

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).

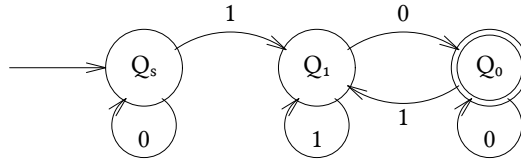


Figure 1: $[w:String(\Sigma) \mid \exists s:String(\Sigma), w = (1 s 0)]$

This figure was created by the following code:

```
.PS

# include automata.pic
copy "automata.pic"

# draw the arrow to the initial state
arrow

# draw the states, I have to "move" between them
# I have also to name them, because I'll refer to them later
QS: State("Qs")
move
Q1: State("Q1")
move
Q0: Final("Q0")

# Now I draw the transitions/edges/arrows/arcs.
#
# The macros Arcabove and Arcbelow draw an arc above or below
# the space between two states. The arguments of Arcabove and
# Arcbelow are:
#     1st: direction of the arrow
#     2nd: State at the left
#     3th: State at the right
#     4th: Symbol of the transition
#
# Selfabove and Selfbelow draw an arc from an state to itself.
# The arguments of Selfabove and Selfbelow are:
#     1st: State
#     2nd: Symbol of the transition
#
Arcabove(->, QS, Q1, "1")
Selfbelow(QS, "0")
Arcabove(->, Q1, Q0, "0")
Selfbelow(Q1, "1")
Arcbelow(<-, Q1, Q0, "1")
Selfbelow(Q0, "0")

.PE
```

Figure 2: Code of figure 1