

## NAME

**nf** — determine normal form for successive vertical sonorities

## SYNOPSIS

**nf** [*inputfile ...*] [*> outputfile.nf*]

## DESCRIPTION

The **nf** command is used to determine the *normal form* for any of five set-theory related inputs: *pitch* (**\*\*semit**s), *pitch-class* (**\*\*pc**), *prime form* (**\*\*pf**), *interval-vector* (**\*\*iv**), or Fortean set name (**\*\*pcset**).

“Normal form” is a standardized way of representing the pitch material for any arbitrary set of pitches. Normal form provides the most intervallically compact spelling of the pitch-classes evident in a given sonority. It is analogous to rearranging notes in a chord so that the spelling is in root position, close position, with duplicate pitch-classes eliminated. By way of example, a D major chord (in any inversion, with any spelling) will have the normal form: 2,6,9 — namely, the pitch-classes D, F#, A (as opposed to 6,9,2 or 2,9,6). See REFERENCES below.

When provided with **\*\*semit**s or **\*\*pc** inputs, **nf** treats each input record as a set of pitches. Unisons and other pitch-class duplications have no effect on the output. Rests within a set of pitches are ignored; where an input record consists solely of one or more rests, a null-token is output.

The **nf** command is able to translate any of the representations listed below. For descriptions of the various input representations (including **\*\*nf**) refer to Section 2 (*Representation Reference*) of this reference manual.

It is recommended that output files produced using the **nf** command should be given names with the distinguishing ‘.nf’ extension.

<b>**iv</b>	interval vector representation
<b>**nf</b>	normal form representation
<b>**pc</b>	pitch-class representation
<b>**pcset</b>	Fortean pitch-class set name
<b>**pf</b>	prime form representation
<b>**semit</b> s	equal-tempered semitones with respect to middle C=0 (e.g. 12 = C5)

*Input representations processed by nf.*

## OPTIONS

The **nf** command provides only a help option:

**-h** displays a help screen summarizing the command syntax

Options are specified in the command line.

## EXAMPLES

The following command outputs the normal form for the sets formed by successive sonorities in the input file `opus24`. The input may be pitches, pitch-classes, Fortean set names, etc.

```
nf opus24 > opus24.nf
```

## PORTABILITY

DOS 2.0 and up, with the MKS Toolkit. OS/2 with the MKS Toolkit. UNIX systems supporting the *Korn* shell or *Bourne* shell command interpreters, and revised *awk* (1985).

## SEE ALSO

**context** (4), **\*\*iv** (2), **iv** (4), **\*\*nf** (2), **\*\*pc** (2), **pc** (4), **\*\*pcset** (2), **pcset** (4), **\*\*pf** (2), **pf** (4), **\*\*semits** (2), **semits** (4)

## NOTE

The **nf** command is a shell script that invokes `pcset -n`.

## REFERENCES

Allen Forte, *The Structure of Atonal Music*. New Haven: Yale University Press, 1973.

John Rahn, *Basic Atonal Theory*. New York: Longman Inc., 1980.

Straus, J. *Introduction to Post-Tonal Theory*. Englewood Cliffs, N.J.: Prentice Hall, 1990.