Projeto 4
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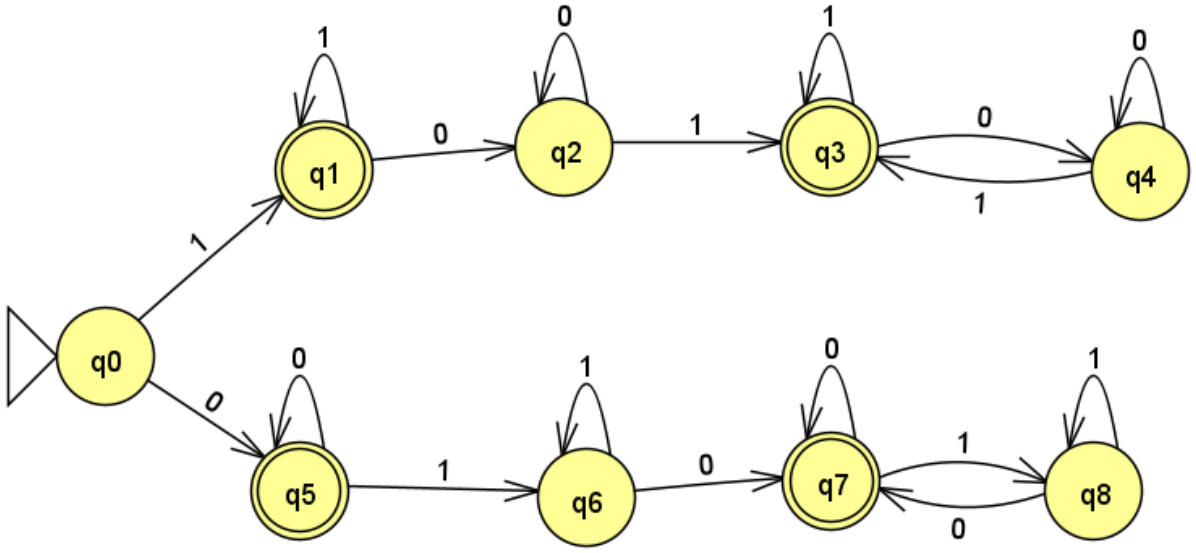
.: Prove que a Linguagem L_1 é regular (considere $\Sigma = \{0,1\}$).

L_1 = {w | w possui o mesmo número de 01 e 10}

DFA para a linguagem L1:



Converta os NFA's em DFA's

1.

	0	1
→ p	{p, q}	{p}
pq	{p, q, r}	{p, r}
pqr	{p, q, r, s}	{p, r}
pr	{p, q, s}	{p}
* pqrs	{p, q, r, s}	{p, r, s}
* pqs	{p, q, r, s}	{p, r, s}
* prs	{p, q, s}	{p, s}
* ps	{p, q, s}	{p, s}

2.

	0	1
→ p	{q, s}	{q}
* q, s	{r}	{q, r, p}
* q	{r}	{q, r}
r	{s}	{p}
* qrp	{r, s, q}	{q, r, p}
* qr	{r, s}	{q, r, p}
s	∅	{p}
* rsq	{s, r}	{p, q, r}
rs	{s}	{p}

3.

	0	1
→ p	$\{p, q\}$	$\{p\}$
$\{p, q\}$	$\{p, q, r, s\}$	$\{p, t\}$
* $\{p, q, r, s\}$	$\{p, q, r, s\}$	$\{p, t\}$
* $\{p, t\}$	$\{p, q\}$	$\{p\}$

4.

a)

ε-NFA 1:

$CL(p) = \{p\}$

$CL(q) = \{q, p\}$

$CL(r) = \{r, q, p\}$

ε-NFA 2:

$CL(p) = \{p, q, r\}$

$CL(q) = \{q\}$

$CL(r) = \{r\}$

b)

ε-NFA 1:

	a	b	c
→ $\{p\}$	$\{p\}$	$\{q, p\}$	$\{r, q, p\}$
$\{q, p\}$	$\{q, p\}$	$\{r, q, p\}$	$\{r, q, p\}$
* $\{r, p, q\}$	$\{r, q, p\}$	$\{r, q, p\}$	$\{r, q, p\}$

ε-NFA 2:

	a	b	c
$\{p\}$	$\emptyset$	$\{q\}$	$\{r\}$
$\{q\}$	$\{p, q, r\}$	$\{r\}$	$\{p, q, r\}$
* $\{r\}$	$\emptyset$	$\emptyset$	$\emptyset$
* $\{p, q, r\}$	$\{p, q, r\}$	$\{q, r\}$	$\{p, q, r\}$
* $\{q, r\}$	$\{p, q, r\}$	$\{r\}$	$\{p, q, r\}$