

Statistical Inference Theory - Lab 1

Code ▾

CB.SC.I5DAS20032

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```
df <- USArrests
df
```

| | Murder <dbl> | Assault <int> | UrbanPop <int> | Rape <dbl> |
|-----------------|-----------------|-------------------------|-------------------|---------------|
| Alabama | 13.2 | 236 | 58 | 21.2 |
| Alaska | 10.0 | 263 | 48 | 44.5 |
| Arizona | 8.1 | 294 | 80 | 31.0 |
| Arkansas | 8.8 | 190 | 50 | 19.5 |
| California | 9.0 | 276 | 91 | 40.6 |
| Colorado | 7.9 | 204 | 78 | 38.7 |
| Connecticut | 3.3 | 110 | 77 | 11.1 |
| Delaware | 5.9 | 238 | 72 | 15.8 |
| Florida | 15.4 | 335 | 80 | 31.9 |
| Georgia | 17.4 | 211 | 60 | 25.8 |
| 1-10 of 50 rows | | Previous 1 2 3 4 5 Next | | |

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```
nrow(df)
```

```
[1] 50
```

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```
ncol(df)
```

```
[1] 4
```

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```
head(df)
```

| | Murder <dbl> | Assault <int> | UrbanPop <int> | Rape <dbl> |
|---------|-----------------|------------------|-------------------|---------------|
| Alabama | 13.2 | 236 | 58 | 21.2 |
| Alaska | 10.0 | 263 | 48 | 44.5 |

| | Murder <dbl> | Assault <int> | UrbanPop <int> | Rape <dbl> |
|------------|-----------------|------------------|-------------------|---------------|
| Arizona | 8.1 | 294 | 80 | 31.0 |
| Arkansas | 8.8 | 190 | 50 | 19.5 |
| California | 9.0 | 276 | 91 | 40.6 |
| Colorado | 7.9 | 204 | 78 | 38.7 |
| 6 rows | | | | |

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```
mean(df$Murder)
```

```
[1] 7.788
```

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```
median(df$UrbanPop)
```

```
[1] 66
```

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```
quantile(df$Assault)
```

```
0%  25%  50%  75% 100%
45  109  159  249  337
```

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```
range(df$Rape)
```

```
[1]  7.3 46.0
```

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```
cov(df)
```

```
      Murder  Assault UrbanPop  Rape
Murder 18.970465 291.0624  4.386204 22.99141
Assault 291.062367 6945.1657 312.275102 519.26906
UrbanPop  4.386204 312.2751 209.518776  55.76808
Rape    22.991412 519.2691  55.768082  87.72916
```

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```
cor(df)
```

| | Murder | Assault | UrbanPop | Rape |
|----------|------------|-----------|------------|-----------|
| Murder | 1.00000000 | 0.8018733 | 0.06957262 | 0.5635788 |
| Assault | 0.80187331 | 1.0000000 | 0.25887170 | 0.6652412 |
| UrbanPop | 0.06957262 | 0.2588717 | 1.00000000 | 0.4113412 |
| Rape | 0.56357883 | 0.6652412 | 0.41134124 | 1.0000000 |

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```
movies <- read.csv('rottenTomatoesMovies100.csv')
names(movies)
```

| [1] "Genre" | "Rank" | "RatingTomatometer" | "Title" | "No..of.R |
|-------------|--------|---------------------|---------|-----------|
| eviews" | | | | |

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```
summary(movies)
```

