Multi-track Turing machines, a specific type of Multi-tape Turing machine, contain multiple tracks but just one tape head reads and writes on all tracks. Here, a single tape head reads n symbols from **n** tracks at one step. It accepts recursively enumerable languages like a normal single-track single-tape Turing Machine accepts.

A Multi-track Turing machine can be formally described as a 6-tuple (Q, X, ∑, δ, q0, F) where −

* **Q** is a finite set of states
* **X** is the tape alphabet
* **∑** is the input alphabet
* **δ** is a relation on states and symbols where

δ(Qi, [a1, a2, a3,....]) = (Qj, [b1, b2, b3,....], Left\_shift or Right\_shift)

* **q0** is the initial state
* **F** is the set of final states

**Note** − For every single-track Turing Machine **S**, there is an equivalent multi-track Turing Machine **M** such that **L(S) = L(M)**.