ИТОГОВЫЙ ПРОЕКТ

Подготовила: Козлова Алина

ФАЙЛ С ДАННЫМИ О ПЛОТНОСТИ НАСЕЛЕНИЯ И ПРЕСТУПНОСТИ В МЕГАПОЛИСАХ США

```
data = read.table(file = "crime.txt", header =TRUE)
data
```

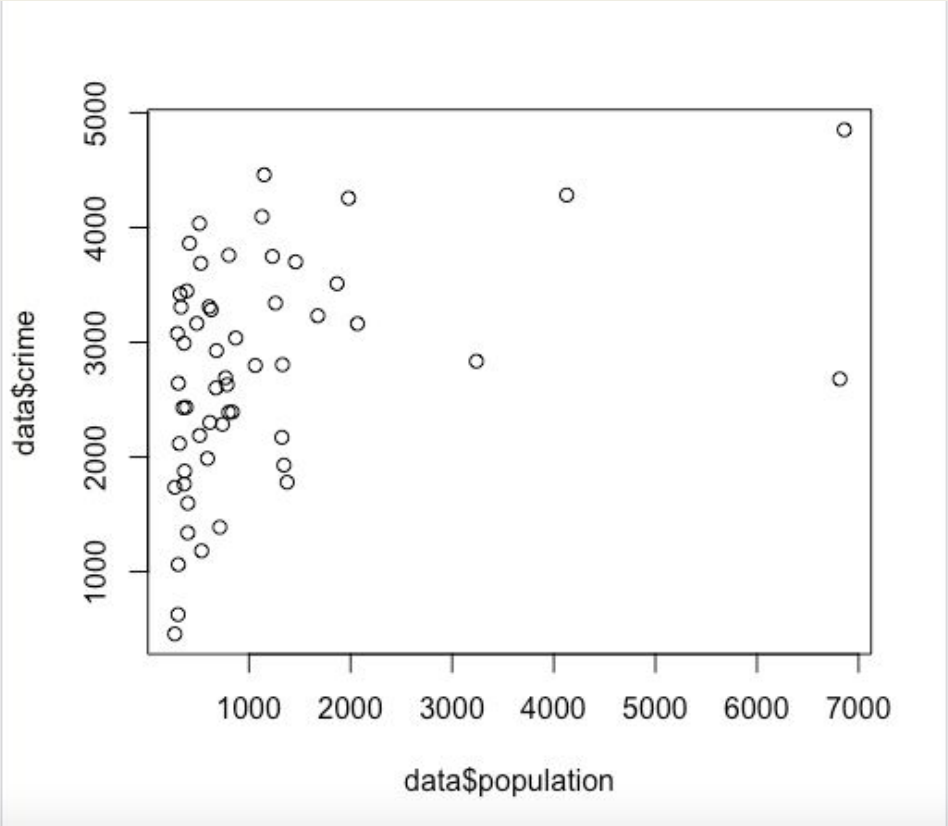
25:1 (Top Level) R Scrip

Console Terminal Jobs

~/

	city	population	nonwhite	density	crime
1	Akron	675	7.3	746	2602
2	Albany	713	2.6	322	1388
3	Allentown	534	0.8	491	1182
4	Anaheim	1261	1.4	1612	3341
5	Atlanta	1330	22.8	770	2805
6	Bakersfield	331	7.0	41	3306
7	Baltimore	1981	21.6	877	4256
8	Beaumont	315	20.7	240	2117
9	Binghamton	305	0.6	147	1063
10	Birmingham	739	32.1	272	2285
11	Boston	3239	3.4	1831	2835
12	Bridgeport	785	5.3	1252	2630
13	Buffalo	1324	6.8	832	2171
14	Canton	363	5.4	630	1764
15	Charlotte	388	24.2	328	3447
16	Chattanooga	306	17.6	308	2643
17	Chicago	6815	14.8	1832	2680
18	Cincinnati	1376	10.4	640	1780

