

bYacc

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bYacc, or Berkeley Yacc, is an LALR(1) parser generator. Berkeley Yacc has been made as compatible as possible with AT&T Yacc. Berkeley Yacc can accept any input specification that conforms to the AT&T Yacc documentation. Specifications that take advantage of undocumented features of AT&T Yacc will probably be rejected.

There is no manual describing bYacc: this file is simply a usage summary, whose contents were copied from the README and the man page distributed with bYacc. This information is duplicated in an Info file purely for convenience. If you know how to use Yacc, you also know how to use bYacc. If you do not know how to use Yacc, consult your nearest technical bookstore or library for a book on the subject.

For an excellent manual on the Free Software Foundation's Bison parser generator, see *BISON: The YACC-compatible Parser Generator*, by Charles Donnelly and Richard Stallman. Bison is similar to bYacc, but is available only for building programs which you intend to make freely available under the GNU General Public License.

1 A Public Domain Parser Generator

Berkeley Yacc is distributed with no warranty whatever. The code is certain to contain errors. Neither the author nor any contributor takes responsibility for any consequences of its use.

Berkeley Yacc is in the public domain. The data structures and algorithms used in Berkeley Yacc are all either taken from documents available to the general public or are inventions of the author. Anyone may freely distribute source or binary forms of Berkeley Yacc whether unchanged or modified. Distributors may charge whatever fees they can obtain for Berkeley Yacc. Programs generated by Berkeley Yacc may be distributed freely.

Please report bugs to

`corbett@berkeley.edu`

Include a small example if possible. Please include the banner string from `'skeleton.c'` with the bug report. Do not expect rapid responses.

2 Summary of bYacc Command Line Options

```
byacc [ -dlrtv ] [ -b prefix ] [ -Qy ] filename
```

bYacc reads the grammar specification in the file *filename* and generates an LR(1) parser for it. The parsers consist of a set of LALR(1) parsing tables and a driver routine written in the C programming language. bYacc normally writes the parse tables and the driver routine to the file 'y.tab.c'.

The following options are available:

- b *prefix* Change the prefix used for the output file names to *prefix*. The default prefix is the character 'y'.
- d Write the header file 'y.tab.h'.
- l Do not emit '#line' directives. If you do not specify the '-l' option, bYacc inserts #line directives in the generated code. The #line directives let the C compiler relate errors in the generated code to your original code. Any #line directives you specify explicitly are retained.
- Qy Label the output file with the bYacc version, using an #ident statement of the form

```
          #ident "byacc: Berkeley Yacc (Cygnum)"
```
- Qn Explicitly specify that no #ident statement should be included; this is the default.
- r Produce separate files for code and tables. The code file is named 'y.code.c', and the table file is named 'y.tab.c'.
- t Change the preprocessor directives generated by bYacc so that debugging statements will be incorporated in the compiled code.
- V Display version information for byacc on standard error.
- v Write a human-readable description of the generated parser to the file 'y.output'.

3 The Files that bYacc Writes

bYacc can produce these output files (shown with the default prefix 'y', which you can change with the '-b' option):

- y.tab.c** By default, this is the output file containing *both* the code and the tables generated by bYacc. If you use the '-r' option, however, it contains only the tables.
- y.code.c** A file of code generated by bYacc. This is one of the output files when you use the '-r' option.
- y.tab.h** A header file: produced when you use the '-d' option.
- y.output** A human-readable description of the generated parser, produced when you use the '-v' option.

If the environment variable `TMPDIR` is set, its value is used as the name of the directory where these temporary files are created (by default `/tmp`):

```
/tmp/yacc.aXXXXXX  
/tmp/yacc.tXXXXXX  
/tmp/yacc.uXXXXXX
```

4 Messages from bYacc

bYacc writes two sorts of diagnostic messages to standard error:

- How many there rules are never reduced, if there are any such.
- The number of LALR(1) conflicts, if any.