Robin loves Bollywood dance, but needs some help learning the moves. They wonder if it is possible to use the glove to help them learn a sequence of moves, so that they can practice for a competition.

Instead of watching a video, Robin thinks it will be possible to program a sequence of moves into the glove, and get the glove to beep a different note when they move their hand to that position; that way, the glove will be 'training' them to learn the dance sequence.

Robin has heard that you are a real whizz with your micro:bit coding now, and has come to you to ask for some help with the code. Can you help them with this problem? In today's lesson you will help Robin to design a program for the 'Trainer Glove' project.

By doing this, you will learn about:

- ❑ event handlers
- ❑ if/else statements
- ❑ variables, including string variables
- ❑ string literals
- ❑ indexing into string variables
- ❑ passing parameters to functions.

You will also learn a bit more about the benefits of open source.

You will need:

- ❑ your assembled MiniMU glove;
- ❑ the MakeCode web coding editor;
- ❑ a mirror to practice your dance moves in front of.

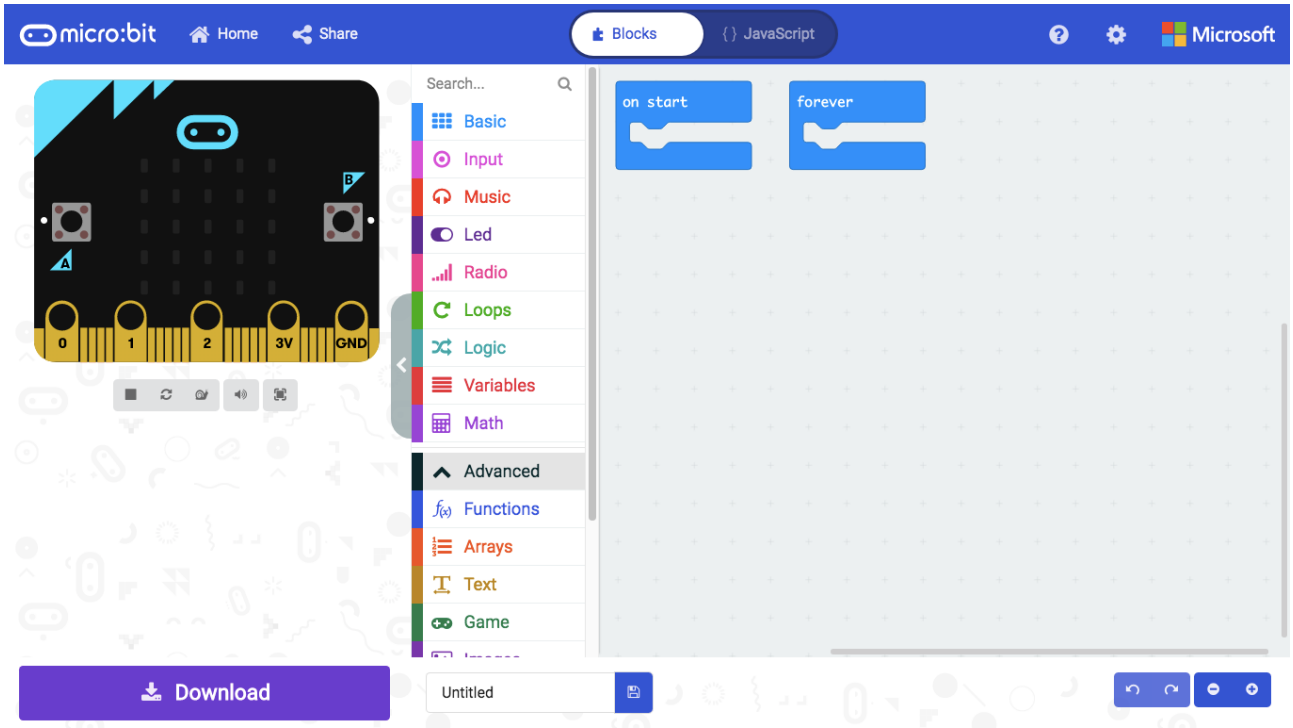


Figure 1: The MakeCode web coding editor.

