

JFLAP2TikZ

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Introduction

[JFLAP](#)¹ is a popular Java program for experimenting with finite state machines, Turing machines and other concepts from Formal Languages and Automata Theory. Version 7 of JFLAP can export JPG, PNG, GIF, BMP, or SVG images. JFLAP2TikZ is a [Groovy](#)² script that converts a JFLAP jff file representing a finite automaton, pushdown automaton, or Turing machine into a \LaTeX file depicting the automaton graphically using TikZ.

Requirements

To use JFLAP2TikZ you will need [Java](#) installed. Additionally, you may find it useful to have [Groovy](#) installed as well. You will need to download either `jflap2tikz.jar` (if you only have Java installed) or `jflap2tikz.groovy` (if you also have groovy installed).

Usage

JFLAP2TikZ is invoked from the command line with:

```
java -jar jflap2tikz.jar -i example.jff
```

or:

```
groovy jflap2tikz.groovy -i example.jff
```

In the above cases the output will be written to the console. Use the `-h` option to see the full usage information, which is also given in [Figure 1](#).

Examples

The following figures show machines from the book [JFLAP: An Interactive Formal Languages and Automata Package](#) being converted to TikZ using JFLAP2TikZ. Note that JFLAP2TikZ currently ignores JFLAP state annotations. Furthermore, not all JFLAP files will be converted perfectly. You may have to adjust the scale and/or gridsize, or edit the resulting TikZ code to achieve the effect you want. However, JFLAP2TikZ should provide a good starting point.

¹www.jflap.org

²groovy.codehaus.org

usage: jflap2tikz [options]

Version 1.2

<p><code>-d,--accepting-distance <distance></code></p> <p><code>-g,--grid <size></code></p> <p><code>-h,--help</code></p> <p><code>-i,--input-file <filename></code></p> <p><code>-k,--keep-names</code></p> <p><code>-l,--arrow-length <length></code></p> <p><code>-o,--output-file <filename></code></p> <p><code>-r,--rotate</code></p> <p><code>-s,--scale <x></code></p> <p><code>-w,--arrow-width <width></code></p>	<p>Distance, in pt, between the circles of an accepting state (default is 2)</p> <p>Round positions so that they are on a grid. If a size is given it sets the spacing of the grid (default is 20.0)</p> <p>Show usage information and quit</p> <p>Name of a JFLAP jff file representing a finite automaton, pushdown automaton, or Turing machine. If a file is not given standard input will be used.</p> <p>Use the state names from the JFLAP file. The default is to replace the state names with names of the form '\$q_{id}\$', where id is the unique state number. Note state names will not be sanitized and thus may contain invalid TeX.</p> <p>Length of arrows in points (default is 9)</p> <p>Name of a file for writing output. If this file already exists it will be overwritten.</p> <p>Rotate labels along edges</p> <p>1 pixel in JFLAP = x points in LaTeX (default is 1.0)</p> <p>Width of arrows in points (default is 6)</p>
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Figure 1: Usage information

