

615_mapping

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```
## -- Attaching packages ----- tidyverse 1.2.1 --
```

```
## √ ggplot2 3.1.0    √ purrr  0.2.5
## √ tibble  1.4.2    √ dplyr  0.7.7
## √ tidyr   0.8.1    √ stringr 1.3.1
## √ readr   1.1.1    √ forcats 0.3.0
```

```
## -- Conflicts ----- tidyverse_conflicts() --
```

```
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
```

```
## rgdal: version: 1.3-6, (SVN revision 773)
```

```
## Geospatial Data Abstraction Library extensions to R successfully loaded
```

```
## Loaded GDAL runtime: GDAL 2.1.3, released 2017/20/01
```

```
## Path to GDAL shared files: /Library/Frameworks/R.framework/Versions/3.5/Resources/library/rgdal/gdal
```

```
## GDAL binary built with GEOS: FALSE
```

```
## Loaded PROJ.4 runtime: Rel. 4.9.3, 15 August 2016, [PJ_VERSION: 493]
```

```
## Path to PROJ.4 shared files: /Library/Frameworks/R.framework/Versions/3.5/Resources/library/rgdal/proj
```

```
## Linking to sp version: 1.3-1
```

```
##
```

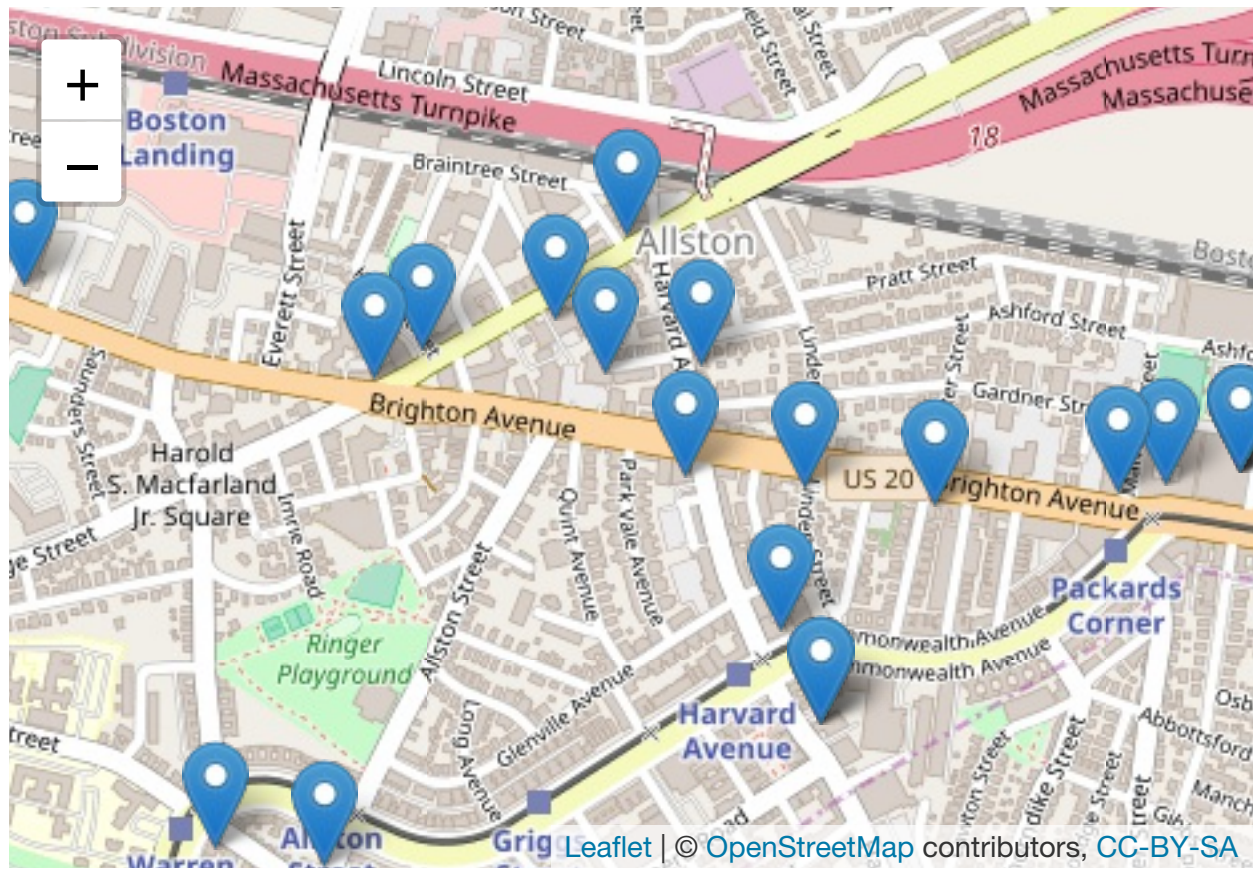
```
## Attaching package: 'lubridate'
```

