

# JFLAP2Ti $k$ Z

Andrew Mertz and William Slough

## Introduction

[JFLAP](#)<sup>1</sup> 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. JFLAP2Ti $k$ Z is a [Groovy](#)<sup>2</sup> script that converts a JFLAP jff file representing a finite automaton, pushdown automaton, or Turing machine into a  $\text{\LaTeX}$  file depicting the automaton graphically using Ti $k$ Z.

## Requirements

To use JFLAP2Ti $k$ Z 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

JFLAP2Ti $k$ Z 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 Ti $k$ Z using JFLAP2Ti $k$ Z. Note that JFLAP2Ti $k$ Z 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 Ti $k$ Z code to achieve the effect you want. However, JFLAP2Ti $k$ Z should provide a good starting point.

---

<sup>1</sup>[www.jflap.org](http://www.jflap.org)

<sup>2</sup>[groovy.codehaus.org](http://groovy.codehaus.org)

```

usage: jflap2tikz [options]
Version 1.1
-d,--accepting-distance <distance> Distance, in pt, between the circles of an
accepting state (default is 2)
-g,--grid <size> 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)
-h,--help Show usage information and quit
-i,--input-file <filename> 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.
-l,--arrow-length <length> Length of arrows in points (default is 9)
-o,--output-file <filename> Name of a file for writing output. If this
file already exists it will be
overwritten.
-r,--rotate Rotate labels along edges
-s,--scale <x> 1 pixel in JFLAP = x points in LaTeX
(default is 1.0)
-w,--arrow-width <width> Width of arrows in points (default is 6)

