REPRESENTATION

****degree** — absolute scale degree representation

DESCRIPTION

The ****degree** representation can be used to represent key-dependent scale-degree information for music in major or minor keys. The ****degree** representation differs from the related ****deg** representation in that it encodes absolute rather than relative pitch-height information.

Three types of data tokens are distinguished by ****degree**: scale degree tokens, rest tokens, and barlines.

Scale degree tokens are encoded as a combination of degree values, degree alterations, and octave designations. The scale degree values are indicated by the numbers 1 (tonic) to 7 (leading-tone). These values may be chromatically altered by raising (+) or lowering (-). The *amount* of chromatic alteration is not indicated; for example, a raised super-tonic is represented as `2+` whereas a doubly-raised super-tonic is also represented as `2+`. A lowered submediant is represented as `6-`.

A second integer value is used to indicate the octave following the ANSI standard pitch designations. For example, the pitch A4 lies in octave 4. (Octaves begin at C and end at B.) In order to avoid confusing scale degrees with octave indications the slash character is used as a sub-token separator. For example, the pitch C4 in the key of C major is represented as `1/4`, while the pitch A#4 in the key of G major is represented as `2+/4`.

Scale degree tokens are always represented with respect to a prevailing major or minor *key*. In the case of minor keys, scale degrees are characterized with respect to the *harmonic minor* scale only. By way of example, the pitch F4 in the key of A minor is represented as the submediant (`6/4`) while F#4 is represented as the raised submediant (`6+/4`). In the same key, G4 is represented as the lowered seventh (`7-/4`) while G#4 is the normal leading-tone (`7/4`). In the key of A major, F4 is represented as the lowered submediant (`6-/4`).

Rests are represented by the single letter 'r'.

Barlines are represented using the "common system" for barlines — see **barlines (2)**.

FILE TYPE

It is recommended that files containing predominantly `**degree` data should be given names with the distinguishing '.dgr' extension.

SIGNIFIERS

The following table summarizes the **degree mappings of signifiers and signifieds.

0-9	scale degrees, octave designations, or measure numbers
/	scale-degree / octave number separator
–	scale degree lowered
+	scale degree raised
r	rest
=	barline; == double barline

Summary of ****degree** *Signifiers*

EXAMPLES

The sample document given below shows the opening subject of the Fugue in C minor in the second volume of Bach's *Well Tempered Clavier*. The left spine shows a **kern encoding while the right spine shows a corresponding **degree encoding.

```
!! J.S. Bach, Fugue 2 WTC Book I
**kern          **degree
*M4/4           *M4/4
*c:             *c:
=1              =1
8r              r
16cc            1/5
16bn            7/4
8cc             1/5
8g              5/4
8a-             6/4
16cc            1/5
16b             7/4
8cc             1/5
8dd             2/5
=2              =2
8g              5/4
16cc            1/5
16bn            7/4
8cc             1/5
8dd             2/5
16f             4/4
16g             5/4
4a-             6/4
*-              *-
```

PERTINENT COMMANDS

The following Humdrum commands accept **degree encoded data as inputs:

kern	translates ****degree** to ****kern**
pitch	translates ****degree** to ****pitch**
solfg	translates ****degree** to ****solfg**
tonh	translates ****degree** to ****Tonh**
vox	determine active and inactive voices in a Humdrum file

The following Humdrum command produces ****degree** data as output:

degree	translates ****kern**, ****pitch**, ****solfg**, ****Tonh**, to ****degree**

TANDEM INTERPRETATIONS

The following tandem interpretations can be used in conjunction with ****degree**:

key signatures	`*k[f#c#]`
key	`*c#:`

Tandem interpretations for ****degree**

SEE ALSO

barlines (2), ****deg** (2), **deg** (4), **degree** (4), ****kern** (2), ****pitch** (2), ****Tonh** (2), ****solfg** (2)