Взаимосвязь населенности и преступлений



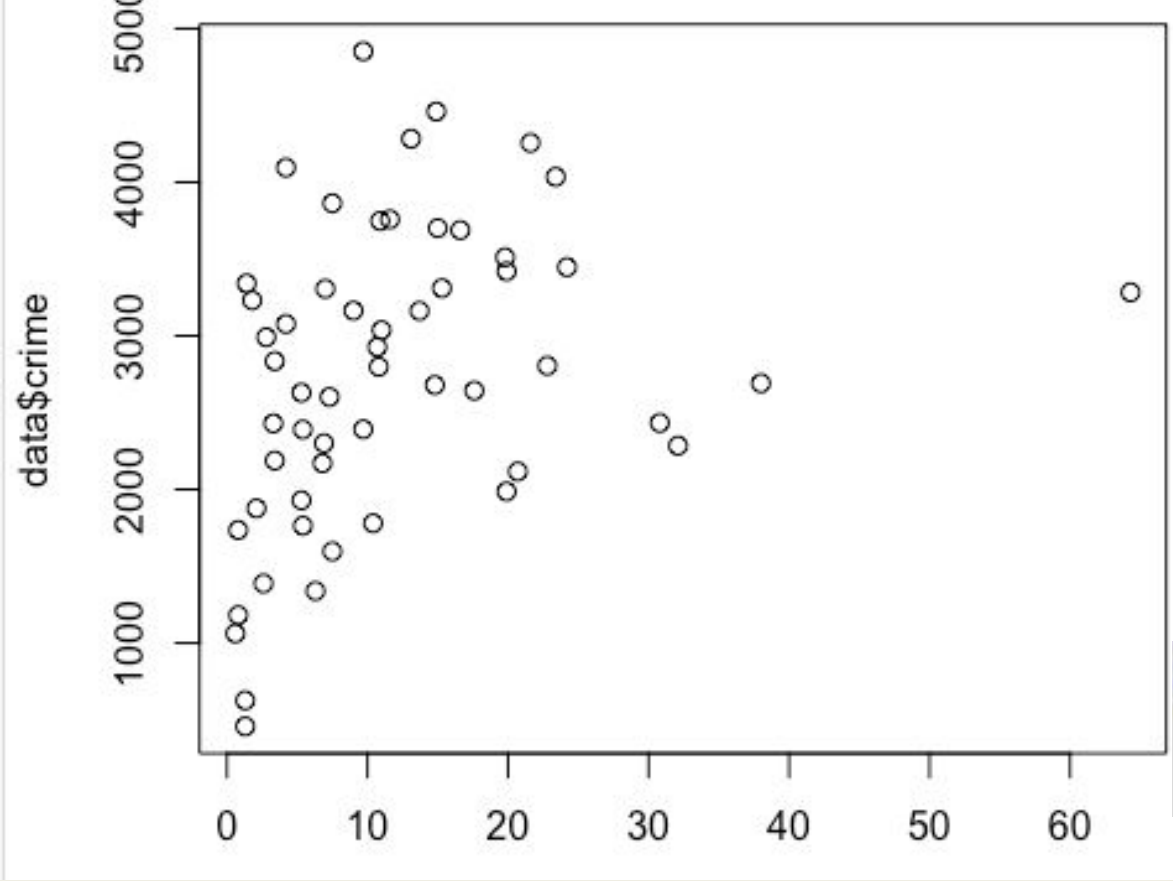

```
cor(data$population, data$crime)
plot(data$population, data$crime)
```

19:34 (Top Level)

Console Terminal Jobs

~/

```
> cor(data$population, data$crime)
[1] 0.3816201
```




```
cor(data$nonwhite, data$crime)
plot(data$nonwhite, data$crime)
```

(Top Level)

Terminal Jobs

```
> cor(data$nonwhite, data$crime)
[1] 0.3086026
```

```
data$nonwhite, data$crime)
```

