

# DIY Geocoder

by Zain Memon (@zainy)  
zain@inzain.net

# Geocoding

converting a **point on a map** into an **address**

```
>>> geocode(37.4037, -121.976)  
'5001 Great America Pkwy, Santa Clara, CA'
```

# Reverse Geocoding

converting an **address** into a **point on a map**

```
>>> reverse_geocode(  
...     '11 Wall Street, New York, NY')  
(40.70691, -74.01112)
```

**Why make your own  
geocoder?**

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# Why make your own geocoder?

- It's faster.

# Ingredients

- PostGIS-enabled database  
`CREATE EXTENSION postgis`
- Fuzzy string matching  
`CREATE EXTENSION fuzzystmatch`
- Tiger 2010 shapefiles  
<http://tinyurl.com/tiger-shapefiles>

# Install

<http://tinyurl.com/geocoder-install>

# Address Normalization!

```
SELECT
  address, streetname, streettypeabbrev
FROM
  normalize_address(
    '60 Rainbow Road, Beverly Hills, CA')
```

# Address Normalization!

address		streetname		streettypeabbrev
-----+		-----+		-----
60		Rainbow		Rd

# Geocoding!

```
SELECT
    ST_Y(geomout) AS lat,
    ST_X(geomout) AS lon
FROM
    geocode(' 2500 Farmers Rd
Columbus, Ohio')
```

# Geocoding!

lat		lon
-----+		
40.10805		-83.08245



# Reverse Geocoding!

```
SELECT
  pprint_addy(r.addy[1]) as addy
FROM
  reverse_geocode(
    ST_GeomFromText(
      'POINT(-71.06941 42.34225)', 4269)
  ) as r
```

# Caveats

- US-only
- Requires decent address quality

# Other Cool Stuff

- Finding the nearest intersection (cross streets) to a point
- Finding all the addresses at the intersection of two streets
- Pretty-printing normalized addresses
- Getting census tract info for a point

# </DIY Geocoder>

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