```

Figure 1: Usage information

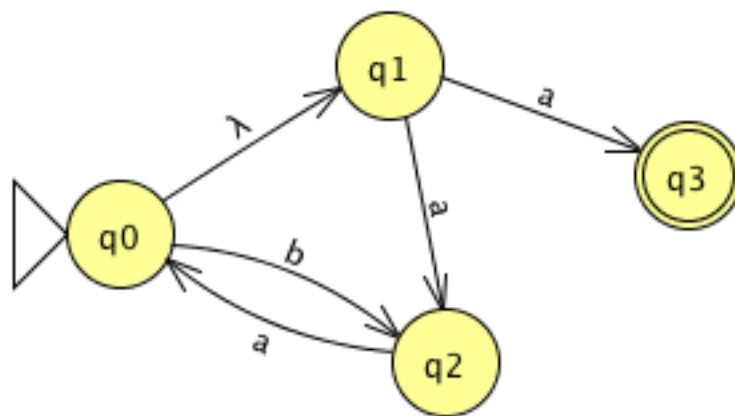


Figure 2: ex0.1a.jff

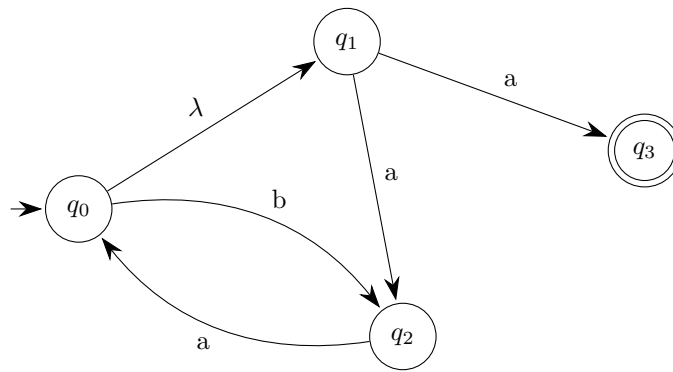


Figure 3: ex0.1a.jff converted to TikZ using default values

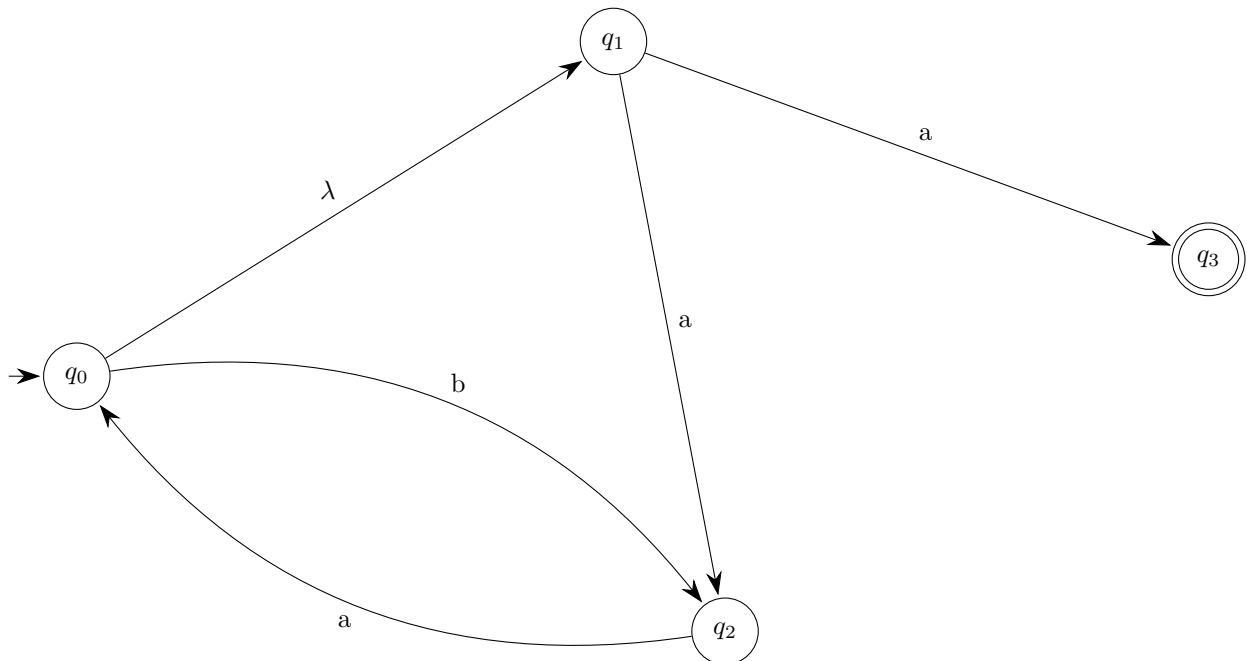


Figure 4: ex0.1a.jff converted to TikZ using a scale of 2

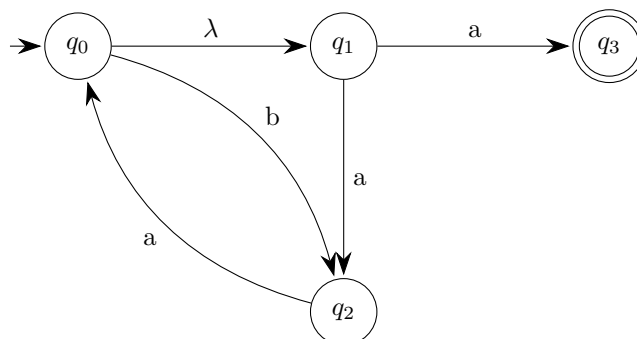


Figure 5: ex0.1a.jff converted to TikZ using a gridsize of 100

