Construct a Turing machine that computes the function:
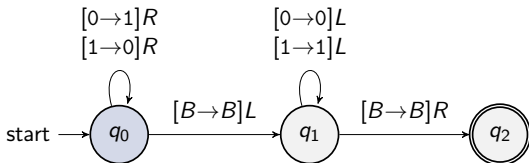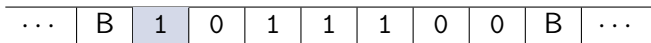
$$f(w) = (\text{the flip of each bit in } w)$$

$\cdots$	B	1	0	1	1	1	0	0	B	$\cdots$

1: Flip each bit of the input: $1 \rightarrow 0$ and $0 \rightarrow 1$
2: Go to the first input symbol
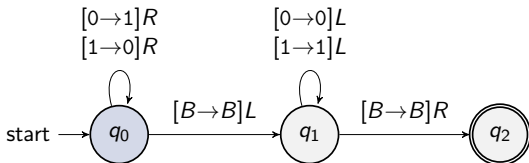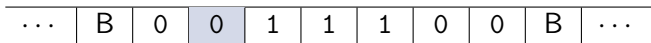
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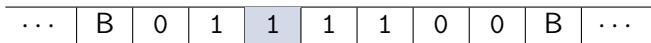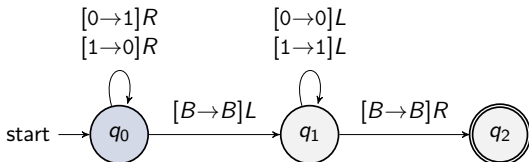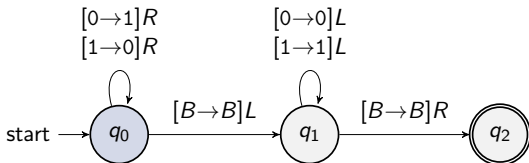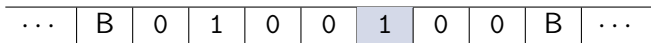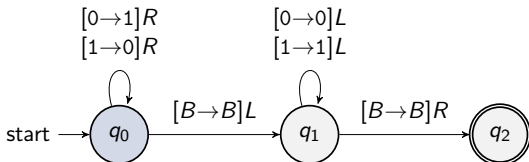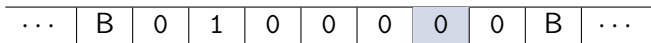| $\cdots$	B	0	1	1	1	1	0	0	B	$\cdots$

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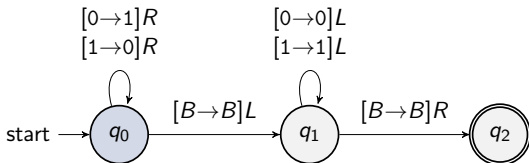| $\cdots$	B	0	1	0	0	1	0	0	B	$\cdots$

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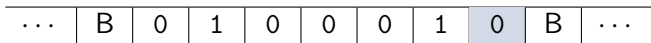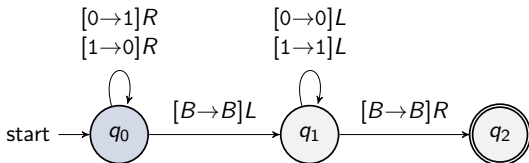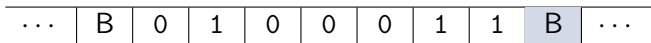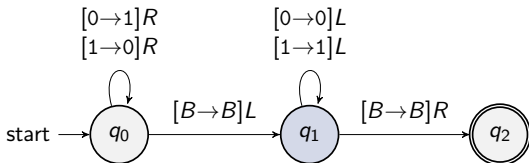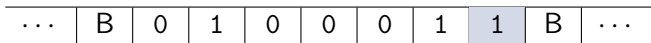| $\cdots$	B	0	1	0	0	0	0	0	B	$\cdots$

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$\cdots$										$\cdots$

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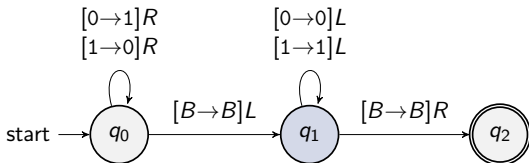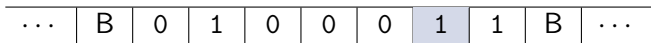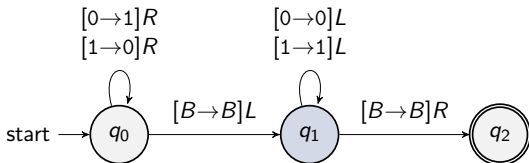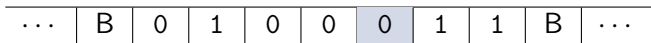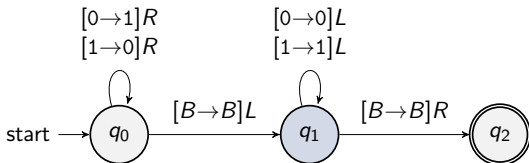Construct a Turing machine that computes the function:

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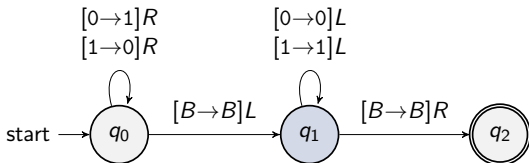| $\cdots$	B	0	1	0	0	0	1	1	B	$\cdots$

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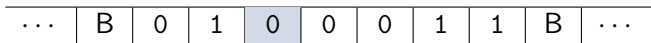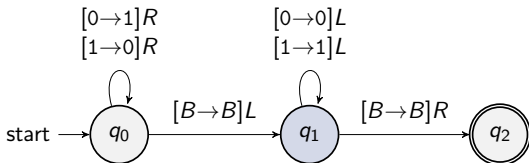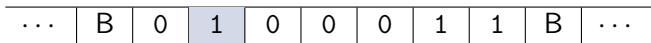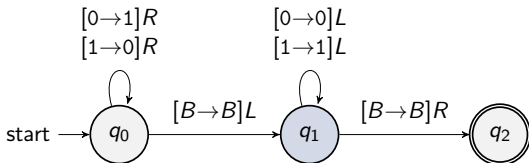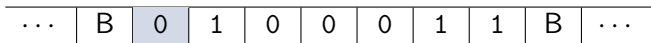| $\cdots$	B	0	1	0	0	0	1	1	B	$\cdots$

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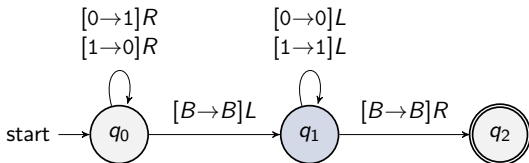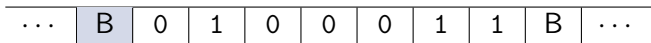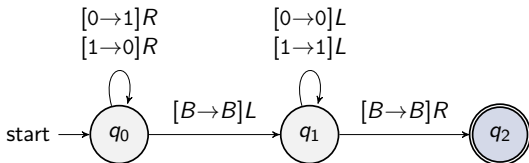| $\cdots$	B	0	1	0	0	0	1	1	B	$\cdots$

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Computed! $f(1011100) = 0100011$