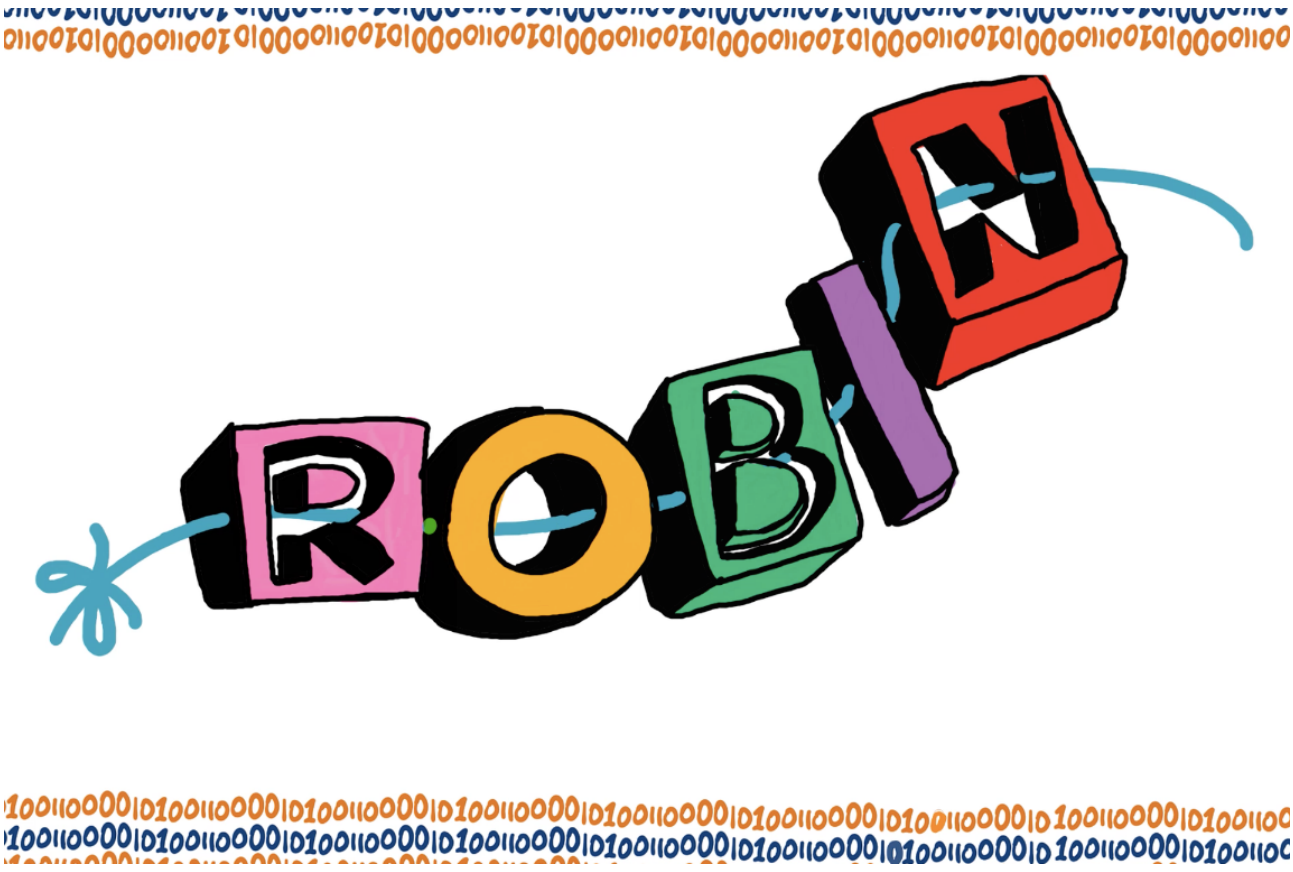


Figure 2: A string of characters, is like a name bracelet.
A character is a letter, digit, or symbol.

