



HACETTEPE ÜNİVERSİTESİ
İSTATİSTİK BÖLÜMÜ

İST155 İSTATİSTİĞE GİRİŞ I

UYGULAMA 7

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1.1- Normal servis verilerinin tanımlanması

```
normal<-  
c(152,105,134,139,143,112,135,118,208,164,114,169,165,145,226,154,107,288,223,149,155,  
,197,226,141,293,141,196,123,136,206,187,100,113,107,107,188,129,123,122,148)
```

1.2- Normal servise ait konum ölçülerinin hesaplanması

```
mean(normal)  
## [1] 157.2  
median(normal)  
## [1] 144  
mod_veri <- table(normal)  
names(mod_veri)[which(mod_veri==max(mod_veri))]  
## [1] "107"  
quantile(normal)  
##      0%      25%      50%      75%     100%  
## 100.00 122.75 144.00 187.25 293.00  
summary(normal)  
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.  
##      100.0   122.8   144.0   157.2   187.2   293.0
```

1.3- Normal servise ait değişim ölçülerinin hesaplanması

```
dg1<-max(normal)-min(normal)  
dg1  
## [1] 193  
range(normal)  
## [1] 100 293  
dg2<-range(normal)[2]-range(normal)[1]  
dg2  
## [1] 193
```

```

IQR_1<-quantile(normal)[4]-quantile(normal)[2]
IQR_1
## 75%
## 64.5
IQR(normal)
## [1] 64.5

var(normal)
## [1] 2248.523
sd(normal)
## [1] 47.41859

std_hata<-sd(normal)/sqrt(length(normal))
std_hata
## [1] 7.497538

install.packages("lsr", repos = "https://cloud.r-project.org")
## Installing package into 'C:/Users/Documents/R/win-library/3.5'
## (as 'lib' is unspecified)
## package 'lsr' successfully unpacked and MD5 sums checked
## The downloaded binary packages are in
## C:\Users\AppData\Local\Temp\RtmpSGWb4t\downloaded_packages
library(lsr)
## Warning: package 'lsr' was built under R version 3.5.2
aad(normal) # mutlak sapma
## [1] 36.76

degisim_katsayisi<-(sd(normal)/mean(normal))*100
degisim_katsayisi
## [1] 30.1645

install.packages("EnvStats", repos = "https://cloud.r-project.org")
## Installing package into 'C:/Users/Documents/R/win-library/3.5'
## (as 'lib' is unspecified)
## There is a binary version available but the source version is later:
## binary source needs_compilation
## EnvStats 2.3.1 2.4.0 FALSE

```

```
## installing the source package 'EnvStats'
library(EnvStats)
## Warning: package 'EnvStats' was built under R version 3.5.3
## Attaching package: 'EnvStats'
## The following object is masked from 'package:lsr':
##     longToWide
## The following objects are masked from 'package:stats':
##     predict, predict.lm
## The following object is masked from 'package:base':
##     print.default
dk_1<-cv(normal)*100 # değişim katsayısı
dk_1
## [1] 30.1645
```

2.1- Yoğun bakım servisi verilerinin tanımlanması

```
yogun<-
c(217,171,180,216,153,137,114,128,160,119,186,161,128,167,180,104,123,106,109,291,194,
,275,188,101,116,279,111,154,148,116,212,118,172,145,143,133,210,108,149,210)
```

2.2- Yoğun bakım servisine ait konum ölçülerinin hesaplanması

```
mean(yogun)
## [1] 160.8
median(yogun)
## [1] 151
which.max(table(yogun))
## 116
## 8
mod_veri <- table(yogun)
names(mod_veri)[which(mod_veri==max(mod_veri))]
## [1] "116" "128" "180" "210"
quantile(yogun)
##      0%      25%      50%      75%     100%
## 101.00 118.75 151.00 186.50 291.00
```

```
summary(yogun)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    101.0   118.8   151.0   160.8   186.5   291.0
```

2.3- Yoğun bakım servisine ait değişim ölçülerinin hesaplanması

```
dg1<-max(yogun)-min(yogun)
```

```
dg1
```

```
## [1] 190
```

```
range(yogun)
```

```
## [1] 101 291
```

```
dg2<-range(yogun)[2]-range(yogun)[1]
```

```
dg2
```

```
## [1] 190
```

```
IQR_2<-quantile(yogun)[4]-quantile(yogun)[2]
```

```
IQR_2
```

```
##      75%
```

```
## 67.75
```

```
IQR(yogun)
```

```
## [1] 67.75
```

```
var(yogun)
```

```
## [1] 2424.421
```

```
sd(yogun)
```

```
## [1] 49.2384
```

```
std_hata<-sd(yogun)/sqrt(length(yogun))
```

```
std_hata
```

```
## [1] 7.785275
```

```
library(lsr)
```

```
aad(yogun) # mutlak sapma
```

```
## [1] 38.77
```

```
degisim_katsayisi<-(sd(yogun)/mean(yogun))*100
```

```
degisim_katsayisi
```

```
## [1] 30.6209
```

```
library(EnvStats)
dk_2<-cv(yogun)*100 # değişim katsayısı
dk_2
## [1] 30.6209
```