

# Songlib: trill

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The *trill* family of functions is used to play notes with trill (a cyclical varying of pitch at the end of a note). The *trill* family follows the {n,r,d} convention.

```
void trill(double beats,int, instrument,int octave,int pitch,  
    double startBeats,double delta,double down,double up,int count);  
  
void ntrill(double beats,int instrument,int numberedNote,  
    double startBeats,double delta,double down,double up,int count);  
  
void rtrill(double beats,RRA *r,  
    double startBeats,double delta,double down,double up,int count);  
  
void dtrill(double beats,int *data,int length,  
    double startBeats,double delta,double down,double up,int count);
```

The note plays for *startBeats* and then oscillates 'count' times around *down* and *up*. Each down phase lasts *delta* beats and each up phase lasts *delta* beats. *Down* and *up* are specified as offsets. For example, if the specified note is C3, *down* is -STEP and *up* is STEP, then the note will start at C3 and then oscillate between B2 and Cs3.

A trill is usually considered a rapid alternation between adjacent notes; the trill function provides more generality than that.