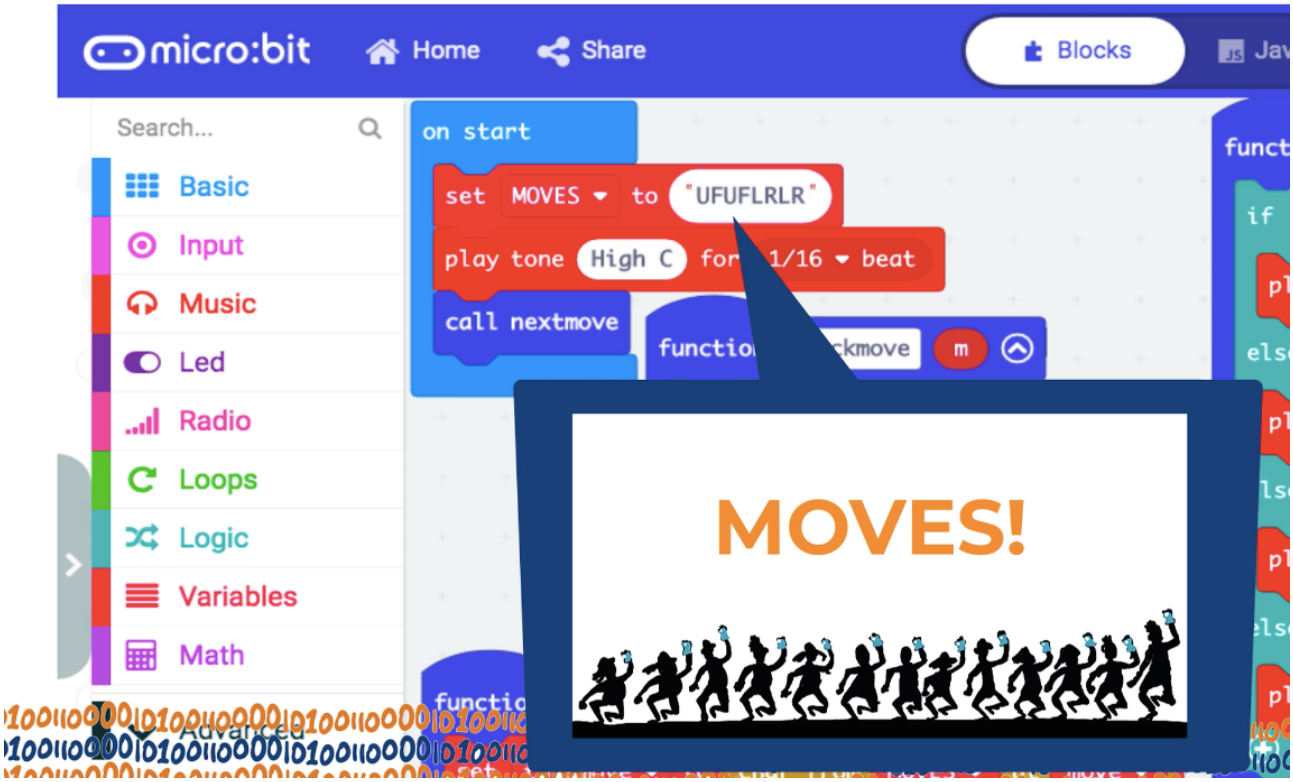


Figure 3: String variable 'MOVES' has one letter for each move.

