

## BACS Homework1 106022113

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### 1. 5th element of original list

```
customers <- read.table(file = "customers.txt", header = TRUE)
ages <- customers$age
ages[5]
```

Results:

```
> 45
```

### 2. 5th lowest age

```
sorted_ages <- sort(ages)
sorted_ages[5]
```

Results:

```
> 19
```

### 3. Extract 5 lowest ages

```
sorted_ages[1:5]
```

Results:

```
> 18 19 19 19 19
```

### 4. 5 highest ages

```
sorted_ages2 <- sort(ages, decreasing = TRUE)
sorted_ages2[1:5]
```

Results:

```
> 85 83 82 81 80
```

### 5. Average

```
mean(ages)
```

Results:

```
> 46.80702
```

### 6. Standard Deviation

```
sd(ages)
```

Results:

> 16.3698

7. Difference between each age and mean age

```
age_diff <- ages-average
```

Results:

> 2.19 ,22.19 ,-5.81..... (399 numbers in total)

8. Average for “age\_diff”

```
mean(age_diff)
```

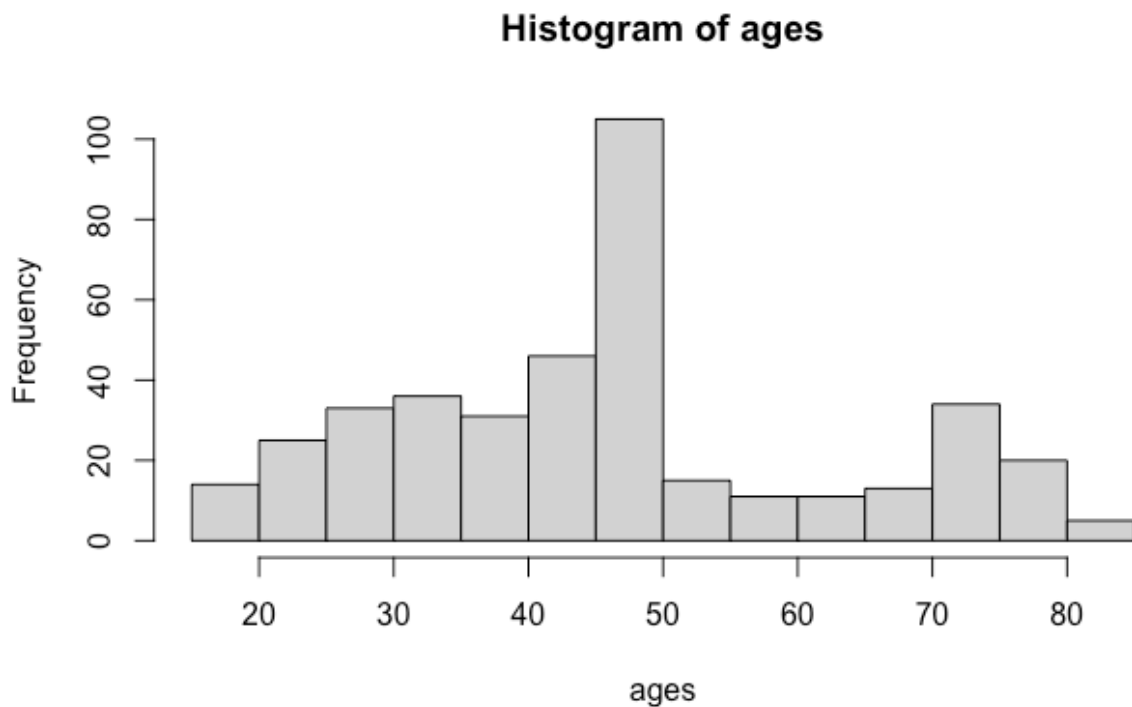
Results:

