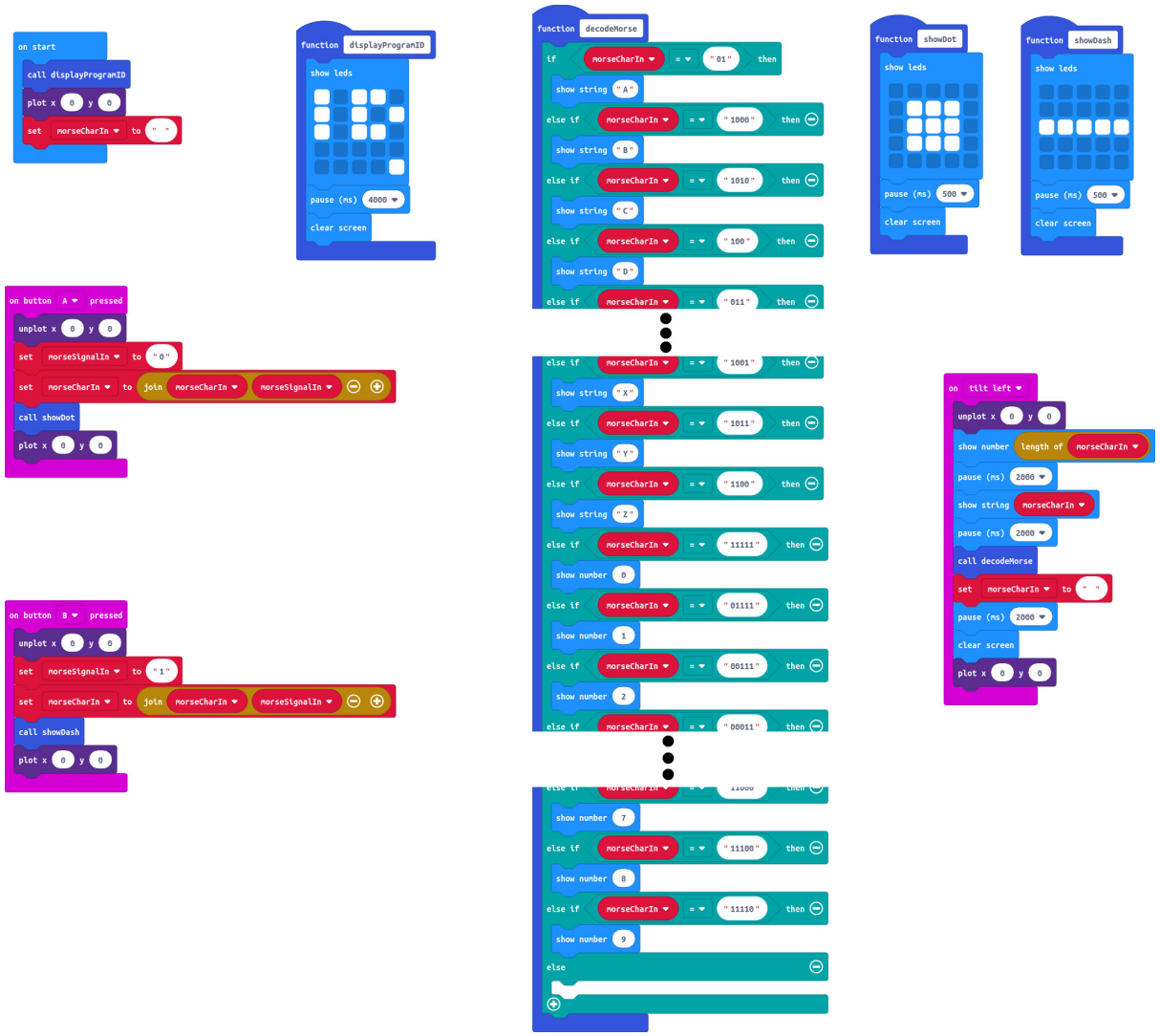
the decoded alphanumeric character

Program plots and unplots led 0,0 on start to indicate program running.