ВЗАИМОСВЯЗЬ ПРОЦЕНТА ТЕМНОКОЖИХ ЛЮДЕЙ И ПРЕСТУПЛЕНИЙ

```
24  summary(data)
25
24:14  (Top Level)  R Script
```

Console Terminal Jobs

```
~/
[1] 0.3086026
> plot(data$nonwhite, data$crime)
> summary(data)
     city             population      nonwhite
 Length:55          Min.   : 270   Min.   : 0.60
 Class :character   1st Qu.: 385   1st Qu.: 4.20
 Mode  :character   Median : 675   Median : 9.70
                    Mean   :1093   Mean   :11.95
                    3rd Qu.:1246   3rd Qu.:15.95
                    Max.   :6860   Max.   :64.30
    density            crime
 Min.   :   37.0   Min.   : 458
 1st Qu.:  276.5   1st Qu.:2144
 Median :  431.0   Median :2798
 Mean   :  830.2   Mean   :2747
 3rd Qu.:  814.0   3rd Qu.:3380
 Max.   :13087.0   Max.   :4852
```

ОБЩАЯ ИНФОРМАЦИЯ ПО ПАРАМЕТРАМ

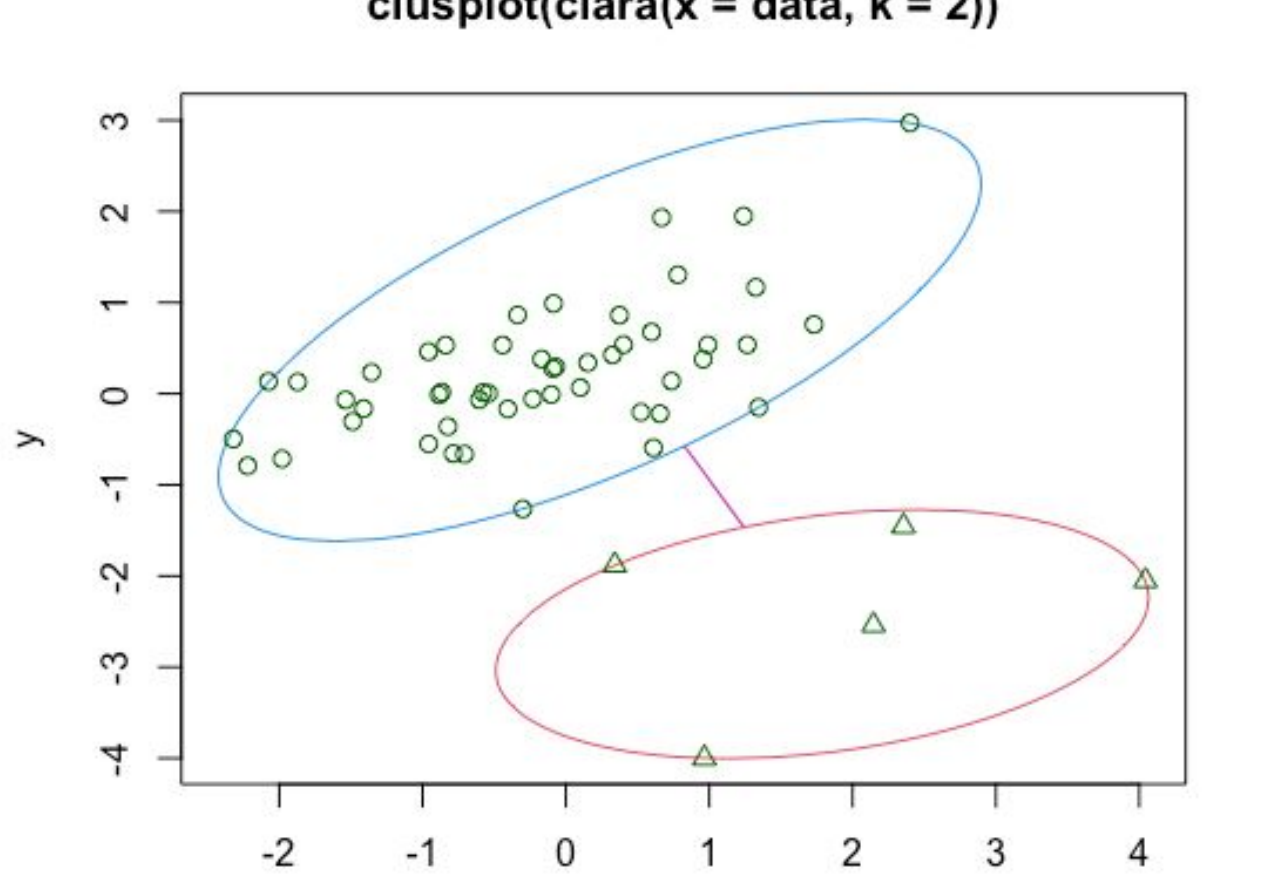
```r
cl2 = clara(data,2)
cl2
summary(cl2)
```

