This file contains a table of all the phonemic and phonetic symbols used in the TIMIT lexicon and in the phonetic transcriptions. These include the stress markers \{1,2\} found only in the lexicon and the following symbols which occur only in the transcriptions:

1) the closure intervals of stops which are distinguished from the stop release. The closure symbols for the stops b,d,g,p,t,k are bcl,dcl,gcl,pcl,tc,kcl, respectively. The closure portions of jh and ch, are dcl and tcl.

2) allophones that do not occur in the lexicon. The use of a given allophone may be dependent on the speaker, dialect, speaking rate, and phonemic context, among other factors. Since the use of these allophones is difficult to predict, they have not been used in the phonemic transcriptions in the lexicon.

- flap dx, such as in words "muddy" or "dirty"
- nasal flap nx, as in "winner"
- glottal stop q, which may be an allophone of t, or may mark an initial vowel or a vowel-vowel boundary
- voiced-h hv, a voiced allophone of h, typically found intervocally
- fronted-u ux, allophone of uw, typically found in alveolar context
- devoiced-schwa ax-h, very short, devoiced vowel, typically occurring for reduced vowels surrounded by voiceless consonants

3) other symbols include two types of silence; pau, marking a pause, and epi, denoting epenthetic silence which is often found between a fricative and a semivowel or nasal, as in "slow", and h\#, used to mark the silence and/or non-speech events found at the beginning and end of the signal.

### POSSIBLE PHONETIC

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>EXAMPLE WORD</th>
<th>TRANSCRIPTION</th>
</tr>
</thead>
</table>

#### Stops:
- b bee BCL B iy
- d day DCL D ey
- g gay GCL G ey
- p pea PCL P iy
- t tea TCL T iy
- k key KCL K iy
dx muddy, dirty m ah DX iy, dcl d er DX iy
- q bat bcl b ae Q

#### Affricates:
- jh joke DCL JH ow kcl k
- ch choke TCL CH ow kcl k

#### Fricatives:
- s sea S iy
- sh she SH iy
z zone Z ow n
zh azure ae ZH er
f fin F ih n
th thin TH ih n
v van V ae n
dh then DH e n

Nasals:
m mom M aa M
n noon N uw N
ng sing s ih NG
em bottom b aa tcl t EM
en button b ah q EN
eng washington w aa sh ENG tcl t ax n
nx winner w ih NX axr

Semivowels and Glides:
l lay L ey
r ray R ey
w way W ey
y yacht Y aa tcl t
hh hay HH ey
hv ahead ax HV eh kcl k d
el bottle bcl b aa tcl t EL

diy beet bcl b IY tcl t
ih bit bcl b IH tcl t
eh bet bcl b EH tcl t
ey bait bcl b EY tcl t
ae bat bcl b AE tcl t
aa bott bcl b AA tcl t
aw bout bcl b AW tcl t
ay bite bcl b AY tcl t
ah but bcl b AH tcl t
ao bought bcl b AO tcl t
oy boy bcl b OY
ow boat bcl b OW tcl t
uh book bcl b UH kcl k
uw boot bcl b UW tcl t
ux toot tcl t UX tcl t
er bird bcl b ER kcl d
ax about AX bcl b aw tcl t
ix debit del d eh bcl b IX tcl t
axr butter bcl b ah dx AXR
ax-h suspect s AX-H s pcl p eh kcl k tcl t

Others:

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>pau</td>
<td>pause</td>
</tr>
<tr>
<td>epi</td>
<td>epenthetic silence</td>
</tr>
<tr>
<td>h#</td>
<td>begin/end marker (non-speech events)</td>
</tr>
<tr>
<td>l</td>
<td>primary stress marker</td>
</tr>
</tbody>
</table>
secondary stress marker