Program replots 0,0 after show... functions to indicate ready for next input

debugging data (confirmation of length of morseCharIn string and it's contents) left in for now. remove later to clean up, or leave in as useful feature?

The program can only decode single alphanumeric characters at a time at the moment because there is no way to recognise an inter-character pause. Therefore characters 'BE' (-... .) would not be distinguishable from the number '6' (-....)



morse_encoder

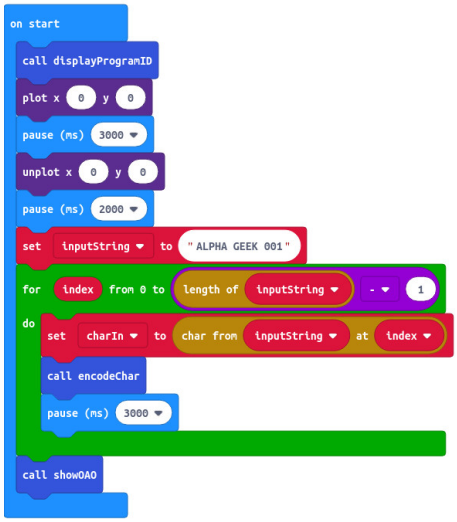
iterates though each character of a pre-defined input string, encoding each into morse code and outputting the morse signals on led display.

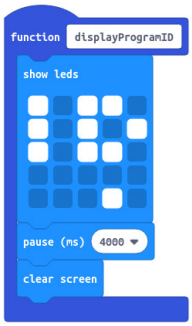
Program plots and unplots led 0,0 on start to indicate program running.

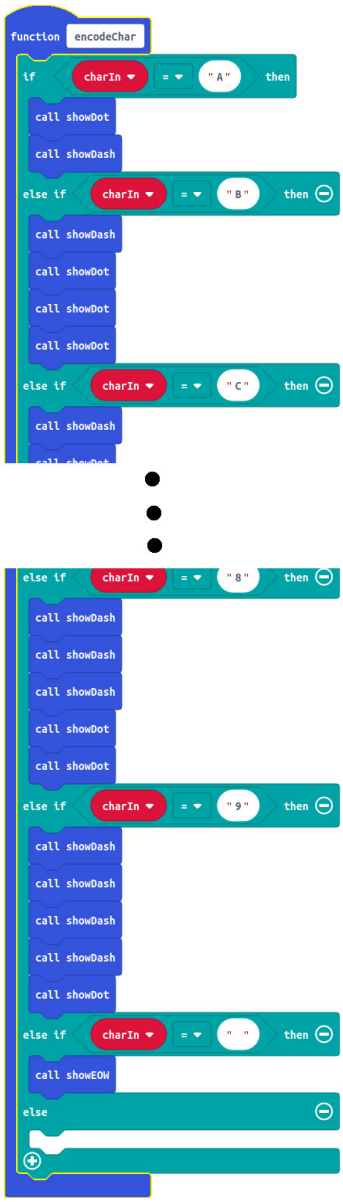
timing of dots and dashes, intra and inter character spaces, inter word spaces roughly adopted:

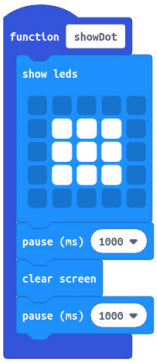
char 1, intra-char 1, inter-char 3, inter-word 7

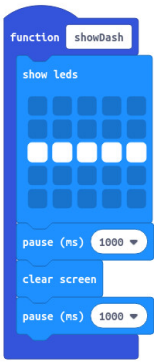
Further work:
ability to vary the speed of morse output
loop through a number of pre-defined strings
addition of buzzer output

