



Plover, the Open Source Steno Engine

Thought to Text at 240 WPM

Who?

- Mirabai Knight
Founder
- Joshua Lifton, PhD
Cofounder
- Hesky Fisher
Lead Programmer



Plus input, testing, and code from the 199 members of the Plover Google Group

What Is Steno?



Phonetic-Mnemonic

240 WPM with
99.9% accuracy

Why Should You Care?



What Is Steno Good For?

- Speed
- Wearability
- Ergonomics
- Paying Work
- Accessibility
- **Fluency and Efficiency of Text Entry**

STENO ALPHABET

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U A

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U B

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U C

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U D

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U E

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U F

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U G

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U H

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U I

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U J

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U K

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U L

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U M

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U N

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U O

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U P

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U Q

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U R

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U S

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U T

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U U

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U V

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U W

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U X

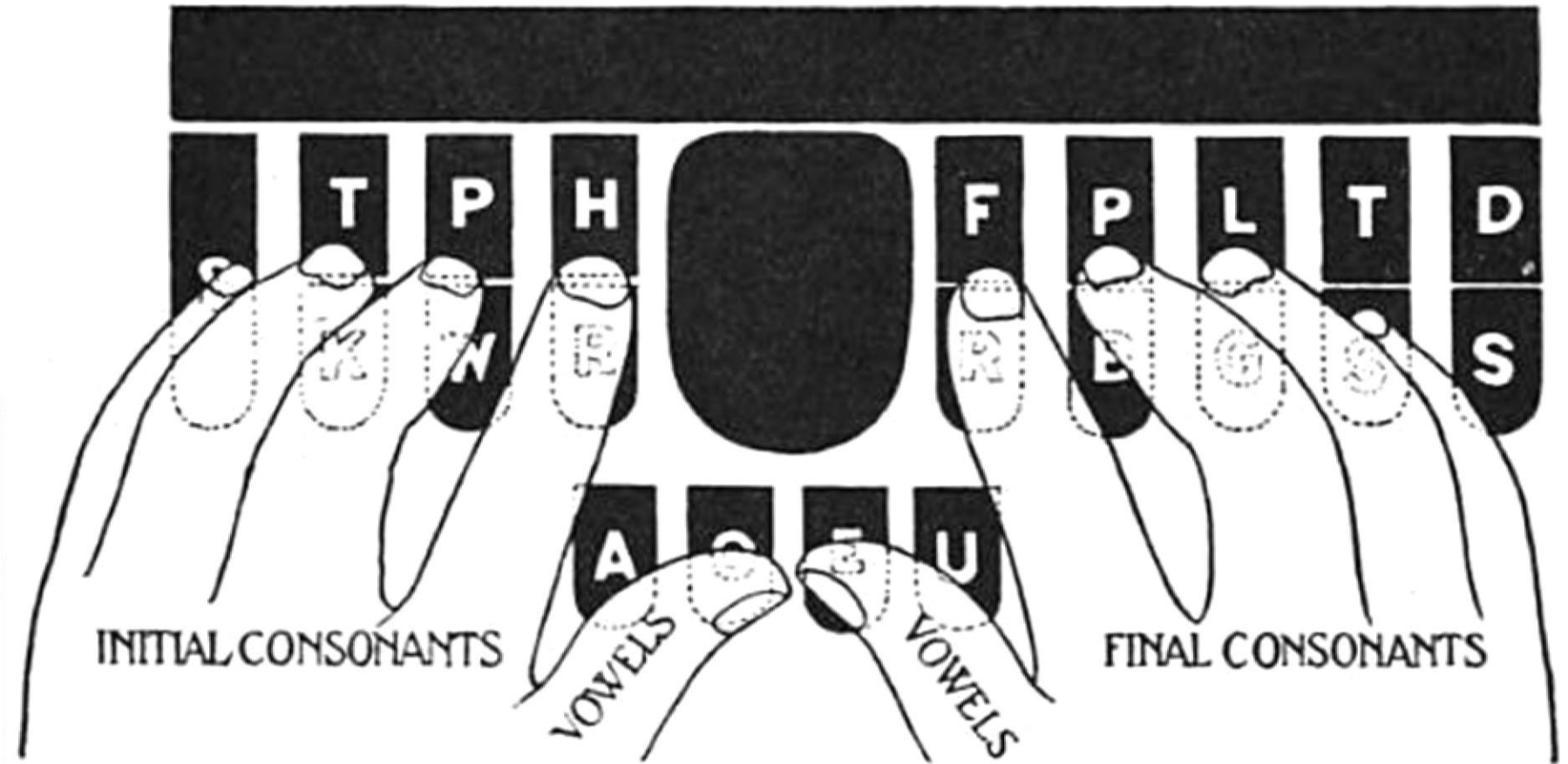
1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U Y

