

ADSR ENVELOPS

Version 0.1
Computing
COMP120

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This algorithm changes the audio to use the ADSR (Attack Decay Sustain Release) envelope format. Given that a is the audio sample, b is the attack level, c is the attack time, d is the decay time e is the sustain level, f is the sustain time and g is the release time.

Algorithm 1 ADSR Envelops

Ensure:

```
1: function ADSR ENVELOPS( $a,b,c,d,e,f,g$ )
2:    $h \leftarrow \text{len}(a)$ 
3:    $i \leftarrow \text{int}(h * c)$ 
4:    $j \leftarrow \text{int}(h * d)$ 
5:    $k \leftarrow \text{int}(h * f)$ 
6:    $l \leftarrow \text{int}(h * g)$ 
7:    $p \leftarrow 0$ 
8:   for  $y = 0, y < i$  do
9:      $a_y \leftarrow a_y * \text{lerp}(0, b, p/i)$ 
10:  end for
11:  for  $y = i, y < i + j$  do
12:     $a_y \leftarrow a_y * \text{lerp}(i, k, p/j)$ 
13:  end for
14:  for  $y = i + j, y < i + j + k$  do
15:     $a_y \leftarrow a_y * e$ 
16:  end for
17:  for  $y = i + j + k, y < i + j + k + l$  do
18:     $a_y \leftarrow a_y * \text{lerp}(e, 0, p/j)$ 
19:  end for
20:  for  $y = i + j + k + l, y < h$  do
21:     $a_y \leftarrow a_y * 0$ 
22:  end for
23:  return  $a$ 
24: end function
```

- ▷ Number of Samples
- ▷ Attack length
- ▷ Decay length
- ▷ Sustain length
- ▷ Release length
- ▷ Progress