How Sequencers Work

Editing Interface

The heart of the sequencer, the editor allows the user to change stored data either individually or algorithmically (in groups selected and/or changed by rules llike "All velocity data above 80 cut back to 80.") Typical editing features include:

Cut & Paste	Muting tracks	Combining tracks
Erase	Splitting tracks	Scaling parameters
Hand note entry	Changing count off	Clamping
Step note entry	Looping sections	Compressing
Note change	Quantizing rhythm	Transposing
Tempo change	linking sequences	Changing Velocity
Soloing tracks	Copying parts	Mathematical ops

Editing is typically accomplished through a graphic interface but can also be done through a notation intervace or an alphanuumeric interface that shows the actual MIDI data

The editor also gives the user control of many sequencer parameters like what gets filtered or remapped, where data is stored, etc.

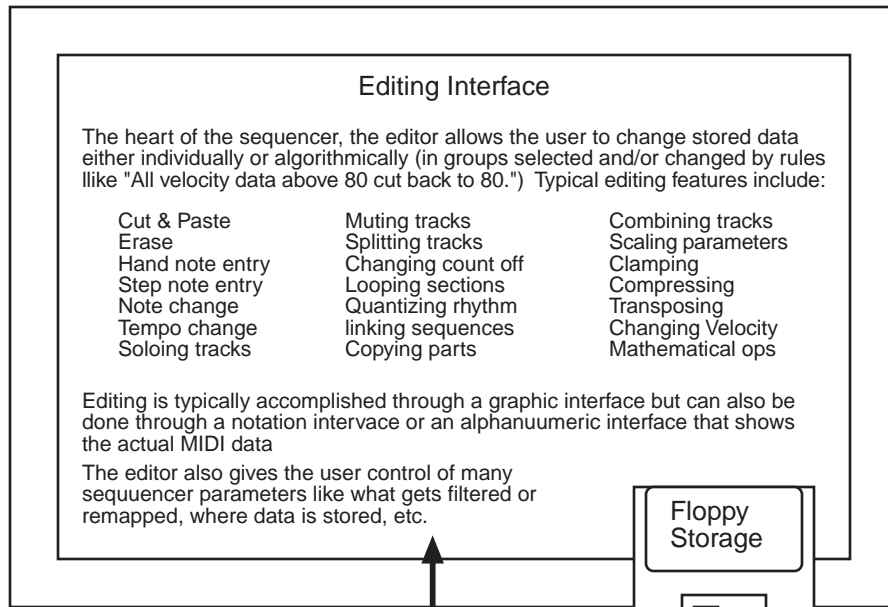**Common filters :**

Aftertouch
Pitch Wheel data
Mod Wheel data
Control changes
Program changes
Note filters

Common mapping functions:

Rechannelize
Transpose
Redefine events

Timer concerns:

Event stamping
Resolution
Ext./Int. sync
Tape sync.
Abs./Rel. sync

Floppy Storage

Timer
Stamps every incoming event with its time of arrival.

Data Filter
Strips off or thins out selected types of MIDI data.

RAM Memory
Stores time-stamped, filtered, mapped data in volatile memory as it comes in from the MIDI input device or is loaded from disk storage.

Hard Disk Storage

FIFO Buffer
Stores in-coming data until it can be processed. "FIFO" keeps it in order.

Data Mapper
Changes one type of data into another type on the fly.

Operating System
Takes care of low level operations like screen imaging, IO sensing, clock timing, CPU management.

Timer
Outputs stored MIDI data at time stamped intervals

Data Filter

Data Mapper

IN

OUT

OUT   IN