This is the 'Official' text description of the abc format v1.6.
For serious computer nerds there is a formal definition of the
language in Backus-Naur notation, maintained by Henrik Norbeck
at <http://home1.swipnet.se/%7Ew-11382/abc16bnf.txt>.

This description of abc notation has been created for those who
do not want to (or cannot) use the package ABC2MTeX but who wish
to understand the notation. It has been generated semi-
automatically from the ABC2MTeX userguide and so occasionally
refers to other parts of the package. In particular, it mentions
the document index.tex, a guide to using ABC2MTeX for archiving
and indexing tunes, and to the example files English.abc,
Strspys.abc and Reels.abc. It also refers to playabc, a separate
package for playing abc tunes through the speaker of various
machines. It is best read in conjunction with an introduction to
abc notation available by anonymous ftp from

        celtic.stanford.edu/pub/tunes/abc2mtex/INTRO.txt

or, if you have WWW access,

        http://celtic.stanford.edu/pub/tunes/abc2mtex/INTRO.html

Note that if you are intending to use the notation solely for
transcribing tunes, you can ignore most of description of the
information fields as all you really need are the T (title), M
(meter), K (key), and possibly L (default note length) fields. I
have included a full description however, for those who wish to
understand tunes transcribed by users of the package.

Finally, the notation can easily be expanded to include other
musical symbols. Please mail me with any suggestions.

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        The abc Notation System
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Each tune consists of a header and a body. The header, which is
composed of information fields, should start with an X (reference
number) field followed by a T (title) field and finish with a K
(key) field. The body of the tune in abc notation should follow
immediately after. Tunes are separated by blank lines.

  Information fields
  ==================

The information fields are used to notate things such as
composer, meter, etc. in fact anything that isn't music. Most of
the information fields are for use within a tune header but in

addition some may be used in the tune body, or elsewhere in the
tune file. Those which are allowed elsewhere can be used to set
up a default for the whole or part of a file. For example, in
exactly the same way that tunebooks are organised, a file might
start with M:6/8 and R:Jigs, followed by some jigs, followed by
M:4/4 and R:Reels, followed by some reels. Tunes within each
section then inherit the M: and R: fields automatically, although
they can be overridden inside a tune header. Finally note that
any line beginning with a letter in the range A-Z and immediately
followed by a : is interpreted as a field (so that line like E:|,
which could be regarded as an E followed by a right repeat
symbol, will cause an error).

By far the best way to find out how to use the fields is to look
at the example files (in particular English.abc) and try out some
examples. Thus rather than describing them in detail, they are
summarised in the following table. The second, third and fourth
columns specify respectively how the field should be used in the
header and whether it may used in tune body or elsewhere in the
file. Certain fields do not affect the typeset music but are
there for other reasons, and the fifth column reflects this;
index fields only affect the index (see index.tex) while archive
fields do not affect the output at all, but are just provided to
put in information that one might find in, say, a conventional
tunebook.

Field name	header	tune	elsewhere	Used by	Examples and notes
==========	======	====	=========	=======	==================
A:area	yes				A:Donegal, A:Bampton
B:book	yes		yes	archive	B:O'Neills
C:composer	yes				C:Trad.
D:discography	yes			archive	D:Chieftans IV
E:elemskip	yes	yes			see Line Breaking
F:file name			yes		see index.tex
G:group	yes		yes	archive	G:flute
H:history	yes		yes	archive	H:This tune said to ...
I:information	yes		yes	playabc	
K:key	last	yes			K:G, K:Dm, K:AMix
L:default note length	yes	yes			L:1/4, L:1/8
M:meter	yes	yes	yes		M:3/4, M:4/4
N:notes	yes				N:see also O'Neills - 234
O:origin	yes		yes	index	O:I, O:Irish, O:English
P:parts	yes	yes			P:ABAC, P:A, P:B
Q:tempo	yes	yes			Q:200, Q:C2=200
R:rhythm	yes		yes	index	R:R, R:reel
S:source	yes				S:collected in Brittany
T:title	second	yes			T:Paddy O'Rafferty
W:words			yes		W:Hey, the dusty miller
X:reference number	first				X:1, X:2
Z:transcription note	yes				Z:from photocopy

Some additional notes on certain of the fields:-

T - tune title. Some tunes have more than one title and so this
field can be used more than once per tune - the first time will

generate the title whilst subsequent usage will generate the alternatives in small print. The T: field can also be used within a tune to name parts of a tune - in this case it should come before any key or meter changes.