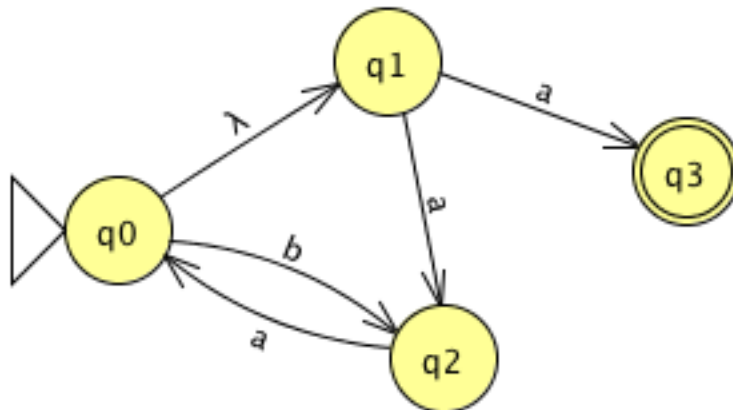


Figure 2: ex0.1a.jff

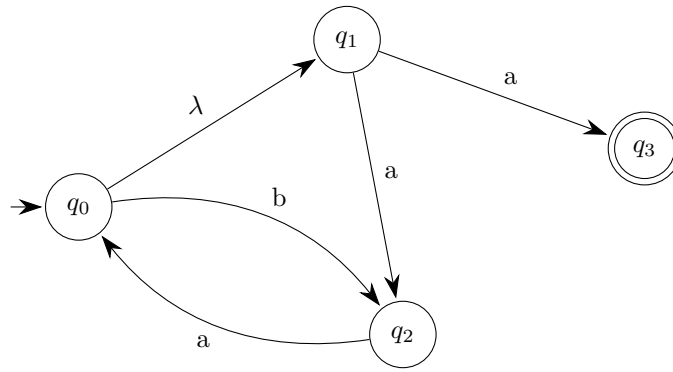


Figure 3: ex0.1a.jff converted to TikZ using default values

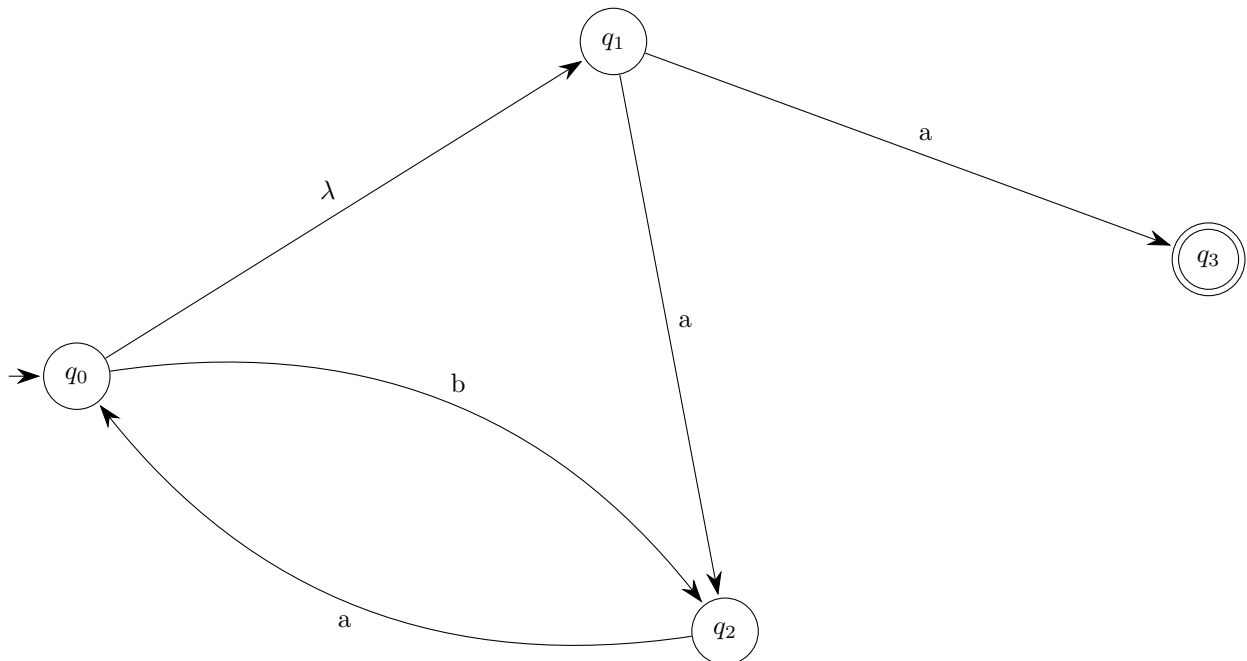