30:1 (Top Level) R Sc

Console Terminal Jobs

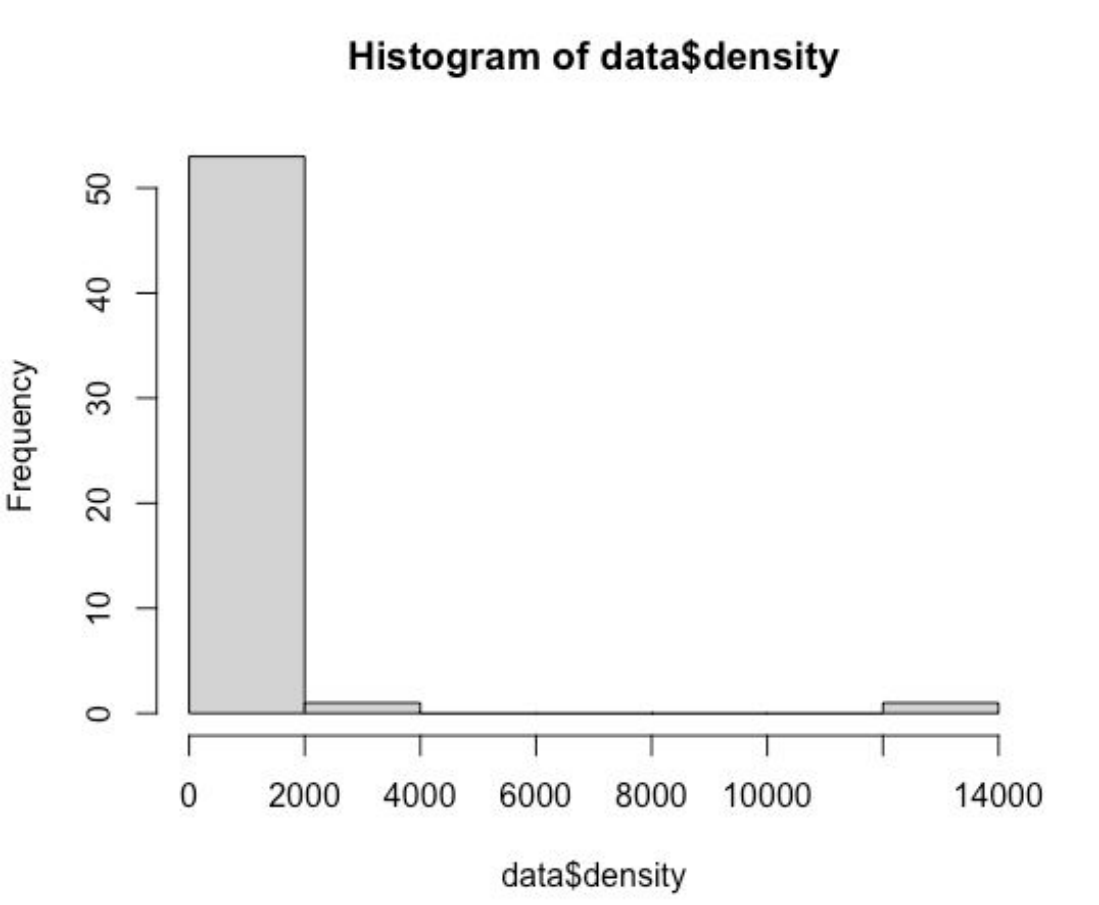
~/

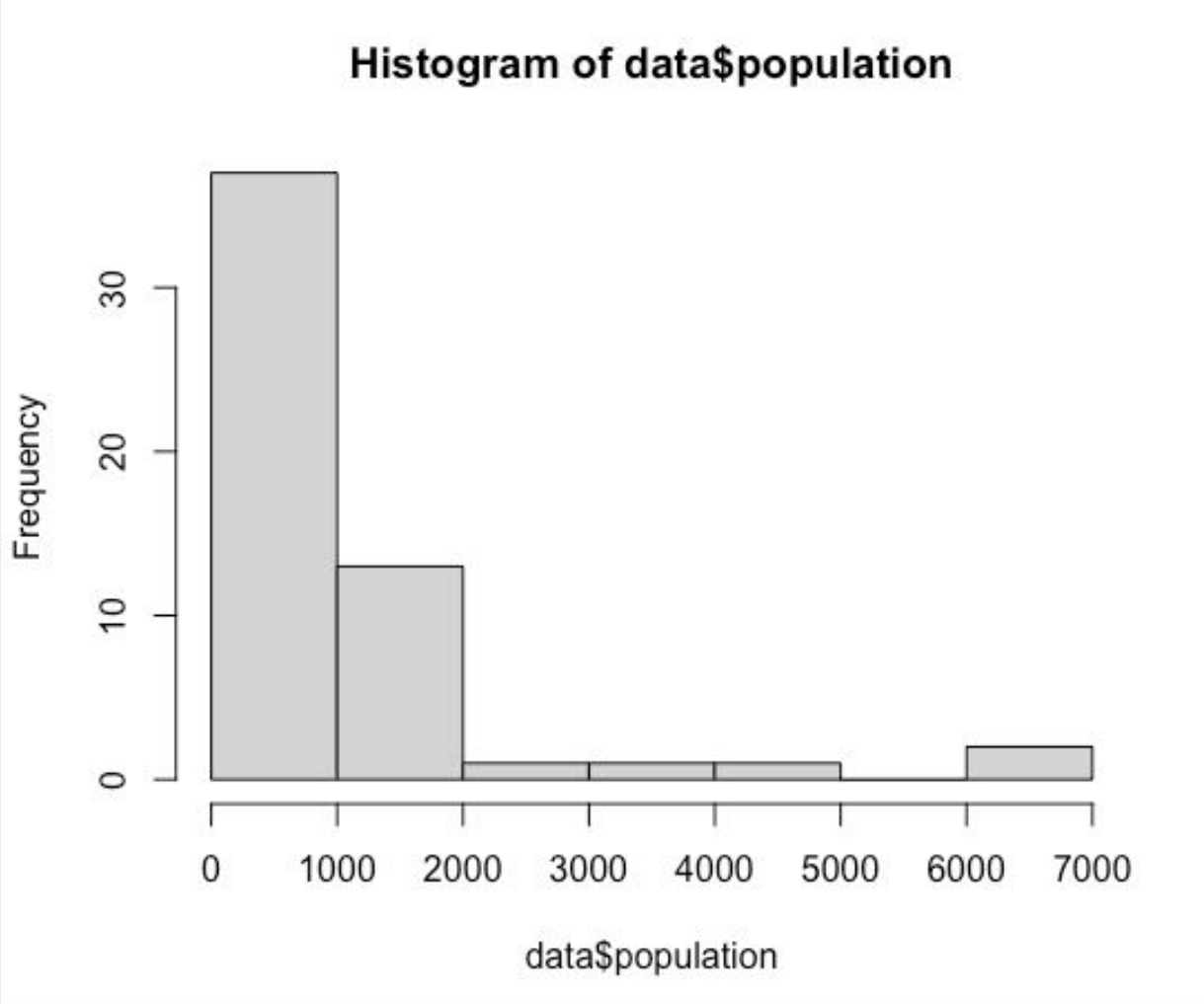
```
Call:    clara(x = data, k = 2)
Medoids:
     city population nonwhite density crime
[1,]   51        770     38.0     565  2691
[2,]   26       4127     13.1    2114  4283
Objective function:      1256.115
Clustering vector:       int [1:55] 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 2 1 ...
Cluster sizes:           50 5
Best sample:
 [1]  1  2  3  4  5  6  7  8  9 10 11 12 13 14 17 18 19 21 22 23
[21] 24 25 26 27 28 29 30 31 32 33 34 35 39 40 42 43 44 45 46 49
[41] 51 52 53 54

Available components:
 [1] "sample"     "medoids"    "i.med"      "clustering"
 [5] "objective"  "clusinfo"   "diss"       "call"
 [9] "silinfo"    "data"
>
```