1 2 3 4 6 7 8 9
S T P H • F P L T D
S K W R • R B G S Z
5
A O E U Z

Plover

<http://ploversteno.org>

22 keys



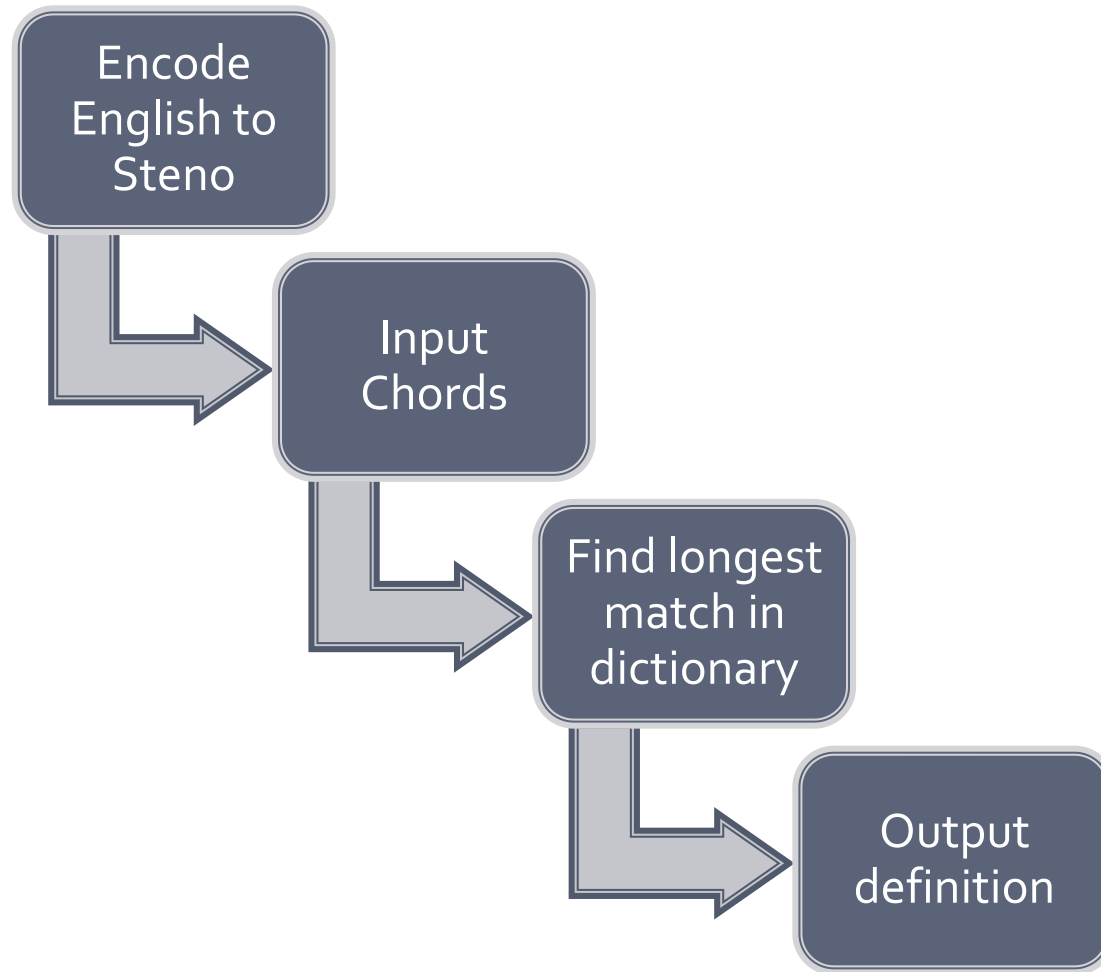
4,194,303 possible chords

How Does It Work?