Figure 4: ex0.1a.jff converted to TikZ using a scale of 2

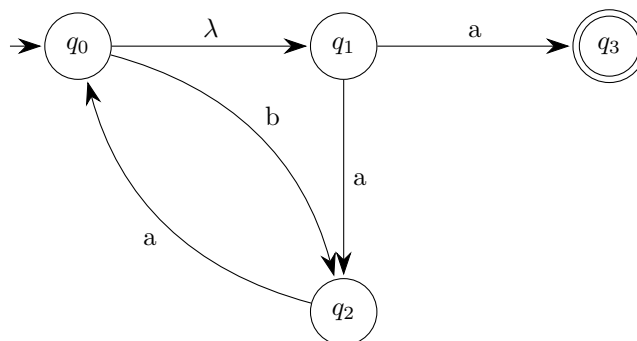


Figure 5: ex0.1a.jff converted to TikZ using a gridsize of 100

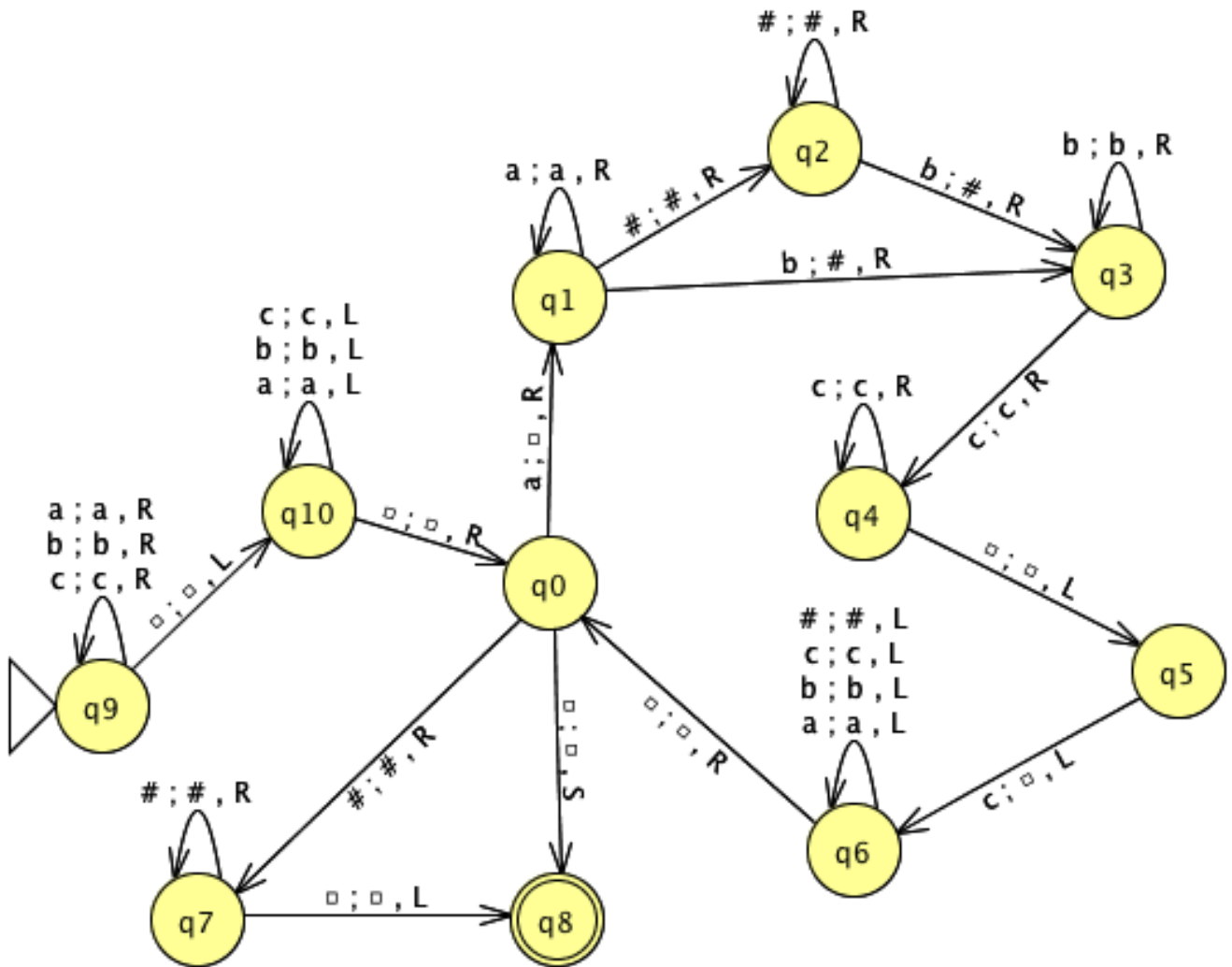


