Sequencing - Knowledge Organiser

GLOSSARY	
CV (Control Voltage)/Gate	An analogue method of triggering notes on a sequencer
Quantisation	Moves the timing of the beginning of a note to the nearest grid division

QUANTISE VALUES

- The numbers on quantise settings refer to the smallest divisions on the grid the MIDI notes will snap to
- The bottom number in a quantise resolution determines how many of a note can fit into one bar of 4/4

| 1/1 | 1/2 | 1/4 | 1/8 | 1/12 | 1/16 | 1/24 | 1/32 |
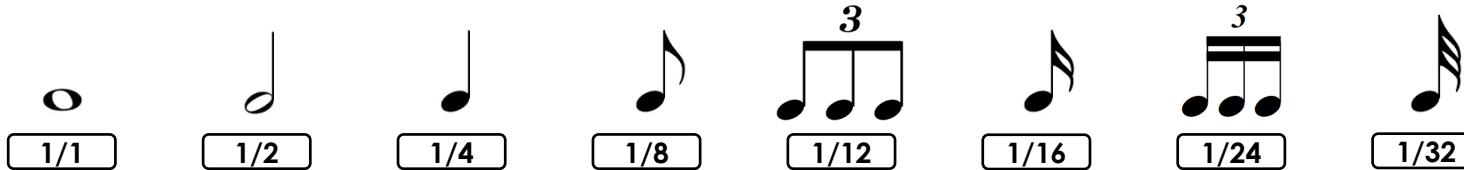
PERCENTAGE QUANTISE

- Percentage quantise is used to keep some of the music's natural flexibility in timing
- The notes are moved a percentage towards the hard quantise position

SWING QUANTISE

- Swing quantise is used to add a swung feel to straight quavers/semiquavers
- Swing quantise works by slightly delaying the second note in a pair of quavers/semiquavers
- The strength of the swing can be adjusted

STEP SEQUENCING

- Notes are entered into a sequencer's memory one at a time onto a grid/series of buttons
- Step sequencers were built into many analogue synthesisers in the 1970s

Step Sequencer menu bar

Pattern Browser/Inspector   Row headers   Step grid
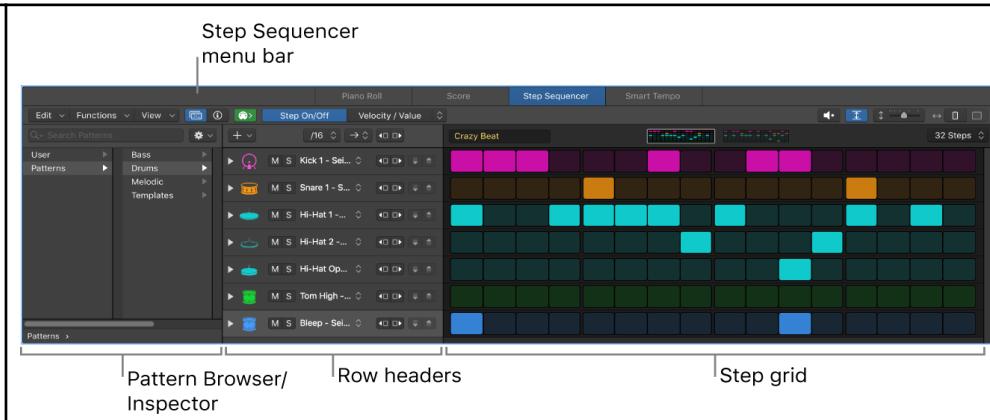
ANALOGUE SEQUENCERS
• Use CV/gate signals to trigger a note on a sequencer   • A voltage is sent from the sequencer to control the opening and closing of a gate to start and stop a note

Limitations:
• Limited number of steps and limited polyphony
    • Analogue sequencers are typically monophonic and usually only have 8, 16 or 32 steps
    • Makes it difficult to create more complex, evolving sequences
• Lack of precision
    • Analogue sequencers rely on circuitry to generate sequences, which can lead to imprecise tuning and timing
• Lack of storage
    • Sequences cannot be stored like they can on digital sequencers
• Limited control over parameters
    • Parameters such as pitch, gate length and velocity had limited room for variation
• Hard to sync with other devices
    • Analogue sequencers rely on clock signals as opposed to MIDI and other digital synchronisation methods

DIGITAL SEQUENCERS
• Use a series of MIDI messages stored in a digital format • Digital sequencers were often combined and used in conjunction with synths and samplers

Limitations (Early Digital Sequencers):
• Limited storage capacity
    • Early digital sequencers had limited memory and could only store a small number of sequences or patterns
• Limited sequencing options
    • Some early digital sequencers only allowed for linear sequencing, meaning that each step had to be programmed in a specific order
• Lack of real-time control
    • Early digital sequencers often required the user to program the entire sequence in advance, which made it difficult to make changes on the fly during live performances
• Complex user interfaces
    • Early digital sequencers often had complex user interfaces that required a lot of time and effort to learn and use effectively
• High cost
    • Early digital sequencers were relatively expensive, which limited their availability to professional musicians and studios