

# añadir\_municipios\_cdmx\_uber\_taxis.R

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```
### Cargamos las librerias
library(geonames) ### Geonames es una libreria de libre acceso y requiere crear un cuenta
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##   filter, lag

## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
```

```
### Cargamos la base de datos
cdmx.rutas <- read.csv("cdmx_transporte_raw.csv")

### Vemos la información de la base de datos
head(cdmx.rutas); tail(cdmx.rutas); summary(cdmx.rutas); dim(cdmx.rutas);
```

```
##   id          vendor_id    pickup_datetime    dropoff_datetime
## 1  1  México DF Taxi de Sitio 2016-09-16 07:14:12 2016-09-18 04:41:40
## 2  2  México DF Taxi Libre 2016-09-18 06:16:33 2016-09-18 10:11:43
## 3  3  México DF Taxi Libre 2016-09-18 10:11:50 2016-09-18 10:23:11
## 4  4  México DF Taxi Libre 2016-09-18 10:23:38 2016-09-18 10:30:53
## 5  5  México DF Taxi Libre 2016-09-18 10:44:18 2016-09-18 10:51:40
## 6  6  México DF Taxi Libre 2016-09-18 10:58:07 2016-09-18 10:59:46
## pickup_longitude pickup_latitude dropoff_longitude dropoff_latitude
## 1      -99.09737      19.41687      -99.20273      19.43035
## 2      -99.29715      19.32213      -99.28995      19.32654
## 3      -99.28960      19.32626      -99.27187      19.32853
## 4      -99.27116      19.32888      -99.27990      19.32626
## 5      -99.28276      19.32694      -99.29170      19.32275
## 6      -99.28971      19.32293      -99.28928      19.32598
## store_and_fwd_flag trip_duration dist_meters wait_sec
## 1                N      120449      12373      242
## 2                N      14110      1700      461
## 3                N       681      2848      129
```

```
## 4          N          436          1409          106
## 5          N          442          1567           85
## 6          N          100           797           19
```

```
##          id          vendor_id      pickup_datetime      dropoff_datetime
## 12689 12689    MÃ©xico DF Radio Taxi 2016-10-27 07:34:15 2016-10-27 09:09:54
## 12690 12690    MÃ©xico DF Radio Taxi 2016-10-27 09:10:05 2016-10-27 10:14:10
## 12691 12691    MÃ©xico DF Taxi de Sitio 2016-10-27 10:53:15 2016-10-27 11:01:53
## 12692 12692    MÃ©xico DF Taxi Libre 2016-10-27 11:19:44 2016-10-27 11:38:35
## 12693 12693    MÃ©xico DF Taxi de Sitio 2016-10-28 06:49:41 2016-10-28 06:51:25
## 12694 12694    MÃ©xico DF Radio Taxi 2016-10-27 10:26:38 2016-10-28 07:10:21
##          pickup_longitude pickup_latitude dropoff_longitude dropoff_latitude
## 12689          -99.18011          19.37015          -99.18085          19.36926
## 12690          -99.18076          19.36921          -99.18001          19.37027
## 12691          -99.05958          19.30722          -99.06580          19.30647
## 12692          -99.17064          19.28364          -99.17819          19.28098
## 12693          -99.19438          19.39677          -99.19462          19.39672
## 12694          -99.18013          19.36992          -99.18055          19.37228
##          store_and_fwd_flag trip_duration dist_meters wait_sec
## 12689          N          5740          6872          1347
## 12690          N          3846          8261          427
## 12691          N          518          2498          115
## 12692          N          1131          6051          228
## 12693          N          104           49           96
## 12694          N          31424          3448          217
```

