HornMorphoA 3.1

Morphological analysis, generation, and grapheme-phoneme conversion of Amharic words

Quick Reference

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Coverage

HornMorphoA is a subset of the HornMorpho program, which includes only the files you will need to work with Amharic. For other languages handled by HornMorpho, install the full version of the program, which is in Versions/3.1.

Installation

1. Uncompress the file that you downloaded. This will yield a directory (folder) called `HornMorphoA-3.1`, which contains all of the files that you need to run HornMorphoA.

2. Go to the `HornMorphoA-3.1` directory (folder), and enter the following, making sure that you are running some version of Python 3.

```
python setup.py install
```

Use

Starting the program

Start up the Python interpreter, again making sure that you are running at least Python 3.1, and type the following to load the program.

```
import hm
```

Functions

Options for each function are shown with their default values.

A(*word*)

Options: raw=False

Performs morphological analysis of the word. For ambiguous words returns the first 5 analyses. Analyses are ordered by their estimated frequency. If `raw` is `True`, the raw analysis is returned; otherwise, the analyses is printed out, and nothing is returned.

```
>>> hm.A('የማያስፈልጋትስ')
word: የማያስፈልጋትስ
POS: verb, root: <fl_g>, citation: አስፈለገ
 subject: 3, sing, masc
 object: 3, sing, fem
 grammar: imperfective, causative, relative, definite, negative
 conjunctive suffix: s
```

```
>>> hm.A('am', 'አይደለችም')
word: አይደለችም
POS: copula, root: <ne>
 subj: 3, sing, fem
 negative
```

```
>>> hm.A('am', 'ለዘመዶቻችንም', raw=True)
[('zemed', [-acc, cnj='m', der=[-ass], -dis, +plr, pos='n',
poss=[+expl, +p1, -p2, +plr], pp='le', rl=[-acc, +p], v=None])]
```

AF(*input_file*)

Options: output_file=None, raw=False, gram=True

Runs `A` on the words in a file and writes them to `output_file`, if one is given for `output_file`, otherwise to standard output. If `raw` is `True`, the raw analysis is written. If `gram` is `False`, only each word's root or stem is written.

```
>>> hm.AF('hm/languages/am/data/ag.txt',
          'hm/languages/am/data/ag_out.txt')
Analyzing words in hm/languages/am/data/ag.txt
Writing to hm/languages/am/data/ag_out.txt
```

S(*word*)

Options: raw=False

Performs morphological segmentation on the word. Morphemes are separated by '`-`'; stems/roots appear within '`{}`'. If `raw` is `True`, a list of analyses is returned, each a part-of-speech, segmentation pair. For complex words, the part-of-speech is that of the stem or root, not the whole word. If `raw` is `False` (the default), the segmentations are printed out, with the part-of-speech appearing before the segmentation, separated by '`:`', and different analyses/segmentations separated by '`;;`'.

```
>>> hm.S('ሲያጭበረብሩን')
ሲያጭበረብሩን -- v:s(cnj1)-y(sb=3sm|3p)-{Cbrbr+a12e3e4_5}(imprf,trans)-
u(sb=2p|3p)-n(ob=1p)
```

```
>>> hm.S('ለነገራቸው', raw=True)

[('n', 'le(prep)-{neger}-ac_ew(poss=3p)'), ('v', ‘le(prep1)-(rel)-
{ngr+1e2_e3}(prf)-e(sb=3sm)-ac_ew(ob=3p)')]
```

```
>>> hm.S("አልማዝ")

አልማዝ -- n:{'almaz};;nm_prs:{'almaz}
```

SF(*input_file*)

Options: output_file=None

Runs `S` on the words in a file.

```
>>> hm.SF(‘hm/languages/am/data/ag.txt’,
          ‘hm/languages/am/data/ag_out.txt’)
Segmenting words in hm/languages/am/data/ag.txt
Writing to hm/languages/am/data/ag_out.txt
```

G(*root*)

Options: features=None

Generates an Amharic word, given a root or stem, if the root/stem is known to HornMorpho. If `features` are not provided, a set of default grammatical features is used. Roots/stems are represented using roman characters, following the romanization conventions described in the full User's Guide. For nouns, the stem is the bare noun with no prefixes or suffixes. For verbs, the root is the series of consonants (and in some cases other characters) that is the basis for the surface forms of the verb. The default output form for verbs is the third person singular masculine perfective. To override the default features, specify a value for the `features` option. A set of features takes the form of a string consisting of a bracketed expression with a list of feature names and values. For more on the particular features used for Amharic nouns and verbs, see the full User's Guide.

```
>>> hm.G('mengst')

መንግስት

>>> hm.G('mengst', "[+plr,+def,cs=acc]")

መንግስታቱን

>>> hm.G('glbT')

ገለበጠ

>>> hm.G('glbT', "[tm=j_i,sb=[+plr],vc=ps]")

ይገልበጡ
```

P(*word*)

Options: raw=False

Converts a word written in Ge'ez characters to a romanized form that shows consonant gemination and the epenthetic vowel (represented by '*I*'). If multiple pronunciations are possible, they are ordered by estimated frequency. If `raw` is `True`, a list of pronunciations is returned; otherwise, each is printed out, separated by spaces.

```
>>> hm.P("ይመታሉ")
yImetal_u yIm_et_al_u
```

```
>>> hm.P('እንድብር')
?IndIbIr
```

PF(*input_file*)

Options: output_file=None

Runs `P` on the words in a file.

```
>>> hm.PF('hm/languages/am/data/ag.txt',
          'hm/languages/am/data/ag_phon.txt')
Analyzing words in hm/languages/am/data/ag.txt
Writing analysis to hm/languages/am/data/ag_phon.txt
```

exit()

Options: none

Exits HornMorpho, saving any analyses or generated forms in a file to be loaded next time you use the program. This will significantly speed up the performance of the program.

```
>>> hm.exit()
```