# Programmatic Generation Of Symbols And Footprints

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# What's Your Problem, Pal?

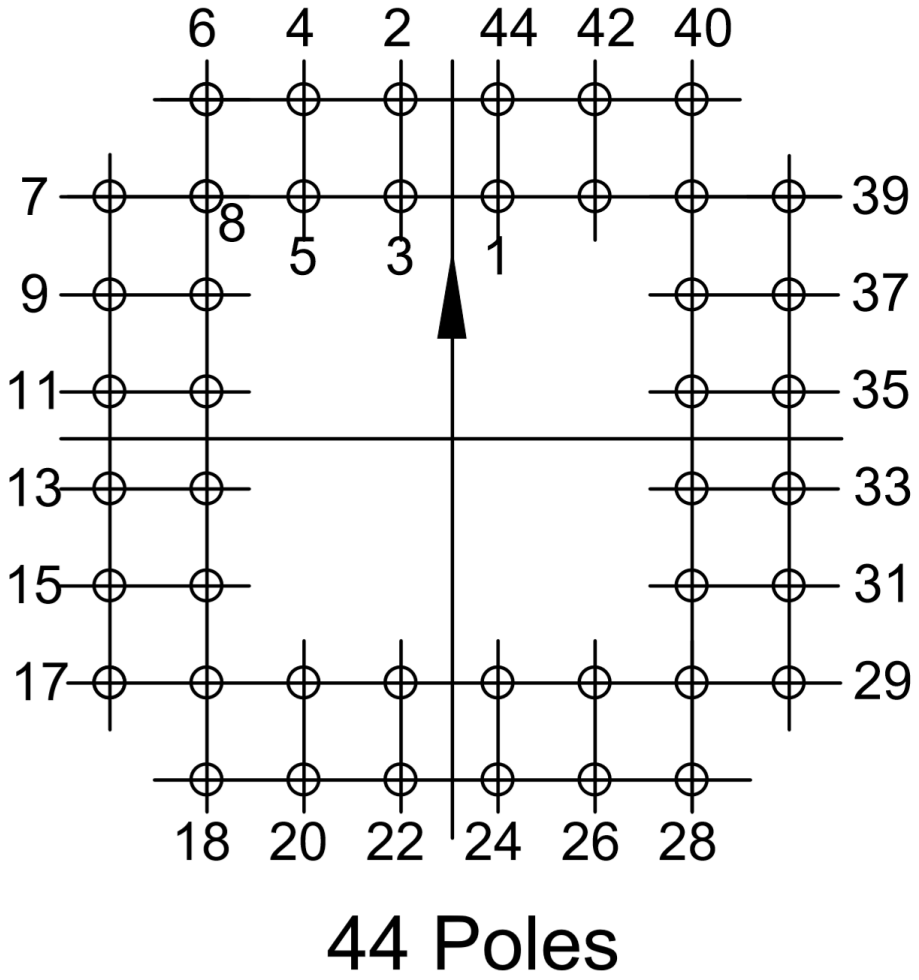
- I don't like dragging and dropping things that need to be precise and grids and stuff
- I don't like doing math where I can only see the result, not the methodology
- I like programming, and spending 2x programming time is worth it to me

# Python Plus Our Friend Pint

Pint:

- Knows about units and conversion
- Knows about tolerance (kinda)

# My First Footprint




44 Poles

# How To Generate?

- 8 x 8 grid? Not very reusable
- Figure out “stitching”

# Inside a Footprint Pad

```
(pad 1 thru_hole circle (at 0 0) (size 1.524 1.524)
(drill 1) (layers *.Cu *.Mask))
```

| | |
|---|---|
| pad | it's a pad |
| 1 | its number is 1 |
| thru_hole | it's a through-hole pad |
| circle | it's circular |
| at 0 0 | its center is at 0 mm x 0 mm |
| size 1.524 1.524 | it is 1.524 mm x 1.524 mm in size |
| drill 1 | there is a hole in it that is 1 mm diameter |

# Inside a Symbol Pin

```
X I/O 11 -150 -1150 100 R 50 50 1 1 B
```

| | |
|---|---|
| X | it's a pin |
| I/O | its name is "I/O" |
| 11 | it's pin number 11 |
| -150 | X position is -150 mils (NOT mm) |
| -1150 | Y position is 1150 mils (NOT mm) (and no, I don't know why it is negated) |
| 100 | Length |
| R | Pin goes to the right (L goes to the left, Up and Down also) |
| 50 | 50 mil number size |
| 50 | 50 mil text size |
| 1 | Something |
| 1 | Something |
| B | Type (input, output, power input, etc.) |

# The Code I Did

https://github.com/bcr/PyKi

# Things That Might Happen Next

- Command Line Interface
- Modify files directly