```
##          id          vendor_id      pickup_datetime      dropoff_datetime
## Min.      : 1      Length:12694      Length:12694      Length:12694
## 1st Qu.: 3174      Class :character      Class :character      Class :character
## Median : 6348      Mode  :character      Mode  :character      Mode  :character
## Mean      : 6348
## 3rd Qu.: 9521
## Max.      :12694
## pickup_longitude pickup_latitude dropoff_longitude dropoff_latitude
## Min.      :-108.99      Min.      :18.83      Min.      :-108.99      Min.      :18.83
## 1st Qu.: -99.20      1st Qu.:19.33      1st Qu.: -99.19      1st Qu.:19.33
## Median : -99.16      Median :19.37      Median : -99.16      Median :19.37
## Mean      : -99.14      Mean      :19.39      Mean      : -99.13      Mean      :19.39
## 3rd Qu.: -99.11      3rd Qu.:19.43      3rd Qu.: -99.11      3rd Qu.:19.43
## Max.      : -86.87      Max.      :25.75      Max.      : -86.87      Max.      :25.78
## store_and_fwd_flag trip_duration      dist_meters      wait_sec
## Length:12694      Min.      : 2      Min.      : 21      Min.      :0.000e+00
## Class :character      1st Qu.: 484      1st Qu.: 1775      1st Qu.:8.900e+01
## Mode  :character      Median : 1034      Median : 3948      Median :2.340e+02
##          Mean      : 22984      Mean      : 6666      Mean      :1.161e+06
##          3rd Qu.: 2369      3rd Qu.: 8265      3rd Qu.:5.910e+02
##          Max.      :16570949      Max.      :802537      Max.      :4.429e+09
```

```
## [1] 12694      12
```

```
### Seleccionamos los orgines y destino
```

```
### Origen
```

```
origen <- cdmx.rutas[,c("pickup_longitude","pickup_latitude")]
head(origen)
```

```
## pickup_longitude pickup_latitude
## 1 -99.09737 19.41687
## 2 -99.29715 19.32213
## 3 -99.28960 19.32626
## 4 -99.27116 19.32888
## 5 -99.28276 19.32694
## 6 -99.28971 19.32293
```

```
### Destino
destino <- cdmx.rutas[,c("dropoff_longitude","dropoff_latitude")]
head(destino)
```

```
## dropoff_longitude dropoff_latitude
## 1 -99.20273 19.43035
## 2 -99.28995 19.32654
## 3 -99.27187 19.32853
## 4 -99.27990 19.32626
## 5 -99.29170 19.32275
## 6 -99.28928 19.32598
```

```
### Mediante GNfindNearbyPostalCodes realizamos una prueba para obter el municipio
### Para utilizar geonames creamos una cuenta previamente
options(geonamesUsername="cristophercano")
```

```
### Municipio de origen
(mun.origen.1<-GNfindNearbyPostalCodes(lat = origen[1,2], lng=origen[1,1],radius = "10", maxRows = "1",
```

```
## adminCode2 adminCode3 adminName3 adminCode1 adminName2
## 1 017 15 Ciudad de México 09 Venustiano Carranza
## lng distance countryCode postalCode adminName1
## 1 -99.0973685123949 0 MX 15010 Distrito Federal
## placeName lat
## 1 Valentín Gómez Farias 19.4168743724184
```

```
### Almacenamos solo el nombre del municipio de origen
(nombre.mun.o <- mun.origen.1$adminName2)
```

```
## [1] "Venustiano Carranza"
```

```
##La variable que nos devuelve es adminName2
(paste("municipio de origen: ",nombre.mun.o))
```

```
## [1] "municipio de origen: Venustiano Carranza"
```

```
### Municipio de destino
(mun.destino.1<-GNfindNearbyPostalCodes(lat = destino[1,2], lng=destino[1,1], radius = "10", maxRows =
```

```
##   adminCode2 adminCode3      adminName3 adminCode1      adminName2
## 1         016         11 Ciudad de México         09 Miguel Hidalgo
##               lng distance countryCode postalCode      adminName1
## 1 -99.2027286999851         0         MX         11530 Distrito Federal
##               placeName               lat
## 1 Polanco II Sección 19.4303531971542
```

```
### Almacenamos solo el nombre del municipio de origen
(nombre.mun.d <- mun.destino.1$adminName2)
```

```
## [1] "Miguel Hidalgo"
```

```
##La variable que nos devuelve es adminName2
(paste("municipio de destino: ",nombre.mun.d))
```

```
## [1] "municipio de destino: Miguel Hidalgo"
```