K - key; the key signature should be specified with a capital letter which may be followed by a # or b for sharp or flat respectively. In addition, different scales or modes can be specified and, for example, K:F lydian, K:C, K:C major, K:C ionian, K:G mixolydian, K:D dorian, K:A minor, K:Am, K:A aeolian, K:E phrygian and K:B locrian would all produce a staff with no sharps or flats. The spaces can be left out, capitalisation is ignored for the modes and in fact only the first three letters of each mode are parsed so that, for example, K:F# mixolydian is the same as K:F#Mix or even K:F#MIX. There are two additional keys specifically for notating highland bagpipe tunes; K:HP doesn't put a key signature on the music, as is common with many tune books of this music, while K:Hp marks the stave with F sharp, C sharp and G natural. Both force all the beams and staffs to go downwards.

Finally, global accidentals can also be set in this field so that, for example, K:D =c would write the key signature as two sharps (key of D) but then mark every c as natural (which is conceptually the same as D mixolydian). Note that the there can be several global accidentals, separated by spaces and each specified with an accidental, __, _, =, ^ or ^^, (see below) followed by a letter in lower case. Global accidentals are overridden by accidentals attached to notes within the body of the abc tune and are reset by each change of signature.

L - default note length; i.e. L:1/4 - quarter note, L:1/8 - eighth note, L:1/16 - sixteenth, L:1/32 - thirty-second. The default note length is also set automatically by the meter field M: (see below).

M - meter; apart from the normal meters, e.g. M:6/8 or M:4/4, the symbols M:C and M:C| give common time and cut time respectively.

P - parts; can be used in the header to state the order in which the tune parts are played, i.e. P:ABABCDCD, and then inside the tune to mark each part, i.e. P:A or P:B.

Q - tempo; can be used to specify the notes per minute, e.g. if the default note length is an eighth note then Q:120 or Q:C=120 is 120 eighth notes per minute. Similarly Q:C3=40 would be 40 dotted quarter notes per minute. An absolute tempo may also be set, e.g. Q:1/8=120 is also 120 eighth notes per minute, irrespective of the default note length.
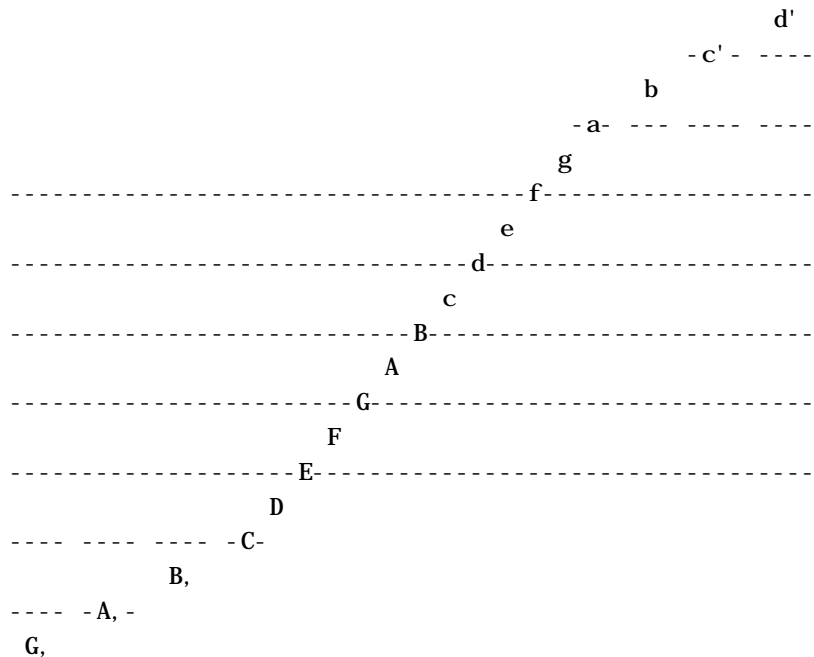
G - group; to group together tunes for indexing purposes.

H - history; can be used for multi-line stories/anecdotes, all of which will be ignored until the next field occurs.

abc tune notation
=================

The following letters are used to represent notes:-


```
                                             d'
                                       -c'- ----
                                    b
                             -a- --- ---- ----
                            g
------------------------------------f------------------
                          e
--------------------------------d----------------------
                        c
--------------------------B----------------------------
                      A
-----------------------G-------------------------------
                    F
-------------------E-----------------------------------
                 D
---- ---- ---- -C-
            B,
---- -A,-
  G,
```

and by extension, the notes C, D, E, F, a' and b' are available.
Notes can be modified in length (see below).