Figure 6: ex9-anbncn.jff

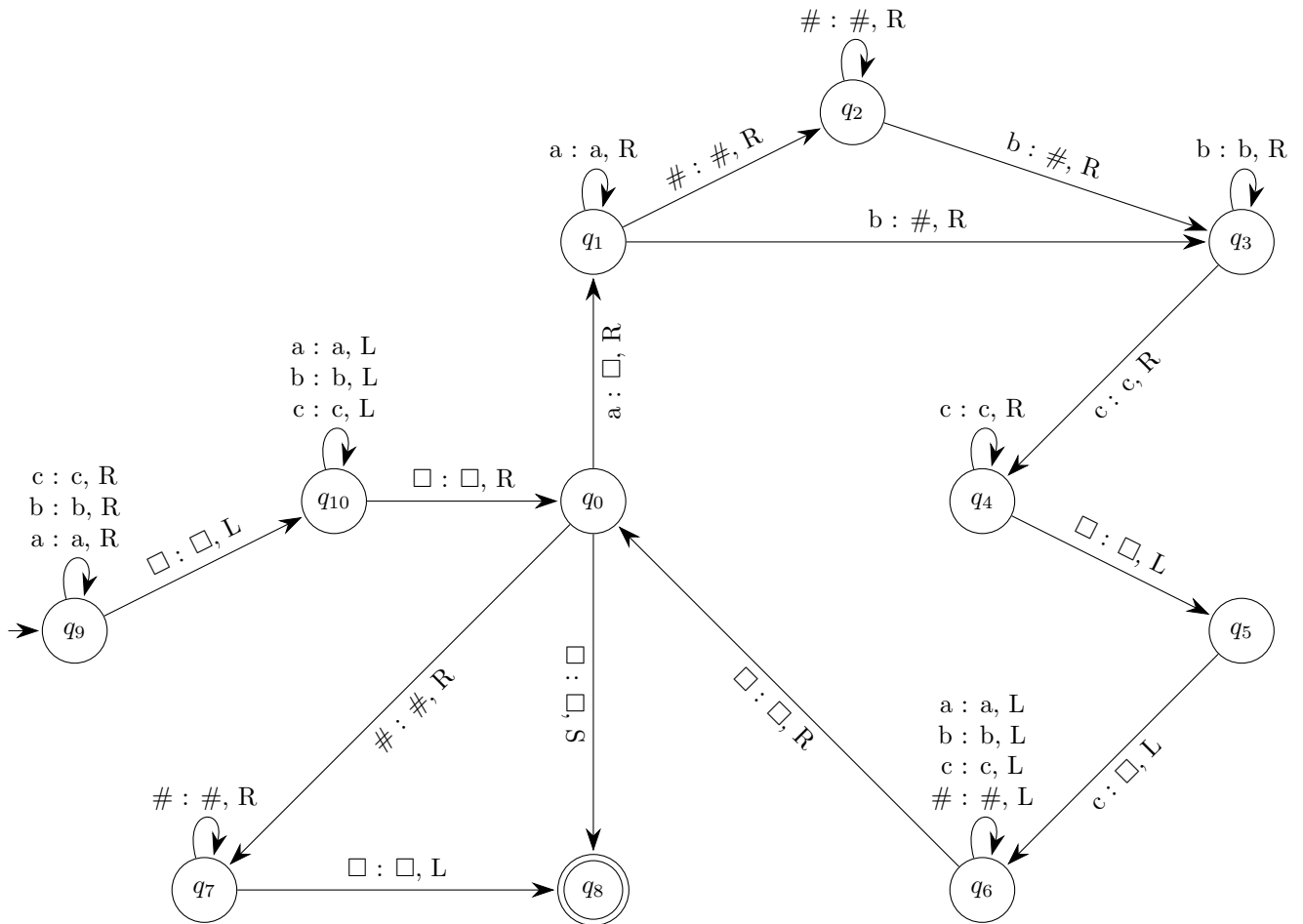


Figure 7: ex9-anbncn.jff converted to TikZ using a gridsize of 50 and label rotations on

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