- No spacebar
- Two-dimensional syllabic chords
- Most words can be written phonetically
- Each stenographer's dictionary is unique



Flow Diagram



Multisyllabic Words



PAOEU



pie



THON



python



DPLORBL → **deplorable**



PRIFRL → **peripheral**

```
original = raw_input("Enter a word:")

if original.isalpha():
    word = original.lower()
    first = word[0]
    print first
else:
    print "Not a word."
```

Using Plover With Python

QWERTY	STENO
143	54



QWERTY

b: go **B**ack one
word

q: re**Q**ord
ma**Q**ro?!

STENO

GLERCH: Launch browser
and perform Google search
on text in clipboard

QUARN: Cut highlighted
text and append to
prespecified bug-tracking
document

The Altruistic Argument

- 35 million people with hearing loss in the US
- <2% know Sign Language
- <400 Certified Captioners
- Average captioner age is 50
- 3 to 8 million people with speech disabilities

The Proprietary Model Is Broken

- Virtually all steno schools are for-profit
- Startup costs include \$1,000 student machine and \$500 hobbled software, plus ~\$12,000/year tuition
- Nationwide dropout rate is 85%
- Reaching 225 WPM can take 2 - 6 years

No Amateurs, No Future



Amateur

\$50 Ukulele

Free Music Lessons

Lots of Practice

Professional

\$50,000 diamond-encrusted guitar

\$60,000 degree from music school

No guarantee of employment

WARNING!

FRANGIPANI

GUARDIAN

BEMUSEMENT

ANTIDISESTABLISHMENTARIANISM

SNAILS

ENTRIES
DEFINED 00107

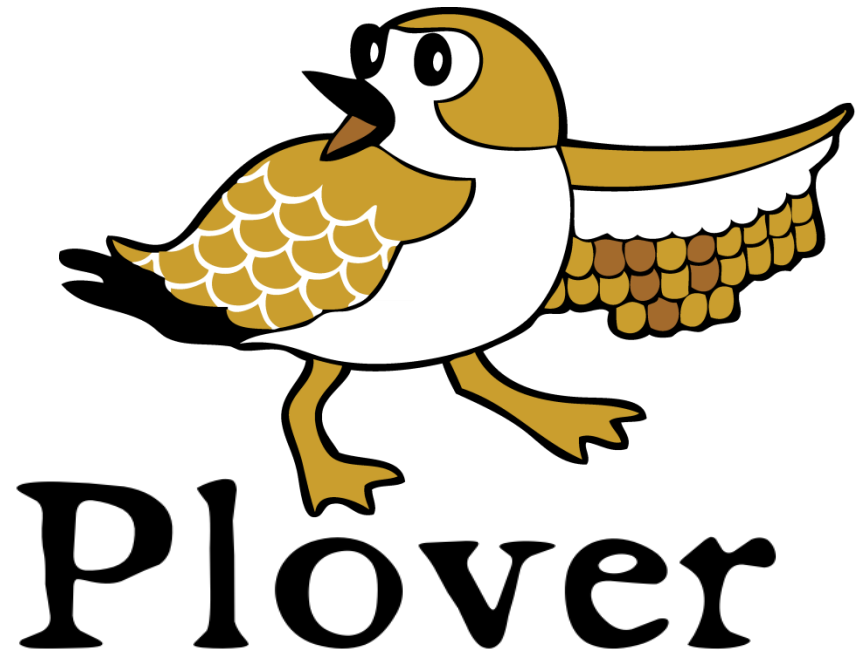
COMPRESSION
KPREGS

HOVER PLOVER

Plover Resources

Plover Wiki: <http://ploversteno.org>

- Fly
- Plover Aviary
- Plover Blog
- Plover Dojo
- Steno 101
- Steno Typer
- Steno Hero Alpha



But... But speech recognition!!

CRITERION	WINNER
Speed	Steno
Accuracy	Steno
Customizability	Steno
Portability	Voice
Learning Curve	Voice (beginner)/Steno (advanced)
Privacy	Steno
Determinism	Steno

<http://stenoknight.com/speechrec>