```
## The following object is masked from 'package:base':
```

```
##
```

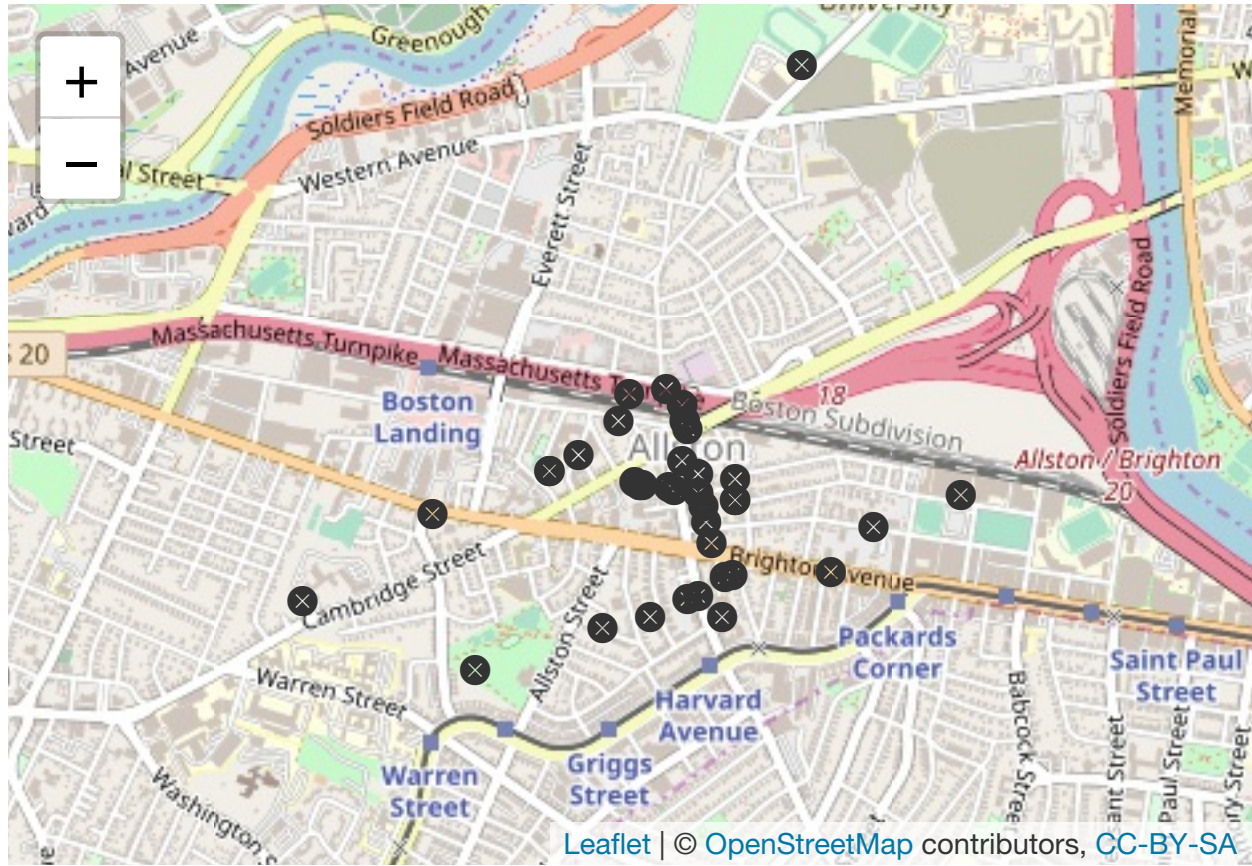
```
##      date
```

Question 1:How many retail shops in Allston have legal licence until now?



There are 36 retail shops in Allston in total, 29 of which has active license until now, however, only 21 shops have complete location data, they are showed in this map.

Question 2: How many restaurants nearby Boston University where are three main areas-Fenway, Back Bay and Allston-occurred violation events during the last three months (08/01/2018-10/31/2018)? How many violations took place by these restaurants?



There are 65 restaurant nearby BU occurred violation in the last three month, they are concentrated around Allston. Ectracting the restaurants which have not complete location information in our dataset, here are 45 restaurants shows in the map. The orange points represent the the times of violation less than 2, the red one represents the violation more than 2 times in the last three months. Hope this map can give BU students and staffs some suggestions for choosing a better restaurant.