   Rests
   =====

Rests are generated with a z and can be modified in length in
exactly the same way as notes can.

   Note lengths
   ===========

NB Throughout this document note lengths are referred   as
sixteenth, eighth, etc.   The commonly used equivalents are
sixteenth note = semi-quaver, eighth = quaver, quarter = crotchet
and half = minim.

Each meter automatically sets a default note length and a single
letter in the range A-G, a-g will generate a note of this length.
For example, in 3/4 the default note length is an eighth note and
so the input DEF represents 3 eighth notes. The default note
length can be calculated by computing the meter as a decimal; if
it is less than 0.75 the default is a sixteenth note, otherwise
it is an eighth note. For example, 2/4 = 0.5, so the default note
length is a sixteenth note, while 4/4 = 1.0 or 6/8 = 0.75, so the
default is an eighth note. Common time and cut time (M:C and
M:C|) have an eighth note as default.

Notes of differing lengths can be obtained by simply putting a
multiplier after the letter. Thus in 2/4, A or A1 is a sixteenth
note, A2 an eighth note, A3 a dotted eighth note, A4 a quarter
note, A6 a dotted quarter note, A7 a double dotted quarter note,
A8 a half note, A12 a dotted half note, A14 a double dotted half
note, A15 a triple dotted half note and so on, whilst in 3/4, A
is an eighth note, A2 a quarter note, A3 a dotted quarter note,
A4 a half note, ...

To get shorter notes, either divide them - e.g. in 3/4, A/2 is a
sixteenth note, A/4 is a thirty-second note - or change the
default note length with the L: field.   Alternatively, if the
music has a broken rhythm, e.g. dotted eighth note/sixteenth note
pairs, use broken rhythm markers (see below). Note that A/ is
shorthand for A/2.

  Broken rhythms
  ==============

A common occurrence in traditional music is the use of a dotted
or broken rhythm. For example, hornpipes, strathspeys and certain
morris jigs all have dotted eighth notes followed by sixteenth
notes as well as vice-versa in the case of strathspeys. To
support this abc notation uses a > to mean `the previous note is
dotted, the next note halved' and < to mean `the previous note is
halved, the next dotted'. Thus the following lines all mean the
same thing (the third version is recommended):

  L:1/16
  a3b cd3 a2b2c2d2

  L:1/8
  a3/2b/2 c/2d3/2 abcd

  L:1/8
  a>b c<d abcd

As a logical extension, >> means that the first note is double
dotted and the second quartered and >>> means that the first note
is triple dotted and the length of the second divided by eight.
Similarly for << and <<<.

  Duplets, triplets, quadruplets, etc.
  ====================================

These can be simply coded with the notation (2ab for a duplet,
(3abc for a triplet or (4abcd for a quadruplet, etc., up to (9.
The musical meanings are:

  (2 2 notes in the time of 3
  (3 3 notes in the time of 2
  (4 4 notes in the time of 3
  (5 5 notes in the time of n

```
(6  6 notes in the time of 2
(7  7 notes in the time of n
(8  8 notes in the time of 3
(9  9 notes in the time of n
```

If the time signature is compound (3/8, 6/8, 9/8, 3/4, etc.) then
n is three, otherwise n is two.

More general tuplets can be specified using the syntax (p:q:r
which means `put p notes into the time of q for the next r
notes'. If q is not given, it defaults as above. If r is not
given, it defaults to p. For example, (3:2:2 is equivalent to
(3::2 and (3:2:3 is equivalent to (3:2 , (3 or even (3:: .   This
can be useful to include notes of different lengths within a
tuplet, for example (3:2:2G4c2 or (3:2:4G2A2Bc and also describes
more precisely how the simple syntax works in cases like (3D2E2F2
or even (3D3EF2. The number written over the tuplet is p.

   Beams
   =====

To group notes together under one beam they should be grouped
together without spaces. Thus in 2/4, A2BC will produce an eighth
note followed by two sixteenth notes under one beam whilst A2 B C
will produce the same notes separated. The beam slopes and the
choice of upper or lower staffs are generated automatically.

   Repeat/bar symbols
   ==================

Bar line symbols are generated as follows:

 | bar line
 |] thin-thick double bar line
 || thin-thin double bar line
 [| thick-thin double bar line
 :| left repeat
 |: right repeat
 :: left-right repeat

   First and second repeats
   ========================

First and second repeats can be generated with the symbols [1 and
[2, e.g. faf gfe|[1 dfe dBA:|[2 d2e dcB|]. When adjacent to bar
lines, these can be shortened to |1 and :|2, but with regard to
spaces | [1 is legal, | 1 is not.

