frith, n.
/ʃiθ/

The act of asking; questioning.

Middle English freth, Old English fregthu.

From Proto-Germanic flexθu, PIE *prek (ask) and suffix -tu (abstract noun). cf. Latin precor, Scot frain.

A word that could have been in English (derived from PIE, like most other English words) but for whatever reason, was dropped before it made it all the way to modern English...
But we can recover it via the regular rules of sound change
**Two More**

**yimidge, adj.**

/jaɪ.miːdʒ/

Wintry.

*Middle English* ymidge, Old English ymīʒa.

*From Proto-Germanic* yimiʒa, PIE *ǵʰyem* (winter) and suffix -iko (adj.). cf. Latin heims, Sanskrit hima

**swifther, n.**

/swi.θər/

An aid to sleep; treatment for insomnia.

*Middle English* swefther, Old English swefθra.

*From Proto-Germanic* swefθra, PIE *swep* (sleep) and suffix -tro (instr. n.). cf. Latin somnus, Welsh hun

These are fun but labor-intensive to run through all the sound changes by hand. Is there a better way???
PIEbot is a simple python package designed to take Proto-Indo-European roots and suffixes and generate modern English words, along with a guess at their spelling.

Caveat: this is NOT a work of scholarship!

- It can’t be — these aren’t real words after all
- Not all sound changes are known, studied, or systematic. The program only models systematic sound changes

Useful for:
- Alternate history
- Historical fiction
- Good clean fun
Proto-Indo-European roots and suffixes were downloaded from Wiktionary and the American Heritage Dictionary of Indo-European Roots (Watkins, 2011)

Sound changes from PIE to modern English were drawn from A Concise History of English (Chamonikolasová, 2014)

The Wiktionary data was downloaded and cleaned

PIE suffixes and sound changes were entered and coded up by hand
PIEBOT INPUTS

- Proto-Indo-European roots and suffixes (with meanings, cognates, and pronunciations)
- English spelling generation model file (p2g)
- Phone mappings from IPA to XSAMPA (an ASCII representation of IPA)
PIEbot Outputs

- Modern English spelling and pronunciation
- Derivation through Proto-Germanic, Old English, and Middle English
- Approximate / suggested meaning
- Any known cognates in other languages
1. Proto-Indo-European roots and suffixes and spelling model are read into memory
2. If the user has requested a suffix, it is combined with the root before processing
3. Sound changes are applied step by step (usually with regular expressions, sometimes hard coded)
4. Spelling is generated
5. Output printed

$ python piebot.py -r "ask" -s "tu" frith
/frθθ/
Middle English fθe:xθ, Old English fθexθu. From Proto-Germanic fθexθu, from PIE root prek-,tu. Ask + Abstract N.

```python
# Late PIE
lpp = late_pie_changes(pie_pron)

# Grimm's Law
grimm_pron = grimm_changes(lpp)

# Verner's Law
verner_pron = sound_change(grimm_pron, {'s': 'z', 'f': 'v', 'x': 'k', 'c': 'k', 'VOWEL_PATTERN+': '', '.*', '.*', '.*'})

# Proto Germanic Vowel Changes
pg_pron = proto_germanic_changes(verner_pron)

# Proto-Germanic to Old English
oe_pron = old_english_changes(pg_pron)

# Late Old English
loe_pron = late_old_english_changes(oe_pron)
final_e = False
```

# Middle English
Modern English spelling is clearly perfect... but idiosyncratic

Experimented with deriving the spelling from the Middle English pronunciation, but only worked so-so

This model is a stripped down n-gram (i.e. probabilistic) but with some tweaks

Users are recommended to exercise caution
TWO MORE FOR FUN

nigidwen, v.
\[/ni\acute{\j}w\epsilon/\]
To narrow down; to filter out.
Middle English nigidwen, Old English ni\j\epsilon\w.  
From Proto-Germanic ni\j\epsilon\w\en, PIE * neyk (winnow) and suffix -\w\en (abstract v.). cf. Latvian nick\acute{\j}t, Welsh nithio.

iggole, v.
\[/i.g\epsilon/\]
A juvenile hedgehog.
Middle English igol, Old English igila.  
From Proto-Germanic iyizla, PIE * H\textsubscript{1}eg\textsuperscript{h}is (hedgehog) and suffix -lo (dim.). cf. Lith. e\textcy\acute{\j}s, Albanian eshk
THANK YOU.

tille, n.
	/tɪl/

A small gift.

Middle English telle, Old English tela.
From Proto-Germanic tela, PIE *deH₃ (give) and suffix -lo (dim.).
cf. Latin dō, Sanskrit dádāti

GITHUB REPO:

https://github.com/fireflylilly/piebot