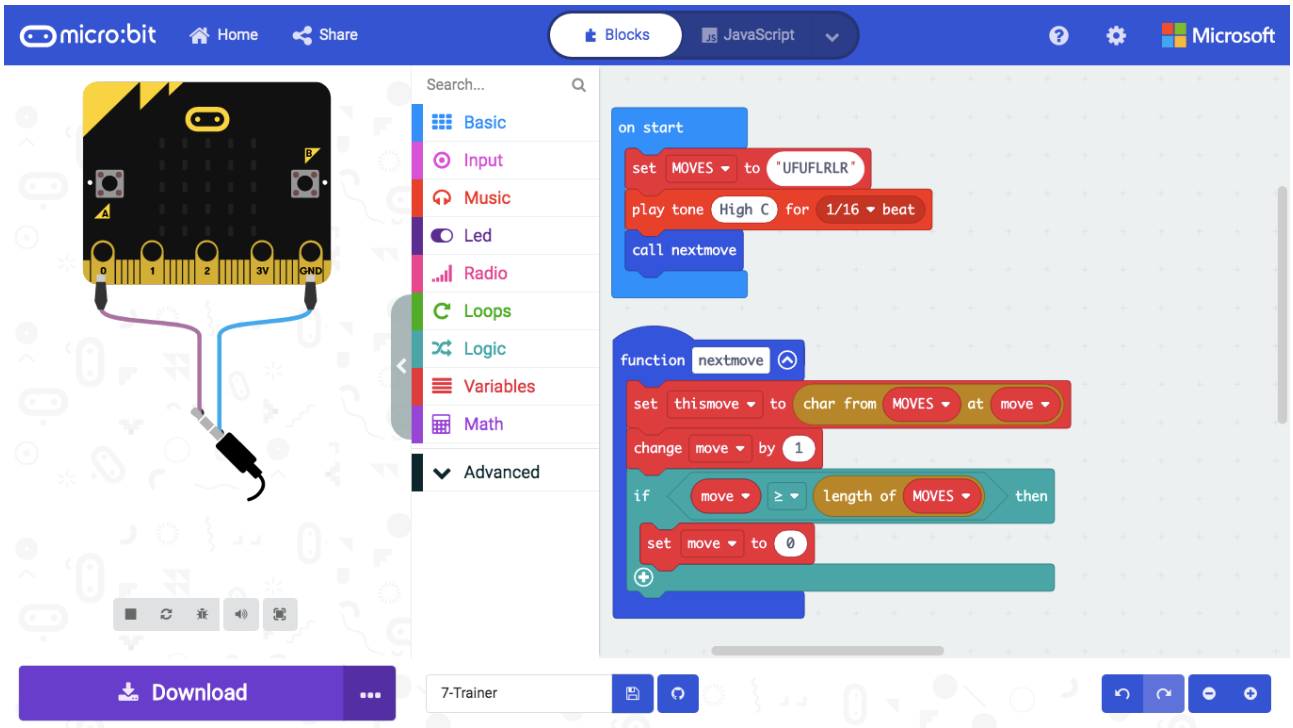
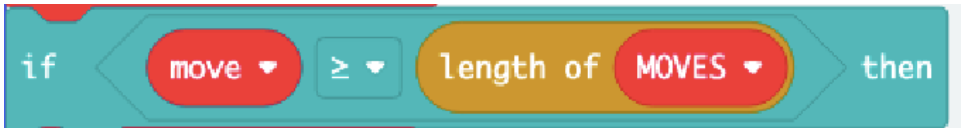


Figure 4: The OnStart event handler and NextMove function.



