

# Table of Contents

|                                |   |
|--------------------------------|---|
| Geometry Commands .....        | 1 |
| Convert .....                  | 1 |
| Decimal Degrees to Point ..... | 2 |
| GeoHash Bounds .....           | 2 |
| GeoHash Decode .....           | 3 |
| GeoHash Encode .....           | 3 |
| GeoHash Neighbors .....        | 3 |
| Great Circle Arc .....         | 4 |
| Offset .....                   | 5 |
| orthodromicDistance .....      | 6 |
| Plot .....                     | 6 |
| Point to Decimal Degrees ..... | 7 |

## Geometry Commands

### Convert

Convert a geometry from one format to another.

| Short Name | Long Name        | Description  |
|------------|------------------|--|
| -i         | --input          | The input geometry   |
| -f         | --format         | The output format (wkt, geojson, gml2, gml3, kml, georss, gpx, csv, wkb) |
| -p         | --format-options | The output format options  |
| -t         | --type           | The output type (geometry, feature, layer)                               |
|            | --help           | Print the help message   |
|            | --web-help       | Open help in a browser   |

```
geoc geometry convert -i "POINT(-122.386371 47.581154)" -f geojson -t feature
```

```
{"type":"Feature","geometry":{"type":"Point","coordinates":[-122.3864,47.5812]},  
"properties":{},"id":"1"}
```

# Decimal Degrees to Point

Convert a decimal degrees formatted string into a Point.

| Short Name | Long Name        | Description                     |
|------------|------------------|---------------------------------|
| -d         | --decimaldegrees | The decimal degrees             |
| -t         | --type           | The output type (xy, wkt, json) |
|            | --help           | Print the help message          |
|            | --web-help       | Open help in a browser          |

```
geoc geometry dd2pt -d "122d 31m 32.23s W, 47d 12m 43.28s N" -t wkt
```

```
POINT (-122.52561944444444 47.212022222222224)
```

# GeoHash Bounds

Calculate the geohashes for the given bounds.

| Short Name | Long Name         | Description  |
|------------|-------------------|--|
| -b         | --bounds          | The input geometry   |
| -t         | --type            | The encoding type (string or long). The default is string. |
| -n         | --number-of-chars | The number of characters. The default is 9.                |
| -d         | --bit-depth       | The bit depth. The default is 52.                          |
|            | --help            | Print the help message                                     |
|            | --web-help        | Open help in a browser                                     |

```
geoc geometry geohash bounds -b "120, 30, 120.0001, 30.0001" -t long -d 45
```

```
28147497671064
28147497671068
28147497671112
28147497671066
28147497671070
28147497671114
28147497671088
28147497671092
28147497671136
```

# GeoHash Decode

Decode a GeoHash to a Geometry.

| Short Name | Long Name  | Description                              |
|------------|------------|--|
| -i         | --input    | The input geohash                        |
| -t         | --type     | Whether the geohash is a point or bounds |
|            | --help     | Print the help message                   |
|            | --web-help | Open help in a browser                   |

```
geoc geometry geohash decode -i uf8vk6wjr -t point
```

```
POINT (35.00001668930054 60.00000715255737)
```

# GeoHash Encode

Encode a Geometry as a GeoHash.

| Short Name | Long Name         | Description  |
|------------|-------------------|--|
| -i         | --input           | The input geometry   |
| -t         | --type            | The encoding type (string or long). The default is string. |
| -n         | --number-of-chars | The number of characters. The default is 9.                |
| -d         | --bit-depth       | The bit depth. The default is 52.                          |
|            | --help            | Print the help message                                     |
|            | --web-help        | Open help in a browser                                     |

```
geoc geometry geohash encode -i "POINT(-122.386371 47.581154)"
```

```
c22yxjbuq
```

# GeoHash Neighbors

Get a geohash's neighbors.

| Short Name | Long Name         | Description                                 |
|------------|-------------------|---|
| -i         | --input           | The input geometry                          |
| -n         | --number-of-chars | The number of characters. The default is 9. |
| -d         | --bit-depth       | The bit depth. The default is 52.           |
|            | --help            | Print the help message                      |
|            | --web-help        | Open help in a browser                      |

```
geoc geometry geohash neighbors -i uf8vk6wjr
```

```
NORTH,uf8vk6wjx
NORTHEAST,uf8vk6wm8
EAST,uf8vk6wm2
SOUTHEAST,uf8vk6wm0
SOUTH,uf8vk6wjp
SOUTHWEST,uf8vk6wjn
WEST,uf8vk6wjq
NORTHWEST,uf8vk6wjw
```

