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## REPRESENTATION

**\*\*deg** — relative scale degree representation

## DESCRIPTION

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

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

Scale degree tokens are encoded as a combination of melodic approach, degree value, and degree alteration. The caret (^) denotes an ascending melodic approach to the current note, whereas the lower-case letter v denotes a descending melodic approach. Repeated pitches carry no melodic approach signifier. 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-.

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 F in the key of A minor is represented as the submediant (6) while F# is represented as the raised submediant (6+). In the same key, G is represented as the lowered seventh (7-) while G#4 is the normal leading-tone (7). In the key of A major, F is represented as the lowered submediant (6-). If this pitch was approached from below, it would be encoded as ^6- — whereas if it was approached from above, it would be encoded as v6-.

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 **\*\*deg** data should be given names with the distinguishing '.deg' extension.

## SIGNIFIERS

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

0-9	scale degrees, or measure numbers
^	ascending melodic approach
v	descending melodic approach
-	scale degree lowered by one semitone
—	scale degree lowered by two semitones
+	scale degree raised by one semitone
r	rest
=	barline; == double barline

*Summary of **\*\*deg** 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 **\*\*deg** encoding.

```
!! J.S. Bach, Fugue 2 WTC Book I
**kern          **deg
*M4/4           *M4/4
*c:            *c:
=1             =1
8r             r
16cc           1
16bn           v7
8cc            ^1
8g             v5
8a-            ^6
16cc           ^1
16b            v7
8cc            ^1
8dd            ^2
=2             =2
8g             v5
16cc           ^1
16bn           v7
8cc            ^1
8dd            ^2
16f            v4
16g            ^5
4a-            ^6
*-             *-
```

## PERTINENT COMMANDS

The following Humdrum command accepts **\*\*deg** encoded data as inputs:

**\*\*deg** (2)                      \* \* *Humdrum Representation Reference* \* \*

**vox**                      determine active and inactive voices in a Humdrum file

The following Humdrum command produces **\*\*deg** data as output:

**deg**                      translates **\*\*kern**, **\*\*pitch**, **\*\*Tonh**, **\*\*solfg**, to **\*\*deg**

## TANDEM INTERPRETATIONS

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

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

*Tandem interpretations for **\*\*deg***

## SEE ALSO

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