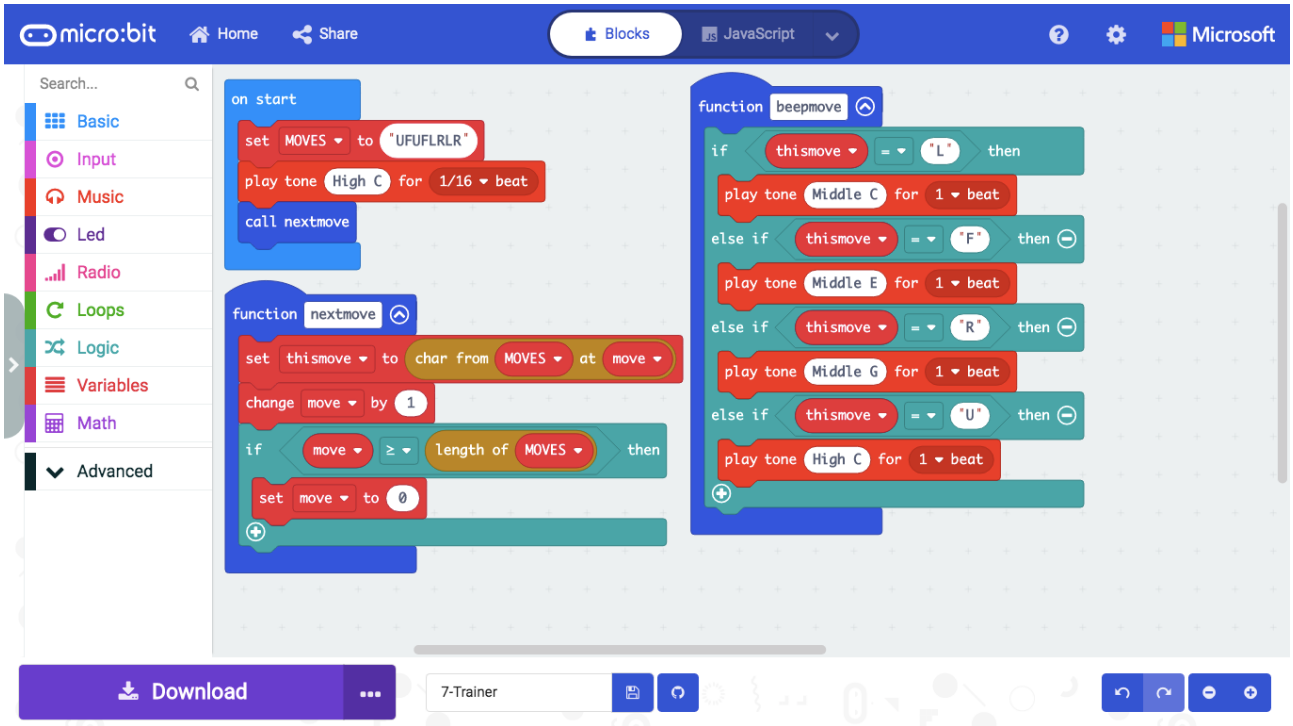


Figure 5: The BeepMove function.