   Accidentals
   ===========

The symbols ^ = and _ are used (before a note) to generate

respectively a sharp, natural or flat. Double sharps and flats
are available with ^^ and __ respectively.

Changing key, meter, and default note length mid-tune
===

To change key, meter, or default note length, simply put in a new
line with a K: M: or L: field, e.g.
  ed|cecA B2ed|cAcA E2ed|cecA B2ed|c2A2 A2:|
  K:G
  AB|cdec BcdB|ABAF GFE2|cdec BcdB|c2A2 A2:|

To do this without generating a new line of music, put a \ at the
end of the first line, i.e.
  E2E EFE|E2E EFG|\
  M:9/8
  A2G F2E D2|]

Ties and slurs
==============

You can tie two notes together either across or within a bar with
a - symbol, e.g. abc-|cba or abc-cba. More general slurs can be
put in with () symbols. Thus (DEFG) puts a slur over the four
notes. Spaces within a slur are OK, e.g. (D E F G), but the open
bracket should come immediately before a note (and its
accents/accidentals, etc.) and the close bracket should come
immediately after a note (and its octave marker or length). Thus
(=b c'2) is OK but (=b c'2) is not.

Gracings
========

Grace notes can be written by enclosing them in curly braces,
{}. For example, a taorluath on the Highland pipes would be
written {GdGe}. The tune `Athol Brose' (in the file Strspys.abc)
has an example of complex Highland pipe gracing in all its glory.
Grace notes have no time value and so expressions such as {a2}
or {a>b} are not legal.

Alternatively, the tilde symbol ~ represents the general gracing
of a note which, in the context of traditional music, can mean
different things for different instruments, for example a roll,
cran or staccato triplet

Accents
=======

Staccato marks (a small dot above or below the note head) can be
generated by a dot before the note, i.e. a staccato triplet is
written as (3.a.b.c

For fiddlers, the letters u and v can be used to denote up-bow
and down-bow, e.g. vAuBvA

Chords and unisons

Chords (i.e. more than one note head on a single stem) can be coded with [] symbols around the notes, e.g. [CEGc] produces the chord of C major. They can be grouped in beams, e.g. [d2f2][ce][df] but there should be no spaces within a chord. See the tune `Kitchen Girl' in the file Reels.abc for a simple example.

If the chord contains two notes both of the same length and pitch, such as [DD], then it is a unison (e.g. a note played on two strings of a violin simultaneously) and is shown as note-head with both upward and downward stems.

Guitar chords

Guitar chords can be put in under the melody line by enclosing the chord in inverted commas, e.g. "Am7"A2D2 . See the tune `William and Nancy' in English.abc for an example.

Order of symbols

The order of symbols for one note is <guitar chords>, <accents> (e.g. roll, staccato marker or up/downbow), <accidental>, <note>, <octave>, <note length>, i.e. ~^c'3 or even "Gm7"v.=G,2

Tie symbols, -, should come immediately after a note group but may be followed by a space, i.e. =G,2- . Open and close chord symbols, [], should enclose entire note sequences (except for guitar chords), i.e. "C"[CEGc] or "Gm7"[.=G,^c'] and open and close slur symbols, (), should do likewise, i.e. "Gm7"(v.=G,2~^c'2)

Comments

A % symbol will cause the remainder of any input line to be ignored. The file English.abc contains plenty of examples.

New notation

The letters H-Z can be used to define your own new notation within a tune. Currently the way they are implemented (if at all) is extremely package dependent and so users are advised not to rely too heavily on them to include new features. Instead, if there is a feature or symbol that you need and which is not available it is better to press for it to be included as a part of the language.

Line breaking and justification

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Generally one line of abc notation will produce one line of
music, although if the music is too long it will overflow onto
the next line. This can look very effective, but it can also
completely ruin ties across bar lines, for example. You can
counteract this by changing either the note spacing with the E:
field (although currently this is package dependent) or break the
line of abc notation. If, however, you wish to use two lines of
input to generate one line of music (see, for example, the
`Untitled Reel' in Reels.abc) then simply put a \ at the end of
the first line. This is also useful for changing meter or key in
the middle of a line of music.

With most packages lines of music are right-justified. However,
where this is not the case (e.g. when using MusicTeX), a * at the
end of each line of abc notation will force a right-justified
line-break.

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