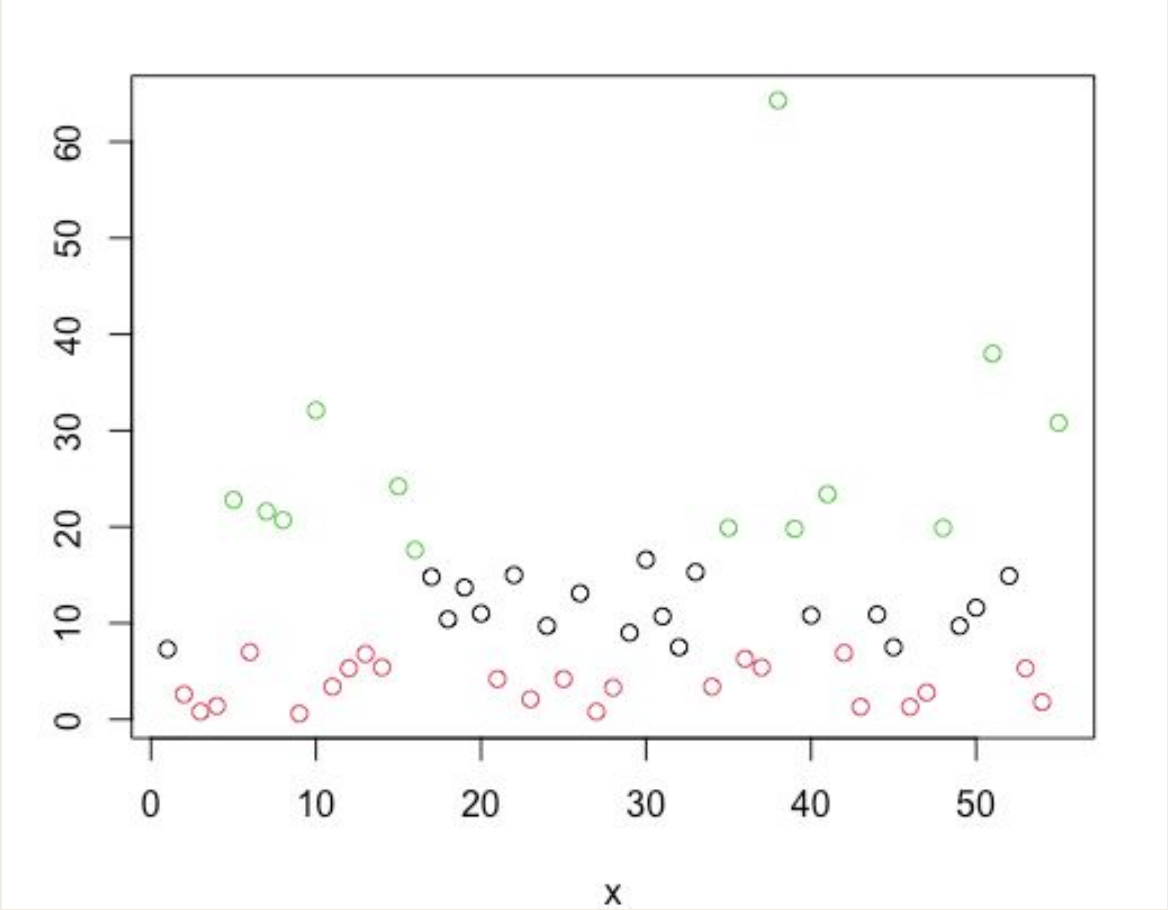
РАЗБИЕНИЕ НА КЛАСТЕРЫ

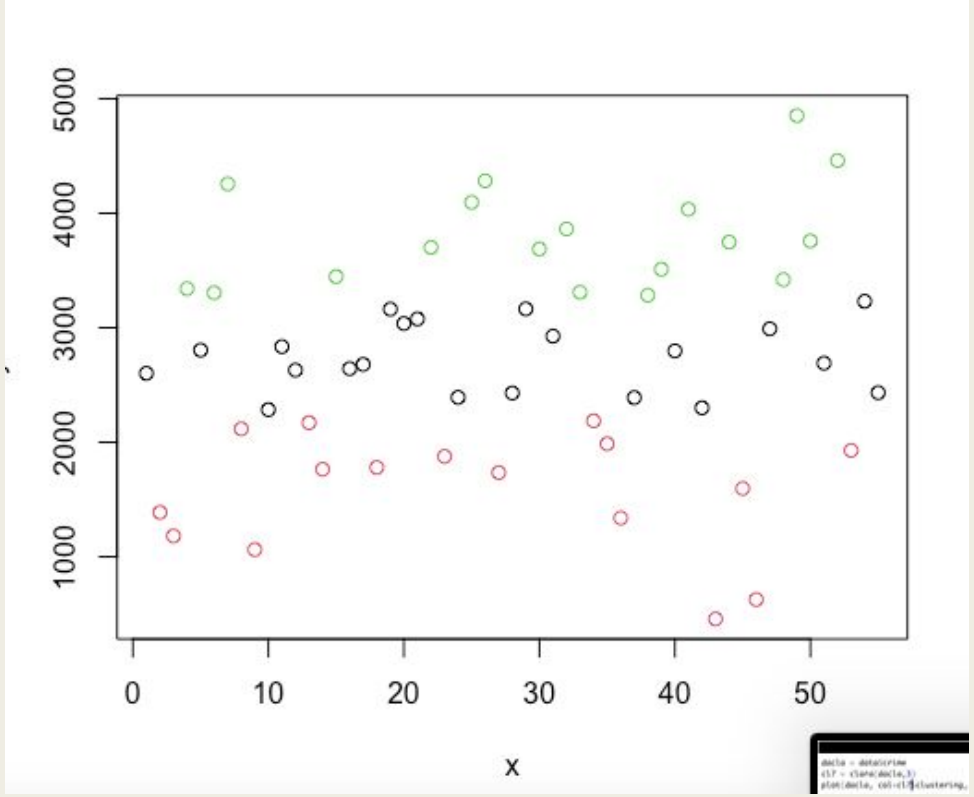
Вариационные ряды





Разбиение на кластеры по парметру nonwhite



Разбиение на кластеры по преступлениям

```
dacla = data$crime
cl7 = clara(dacla,3)
plot(dacla, col=cl7$clustering, xlab = "x", ylab="y")
```