| | | Genre | Rank | | RatingTomatometer | | |
|----------------------------|----------------|----------|-------|----------|-------------------|---|--|
| Title | No..of.Reviews | | | | | | |
| Action & Adventure | : 100 | Min. | : 1.0 | 98% | :236 | 101 Dalmatians (1961) | |
| : 5 | Min. : 40.0 | | | | | | |
| Animation | : 100 | 1st Qu.: | 24.0 | 96% | :174 | Afghan Star (2009) | |
| : 5 | 1st Qu.: 58.0 | | | | | | |
| Art House & International: | 100 | Median : | 48.0 | 97% | :168 | Beauty and the Beast (1991) | |
| : 5 | | Median : | 95.5 | | | | |
| Classics | : 100 | Mean : | 48.7 | 100% | :160 | Harry Potter and the Deathly Hallows - Part 2 (2011): | |
| : 5 | | Mean : | 148.1 | | | | |
| Comedy | : 100 | 3rd Qu.: | 73.0 | 95% | :142 | Metropolis (1927) | |
| : 5 | 3rd Qu.:212.5 | | | | | | |
| Documentary | : 100 | Max. : | 100.0 | 94% | :117 | Miracle on 34th Street (1947) | |
| : 5 | | Max. : | 571.0 | | | | |
| (Other) | :1012 | | | (Other): | 615 | (Other) | |
| :1582 | | | | | | | |

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```
movies$ReviewBin <- cut(movies$No..of.Reviews, 5)
head(movies$ReviewBin)
```

| |
|---|
| [1] (465,572] (465,572] (359,465] (359,465] (359,465] (465,572] |
| Levels: (39.5,146] (146,252] (252,359] (359,465] (465,572] |

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```
animation <- subset(movies, movies$Genre == 'Animation')
animation
```

| Genre | R... | RatingTomatometer | Title |
|---------------|-------|-------------------|--------------------|
| <fctr> | <dbl> | <fctr> | <fctr> |
| 101 Animation | 1 | 97% | Toy Story 4 (2019) |

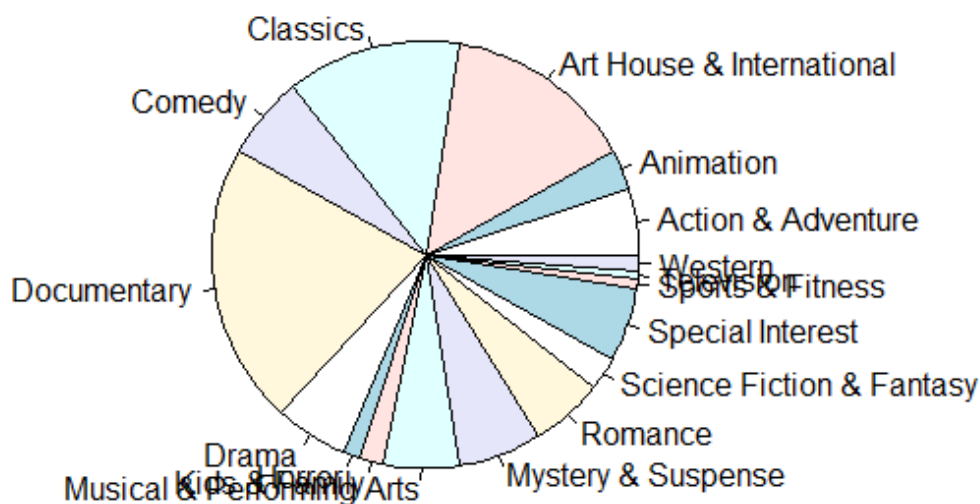
| Genre <fctr> | R... <dbl> | RatingTomatometer <fctr> | Title <fctr> |
|-----------------|---------------|-----------------------------|--|
| 102 Animation | 2 | 97% | Spider-Man: Into the Spider-Verse (2018) |
| 103 Animation | 3 | 98% | Inside Out (2015) |
| 104 Animation | 4 | 97% | Coco (2017) |
| 105 Animation | 5 | 98% | Snow White and the Seven Dwarfs (1937) |
| 106 Animation | 6 | 95% | Soul (2020) |
| 107 Animation | 7 | 93% | Incredibles 2 (2018) |
| 108 Animation | 8 | 98% | Zootopia (2016) |
| 109 Animation | 9 | 99% | Paddington 2 (2018) |
| 110 Animation | 10 | 98% | Up (2009) |

1-10 of 100 rows | 1-5 of 6 columns

Previous 1 2 3 4 5 6 ... 10 Next

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```
highRank <- subset(movies, movies$RatingTomatometer == '100%')
genreTable <- table(highRank$Genre)
pie(genreTable)
```



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```
hist(highRank$No..of.Reviews, col = 'blue', border = 'grey')
```

