

# Untitled

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```
library(raster)
```

```
## Loading required package: sp
```

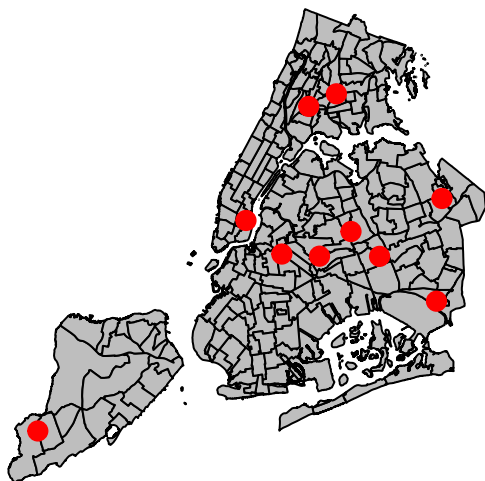
```
library(rgeos)
```

```
## rgeos version: 0.3-22, (SVN revision 544)
## GEOS runtime version: 3.4.2-CAPI-1.8.2 r3921
## Linking to sp version: 1.2-4
## Polygon checking: TRUE
```

```
zip <- shapefile("../data/nynta_16d/nynta.shp")
zip
```

```
## class      : SpatialPolygonsDataFrame
## features    : 195
## extent      : 913175.1, 1067383, 120121.9, 272844.3 (xmin, xmax, ymin, ymax)
## coord. ref. : +proj=lcc +lat_1=40.66666666666666 +lat_2=41.03333333333333 +lat_0=40.16666666666666 +
## variables   : 7
## names       : BoroCode,      BoroName, CountyFIPS, NTACode,   NTAName, Shape_Leng, Shape_Area
## min values  :              1,          Bronx,      005,    BK09,   Airport,   11000.18,   5573902
## max values  :              5, Staten Island,      085,    SI99, Yorkville,  490426.75,  327760120
```

```
set.seed(0)
xy <- coordinates(spsample(zip, 10, 'random'))
plot(zip, col='gray')
points(xy, pch=20, col='red', cex=2)
```



```
#
extract(zip, xy)
```

```
##      point.ID poly.ID BoroCode      BoroName CountyFIPS NTACode
## 1           1      97         3      Brooklyn      047    BK78
## 2           2       6         2         Bronx      005    BX35
```

## 3	3	95	5	Staten Island	085	SI11
## 4	4	121	2	Bronx	005	BX17
## 5	5	133	4	Queens	081	QN42
## 6	6	188	1	Manhattan	061	MN22
## 7	7	171	4	Queens	081	QN19
## 8	8	123	4	Queens	081	QN17
## 9	9	156	4	Queens	081	QN05
## 10	10	24	4	Queens	081	QN54
##				NTAName	Shape_Leng	Shape_Area
## 1				Bushwick South	40735.74	40169452
## 2				Morrisania-Melrose	27740.85	16891753
## 3	Charleston-Richmond			Valley-Tottenville	84869.60	145667897
## 4				East Tremont	29632.19	19257783
## 5				Oakland Gardens	42405.91	51013694
## 6				East Village	13539.25	10896915
## 7				Glendale	41514.44	30016736
## 8				Forest Hills	36171.50	57827640
## 9				Rosedale	63328.76	61592332
## 10				Richmond Hill	33791.57	50978896