AP CSP 0.0 homework

1. Finish below Turing machine moves

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tape symbol | Current State A | | | Current State B | | |
|  | Write symbol | Move Tape | Next State | Write symbol | Move Tape | Next State |
| 0 | 1 | L | B | 1 | R | A |
| 1 | 0 | L | B | 1 | L | HALT |

Start at A with an all 0 tape

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sequence | Instruction |  | | | | | | | | | | |
|  |  |  |  |  |  |  | head |  |  |  |  |  |
| 1 | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |  |  |  |  |  |  |

1. Find a real-life Turing machine example.

ex.

Car is a Turing machine with

user input (break, throttle) as tape,

speed as states (stop, low speed, middle speed, high speed),

car change speed based on current speed and user input(table).