

# Programming Workshops

Principles of Computing

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Dr. Joseph Walton-Rivers

Week 3

# Today's Topics

Audio in Unity

Multiple Tracks

## Audio in Unity

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1. Last week we looked at generating audio in Unity procedurally
2. This week, we're going to extend this idea to generating multiple audio tracks
3. we're going to make use of some of the logic we've learnt in theory (mod), so check back over that if you get stuck

## Multiple Tracks

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# Real time systems and loops

- Recall, are being asked for small sections of track (buffered)
- When we calculate position there are two positions we care about:
  - Position in the buffer/array (array index)
  - Position in the audio sequence (frame since start of audio)
- These probably won't be the same thing

## Is this just audio?

- No! any system where we are expecting to process data up to a fixed size can have this issue
- Also can come up if writing low-level network code
- Slightly more annoying in that case, as the buffer can contain less than one or more than one complete message

## IRC (simplified)

- message are split by CR LF
- the buffer can contain up to  $n$  characters
- if we find a whole message, we process it then re-check the buffer from the position we last processed
- if not, we copy the buffers contents and ask for more
- this is effectively a **Queue** of symbols

h | e | l | l | o | CR | LF | w | o | r



- We can think of our audio buffer in the same way!
- A queue of audio 'frames' waiting to be processed by the audio device

## Next week...

- Next week, Sokol will (hopefully) be running his experiment.
- Please come along so he can get data!