

Linear Search implementation using Turing machine

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Problem statement

Simulate a linear search algorithm using Turing machines, to search for an element in an array and return the position of the element.

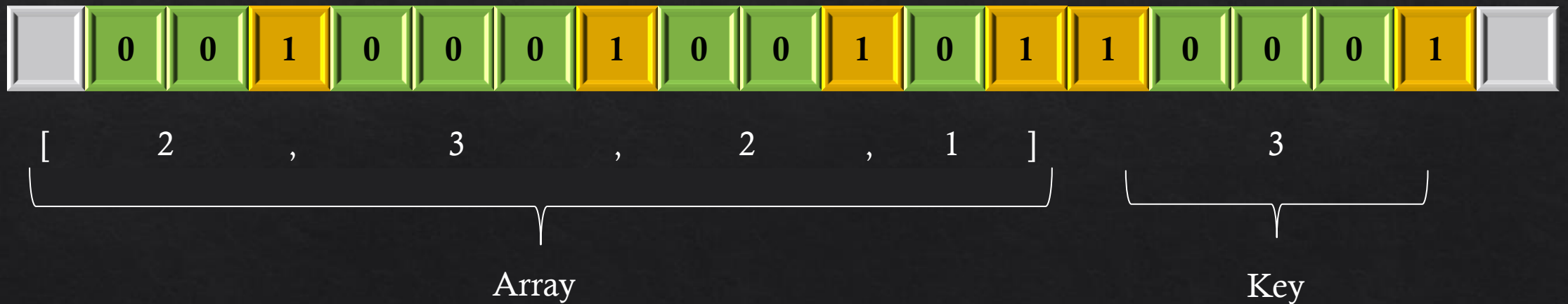
Type of Turing
machine used

Two-way single tape Turing
machine with one header

Format of input string

- ❑ Array elements are separated by delimiter 1.
- ❑ Array and key value separated by delimiter 11.
- ❑ Finally delimiter 1 to indicate end of string.

Example: Array= [2,3,2,1] , Key = 3



Format of output of TM

If element not found, return symbol '1'.

If element is found, return position value in tape.

Example: Output position = 3



Example: Output not found :-