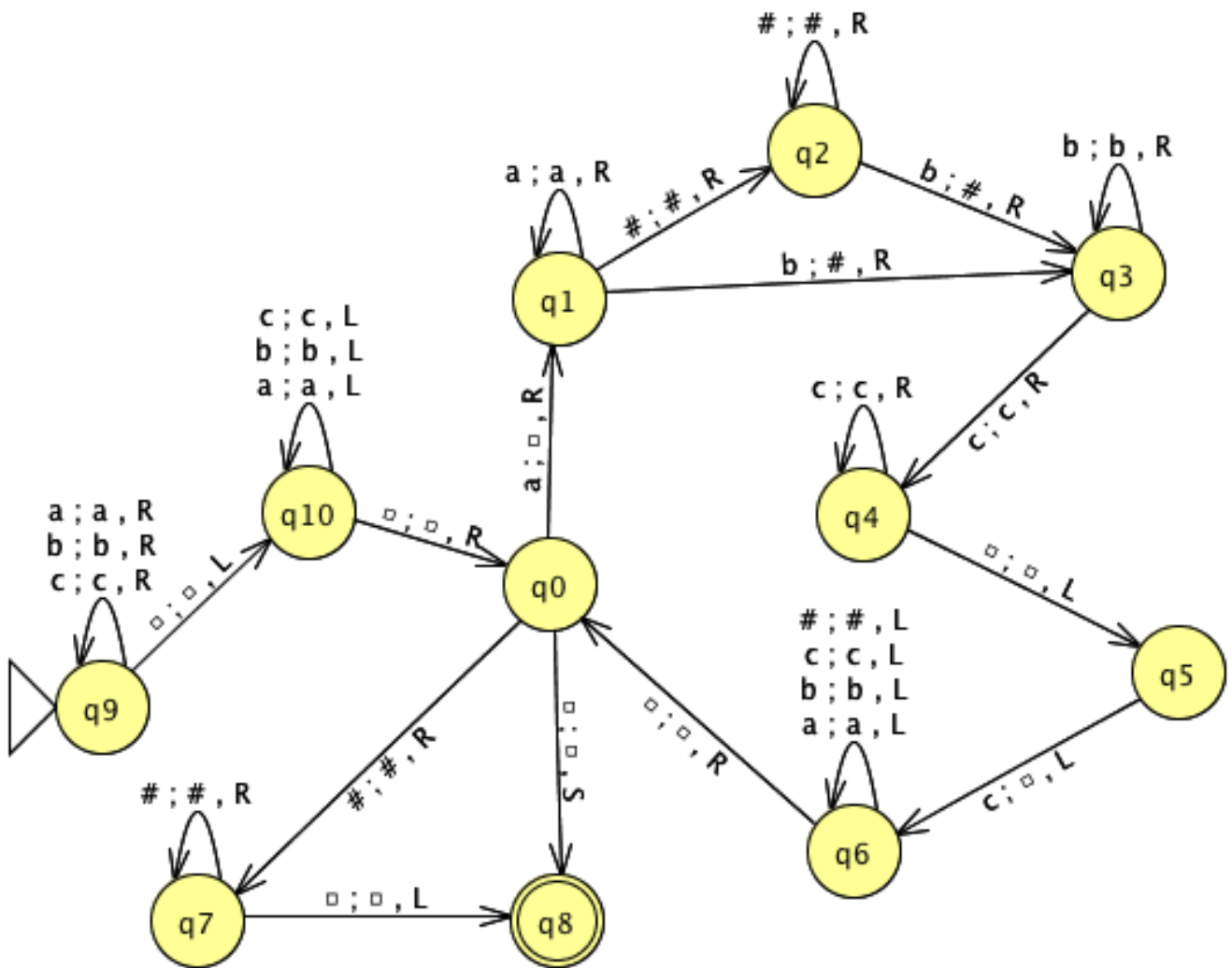


Figure 6: ex9-anbncn.jff

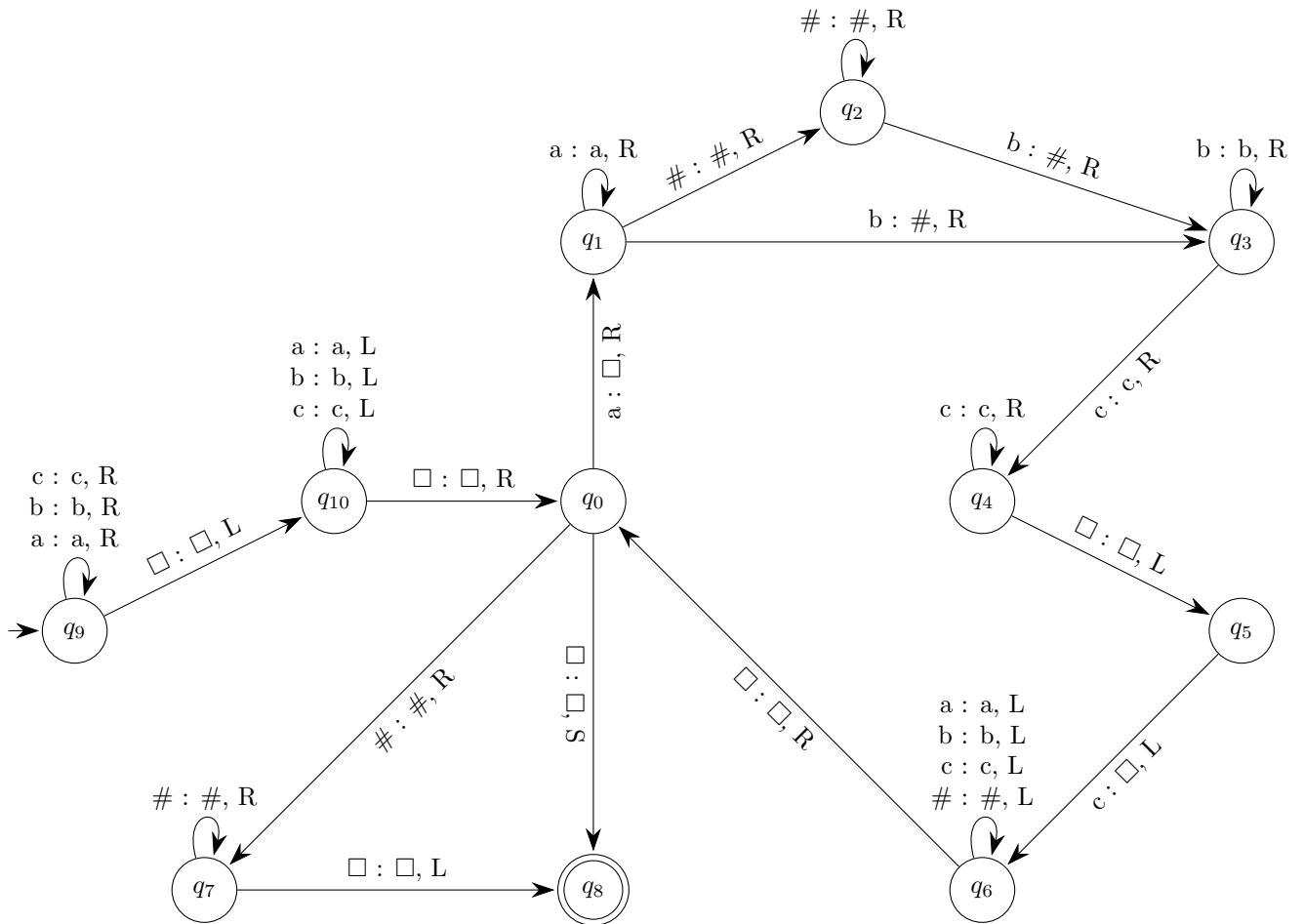


Figure 7: ex9-anbncn.jff converted to TikZ using a gridsize of 50 and label rotations on

## License

JFLAP2TiKZ and its documentation are licensed under an MIT style license

Copyright (c) 2009,2014 Andrew Mertz and William Slough

Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.