Challenge 5: Let Pico Talk in Code

Have you flashed the Pico LED in C or Python? What's next? Some Pi Makers already have working projects, other are just starting. Let Pico Talk in Code is a challenge for all Pico user; those new to Pico and others with working projects. The challenge can be completed with little or no additional hardware, just the on-board LED. Here are the details.

Hardware:

- Pico board with the default LED or
- Pico board using any other LED or
- Pico board using any GPIO pin to drive a piezo buzzer or
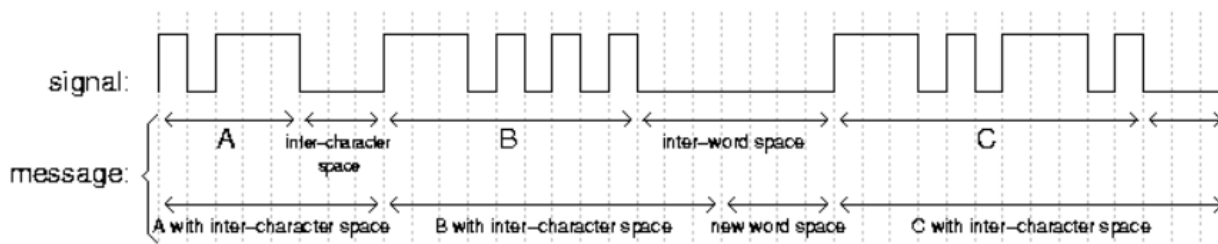- Any combination of the above.

Programming Language:

- Python or
- C/C++-

The Challenge (open to all types of raspberry pi boards and others)

Given a text message, say MessageText = "I LOVE MY PICO ", write a program to flash an LED in Morse Code.

Morse Code Rules:

- The MessageText consists of uppercase letters, numerals 0 to 9, and spaces.
- The flashing rate (speed of the transmission - words/minute) is programmer choice.
- Morse Code character length/spacing
  - Dot 1-time unit
  - Dash 3-time units
  - Space between dots and dashes in the same character 1-time unit
  - Space between characters 3-time units
  - Space between words 7-time units

  - Example: if MessageText = "AB C" then Morse Code: •▬   ▬••• ▬•▬•
  - LED would turn on and off as shown below

Help with Coding:

- Use project to ask for help

Morse Code Table:

A	•—	J	•———	S	•••	1	•————
B	—•••	K	—•—	T	—	2	••———
C	—•—•	L	•—••	U	••—	3	•••——
D	—••	M	——	V	•••—	4	••••—
E	•	N	—•	W	•——	5	•••••
F	••—•	O	———	X	—••—	6	—••••
G	——•	P	•——•	Y	—•——	7	——•••
H	••••	Q	——•—	Z	——••	8	———••
I	••	R	•—•	0	—————	9	————•