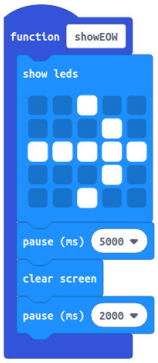


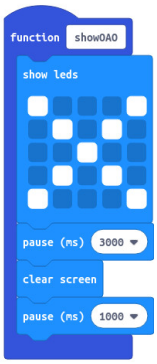












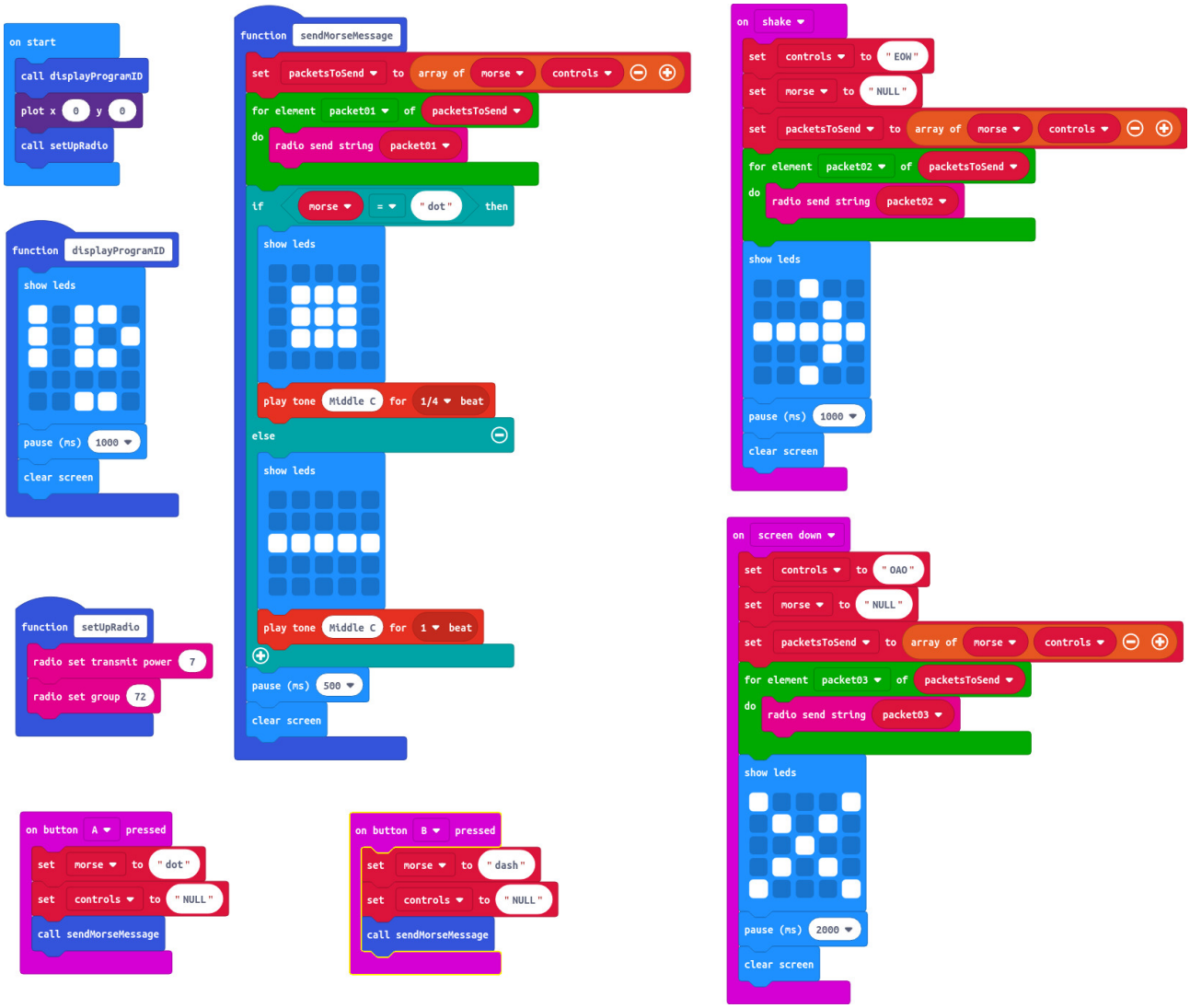
morse_transmitter

simply echoes morse signals corresponding to user input to the LED display, then transmits that morse signal

channel must be configured.

To avoid that annoying transmission delay, we must send packets BEFORE we show LEDs!

Program plots led 0,0 on start to indicate program running.