## Great Circle Arc

Create a great circle arc.

| Short Name | Long Name     | Description            |
|------------|---------------|------------------------|
| -e         | --ellipsoid   | The ellipsoid          |
| -p         | --start-point | The start point        |
| -t         | --end-point   | The end point          |
| -n         | --num-points  | The number of points   |
|            | --help        | Print the help message |
|            | --web-help    | Open help in a browser |

```
geoc geometry greatcirclearc -p POINT (-122 48) -t POINT (-0.102938 51.498749) -e
wgs84 -n 20
```

```

LINESTRING (-119.07040273132067 50.67129040608734, -115.79405787410982
53.25898813815459, -112.10566632488812 55.74416257443563, -107.93031121546862
58.102903619395605, -103.18586832746001 60.30516464523606, -97.78964326539094
62.313702219535685, -91.67188919322786 64.08357246715578, -84.79846274611634
65.56300075396796, -77.20148714844558 66.69673003845362, -69.00888413693454
67.4327000137296, -60.454039139748815 67.73150516117609, -51.847144661724116
67.57568999780139, -43.51024818547282 66.97446827309976, -35.70614774738105
65.96118559566465, -28.596592724101157 64.58499988892942, -22.24128289210202
62.90104269692094, -16.623473379491926 60.96269894447343, -11.681762264482387
58.81725900451406, -7.335682843452773 56.50439016948547, -3.501944007479139
54.05631263013969)

```



## Offset

Create a Geometry offset from the input Geometry.

| Short Name | Long Name            | Description                                     |
|------------|----------------------|---|
| -i         | --input              | The input geometry                              |
| -d         | --offset             | The offset distance                             |
| -s         | --quadrant-segements | The number of quadrant segments (defaults to 8) |
|            | --help               | Print the help message                          |
|            | --web-help           | Open help in a browser                          |

```

geoc geometry offset -i LINESTRING (-120.41362631285119 47.87883318858252,
-3.9909723099333974 39.24424611524387) -d 5 -s 8

```

```
LINESTRING (-120.0438126769743 52.86513822084032, -3.621158674056503  
44.23055114750167)
```



## orthodromicDistance

Calculate the orthodromic distance between two points..

| Short Name | Long Name     | Description            |
|------------|---------------|------------------------|
| -e         | --ellipsoid   | The ellipsoid          |
| -p         | --start-point | The start point        |
| -t         | --end-point   | The end point          |
|            | --help        | Print the help message |
|            | --web-help    | Open help in a browser |

```
geoc geometry orthodromicdistance -p POINT (-122 48) -t POINT (-0.102938 51.498749) -e  
wgs84
```

```
7674355.352400642
```

## Plot

Draw a geometry to a plot.

| Short Name | Long Name | Description        |
|------------|-----------|--------------------|
| -i         | --input   | The input geometry |
| -f         | --file    | The output file    |

| Short Name | Long Name     | Description                 |
|------------|---------------|-----------------------------|
| -w         | --width       | The image width             |
| -h         | --height      | The image height            |
| -l         | --legend      | Whether to show the legend  |
| -r         | --fill-coords | Whether to fill coordinates |
| -p         | --fill-polys  | Whether to fill polygons    |
| -d         | --draw-coords | Whether to draw coordinates |
|            | --help        | Print the help message      |
|            | --web-help    | Open help in a browser      |

```
geoc geometry plot -i "POLYGON ((-113.98365269610397 52.04260423559353,
-117.55190821991903 41.99216856357597, -102.82940482544078 37.1267755781612,
-82.26457660787091 47.05513909003821, -102.75935045963138 44.33220905070587,
-101.89775634863287 52.5472919646931, -113.98365269610397 52.04260423559353)))" -f
target/geometry_plot.png
```



## Point to Decimal Degrees

Format a Point in Decimal Degrees.

| Short Name | Long Name | Description |
|------------|-----------|-------------|
| -p         | --point   | The Point   |

| Short Name | Long Name  | Description                                    |
|------------|------------|--|
| -t         | --type     | The output type (dms, dms_char, ddm, ddm_char) |
|            | --help     | Print the help message                         |
|            | --web-help | Open help in a browser                         |

```
geoc geometry pt2dd -p "POINT (-122 48)" -t dms
```

```
-122° 0' 0.0000" W, 48° 0' 0.0000" N
```