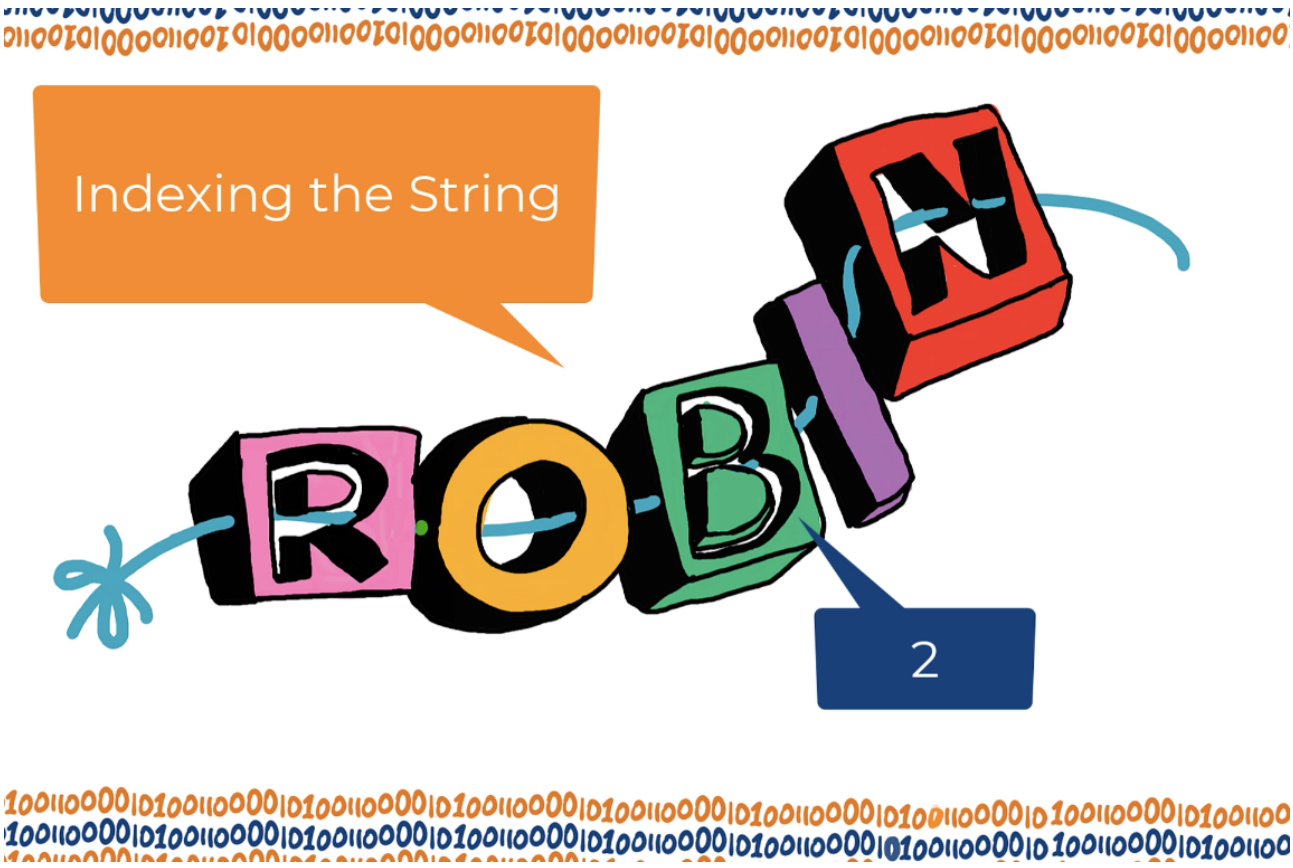


Figure 6: Indexing a name bracelet is like indexing a string. 0='R', 1='O', 2='B', 3='I', 4='N' and the length is 5 characters.

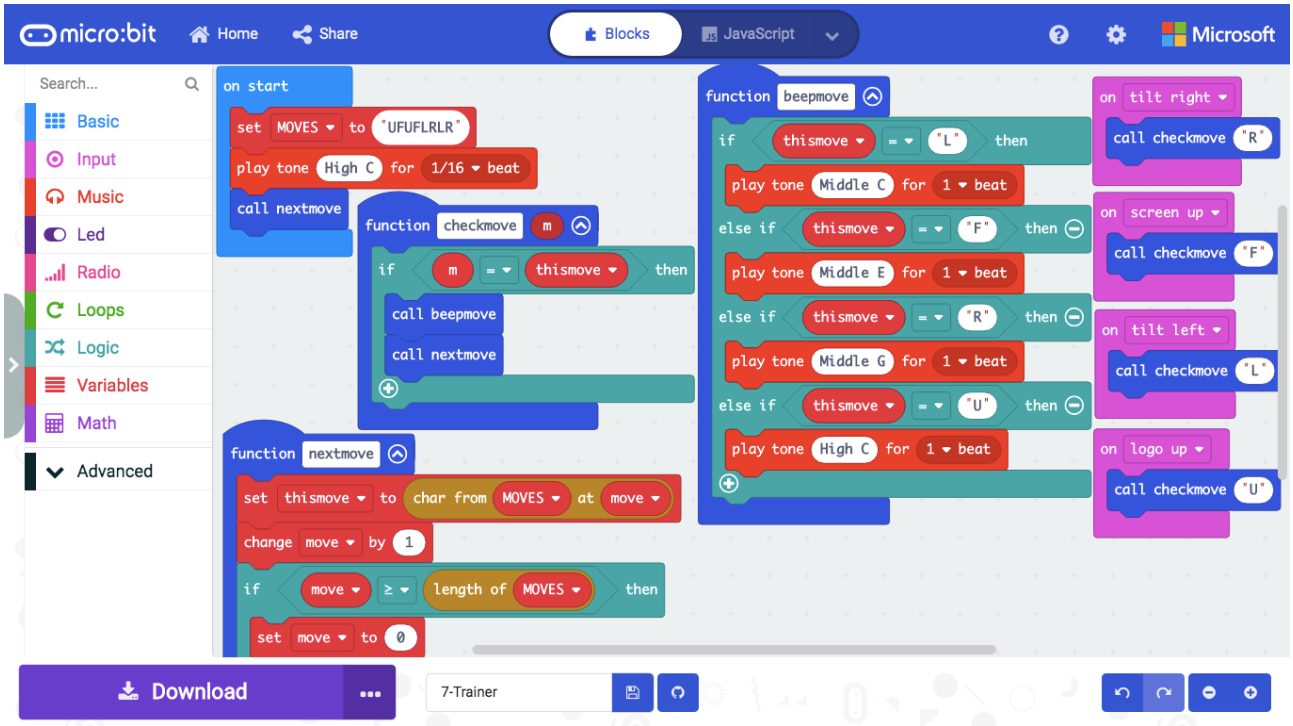


Figure 7: CheckMove function with parameter, and gestures for LogoUp, ScreenUp, TiltLeft, TiltRight.