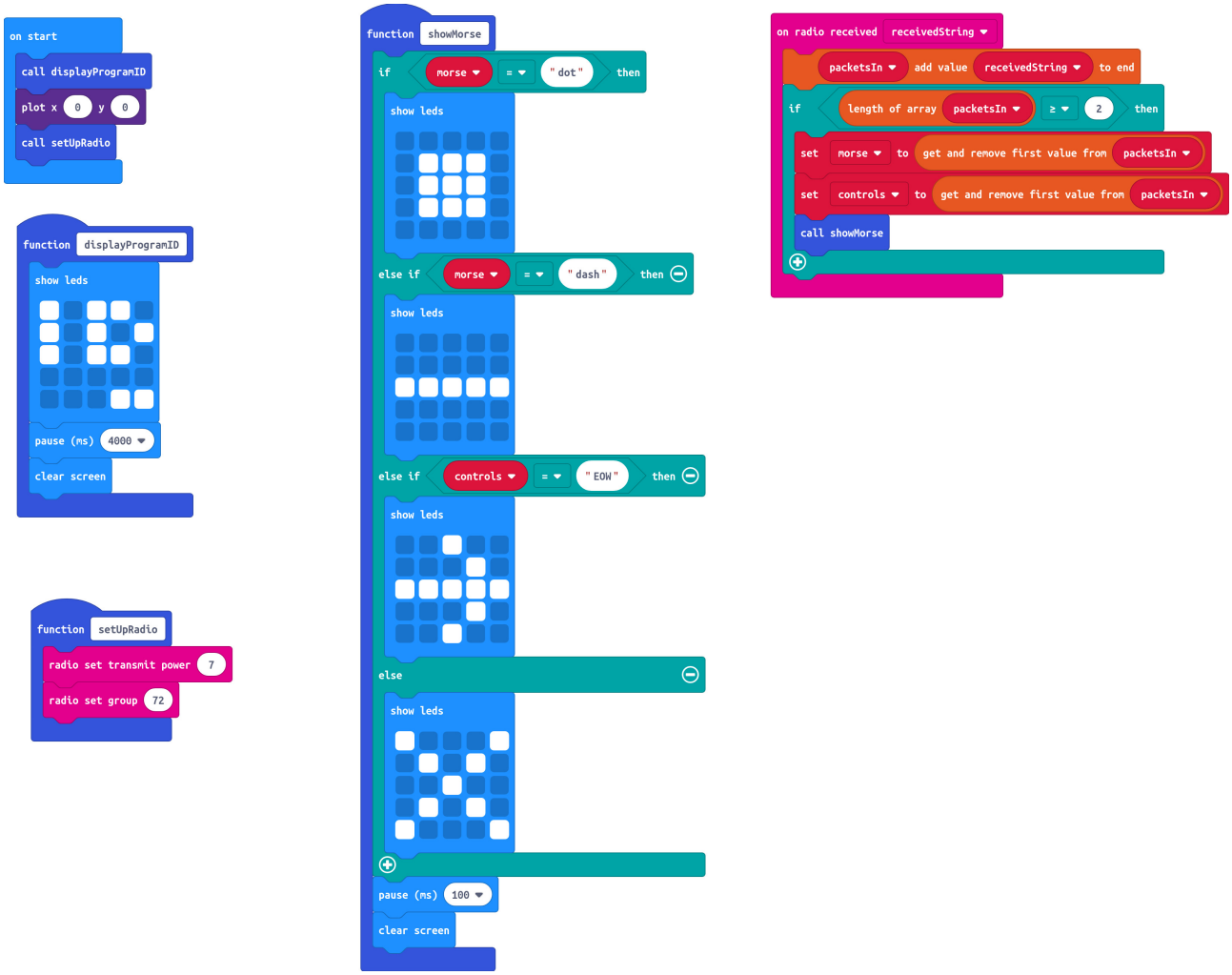


morse_receiver

simply receives morse signals and echoes each signal received to the LED display

channel must be configured.

Program plots led 0,0 on start to indicate program running.



morse_transceiver