> -1.623275e-15

9. Visualization 1.hist 2. Density 3.boxplot+stripchart

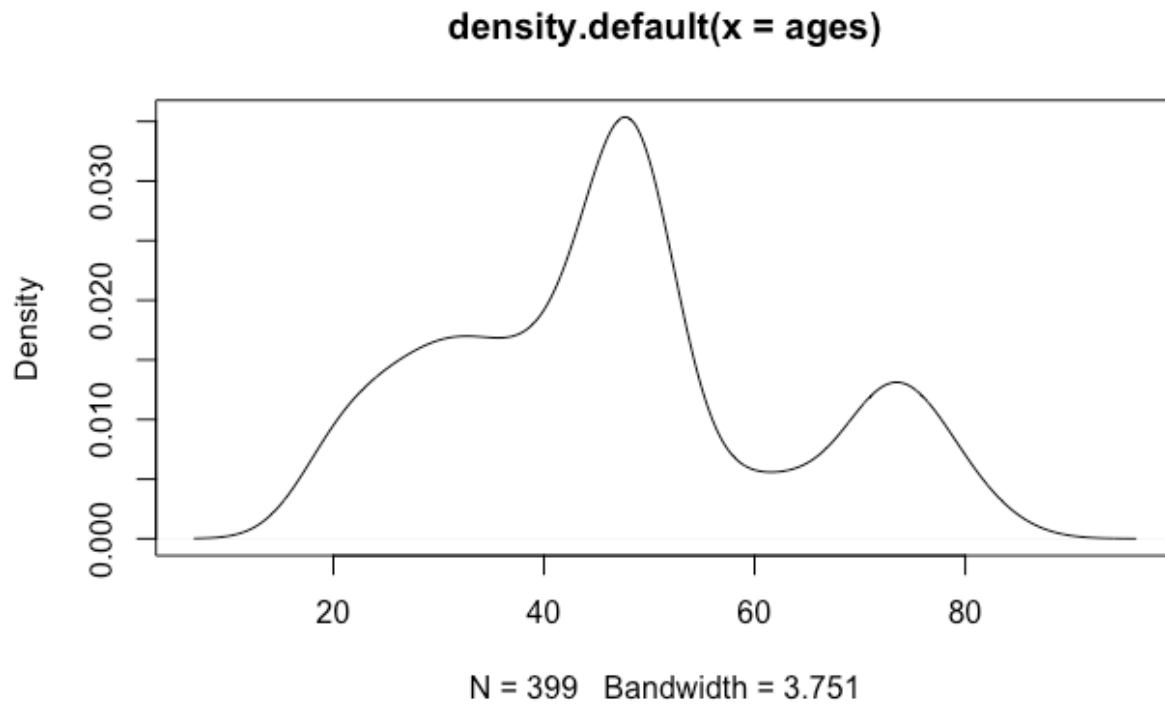
(1) histogram:

```
hist(ages)
```



(2) density plot

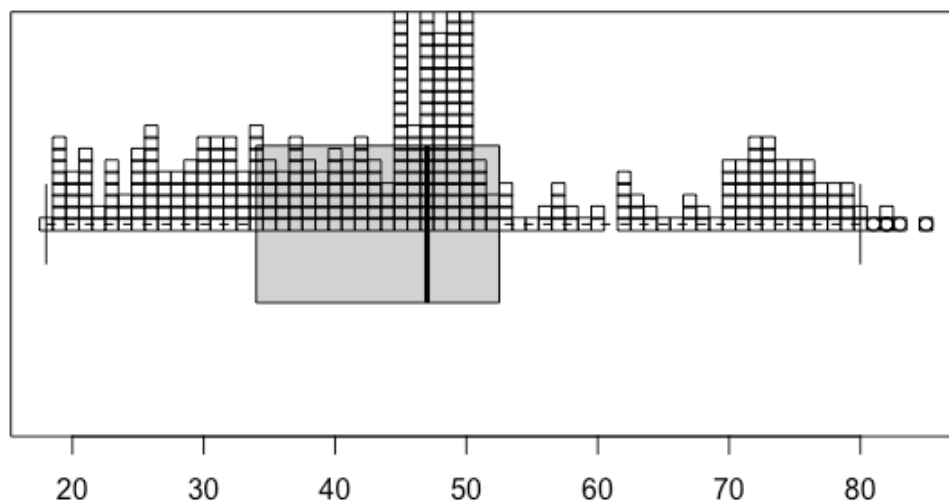
```
plot(density(ages))
```



(3). Boxplot with stripchart

```
boxplot(ages, horizontal = TRUE)
```

```
stripchart(ages, method = "stack", add = TRUE)
```



Monday, February 22, 2021