automata.pic

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Given the alphabet Σ composed by the symbols "0" and "1", the finite state machine below recognizes the language of strings on that alphabet which begin with 1 and end with 0 (and can have some optionally empty substring s between both).

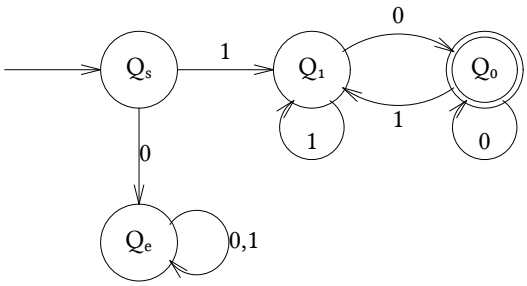

Figure 1: $[w{:}String(\Sigma) \mid \exists s{:}String(\Sigma),\ w = (1\ s\ 0)]$

This figure was created by the following code:

```
.PS

# include automata.pic
copy "automata.pic"

# draw the arrow to the initial state
arrow

# draw, and name, the states, I have to "move" between them
# The final state is created with the macro Final()
QS: State("Qₛ")
move
Q1: State("Q₁")
move
Q0: Final("Q₀")
move down from QS .s
QE: State("Qₑ")

# Now I draw the transitions/edges/arrows/arcs.
#
# The arguments of Arcabove, Arcbelow, Arrowvert and Arrowhorz
# are:
#       1st: direction of the arrow
#       2nd: State at the left (or top)
#       3th: State at the right (or bottom)
#       4th: Symbol of the transition
#
# Selfabove, Selfbelow, Selfleft and Selfright draw an arc from
# an state to itself.  Their arguments are:
#       1st: State
#       2nd: Symbol of the transition
#
Arrowhorz(->, QS, Q1, "1")
Arrowvert(->, QS, QE, "0")
Arcabove(->, Q1, Q0, "0")
Selfbelow(Q1, "1")
Arcbelow(<-, Q1, Q0, "1")
Selfbelow(Q0, "0")
Selfright(QE, "0,1")

.PE
```

Figure 2: Code of figure 1