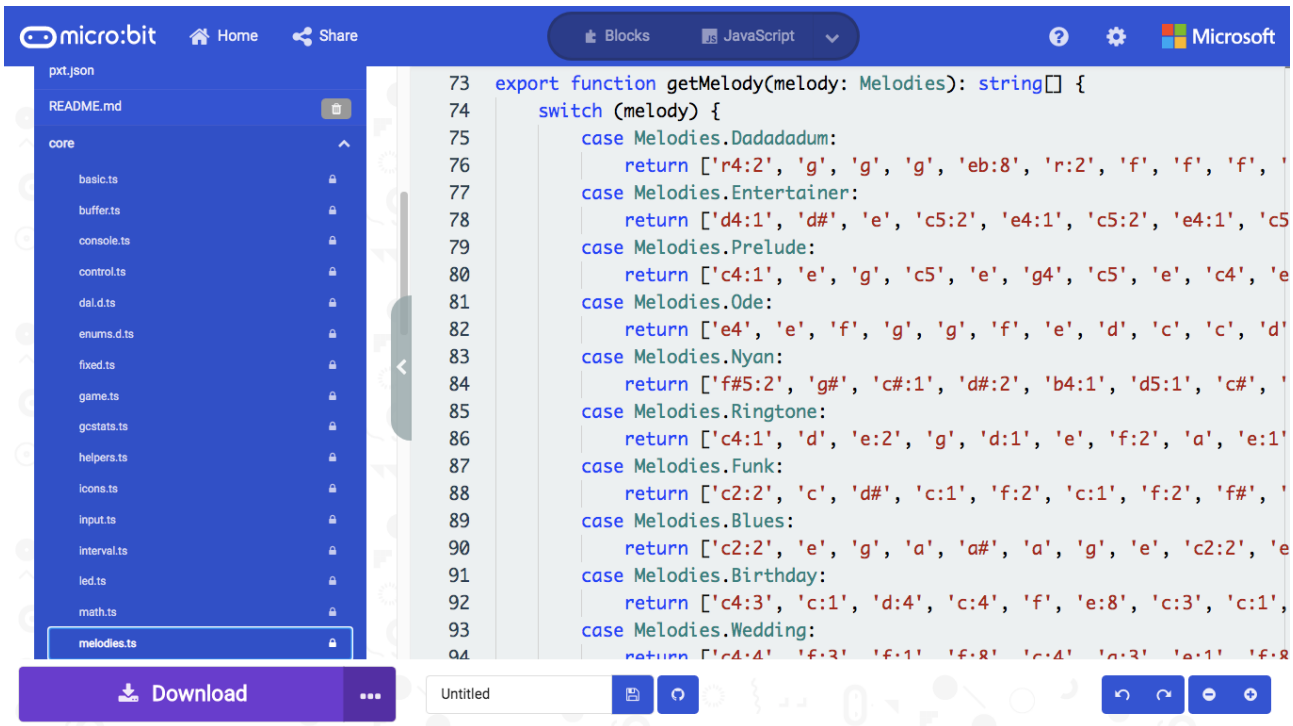


Figure 8: Javascript 'Open Source' code for melodies.
Click: JavaScript >> Explorer >> Core >> Melodies.ts
Scroll to: getMelody

- Executive Producer
  Amanda Brock, CEO,
  OpenUK
- Creative Director
  David Whale
- Production Assistant
  Kim Russell
  OpenUK
- Educational Consultant
  Pamela Boal
  Morrisons Academy, Crieff
- Animation
  drawnalism
- Voiceover
  Steph Bower

Supported by

Red Hat

GitHub PIMORONI micro:bit

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CC BY SA

P.S. *Has anyone seen my cup of tea...? [Steph].*

Additional Information

Characters stored in strings usually conform to the ASCII code. This assigns a unique code to each letter, digit and symbol. Each code in the ASCII character set takes up 7 bits of storage.

Later extensions and improvements have been made to support a wider range of symbols and letters for worldwide support of all languages, and UNICODE provides many additional 'pages' of character codes that support all the different written languages.

The ASCII code was published in 1969 by Vint Cerf when he was at UCLA, and is defined in a document called RFC20. An RFC is a 'request for comments' and is a document that proposes a new internet standard.

Vint Cerf is one of the pioneers of The Internet, and has authored many internet standards.

He currently works as Chief Internet Evangelist at Google. You can read more about him here:

[1] https://en.wikipedia.org/wiki/Vint_Cerf

[2] https://research.google/people/author32412/

ASCII

[3] https://www.bbc.co.uk/bitesize/guides/zp73wmn/revision/4