Course: DATA 606
Lab 2
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Exercise 1

What does a streak length of 1 mean, i.e. how many hits and misses are in a streak of 1? What about a streak length of 0?

The function “calc_streak to calculate the length of all shooting streaks, and the number of a streak length of 1 mean is 24, as follow:

```
> sum(calc_streak(kobe$basket)=="1")
[1] 24
```

```
> sum(calc_streak(kobe$basket)=="0")
[1] 39
```

Exercise 2

Describe the distribution of Kobe’s streak lengths from the 2009 NBA finals. What was his typical streak length? How long was his longest streak of baskets?

The distribution of Kobe’s streak is left moved.

```
> median(kobe_streak)
[1] 0
```

The typical length of streak b median is 0.

```
> IQR(kobe_streak)
[1] 1
```

The 3 and 4 of streak length is longest of baskets.

```
> boxplot(kobe_streak)
```

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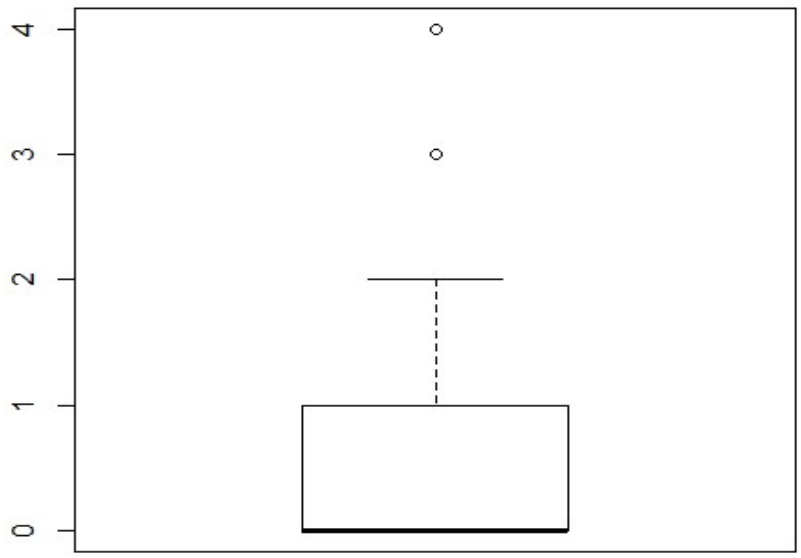

> summary(kobe_streak)

Min.	1st Qu.	Median	Mean	3rd Qu.	Max.
0.0	0.0000	0.0000	0.7632	1.0000	4.0000

Exercise 3

In your simulation of flipping the unfair coin 100 times, how many flips came up heads?

```
> outcomes <- c("heads", "tails")
> sim_fair_coin <- sample(outcomes, size = 100, replace = TRUE)
> sim_fair_coin
  [1] "heads" "heads" "tails" "heads" "tails" "tails" "heads" "tails
" "tails" "tails" "heads"
 [12] "tails" "tails" "tails" "heads" "heads" "tails" "heads" "tails
" "heads" "heads" "tails"
 [23] "tails" "heads" "heads" "heads" "tails" "heads" "heads" "tails
" "heads" "heads" "heads"
 [34] "tails" "heads" "heads" "heads" "heads" "tails" "heads" "tails
" "tails" "heads" "tails"
```

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```
 [45] "tails" "heads" "tails" "tails" "tails" "heads" "tails" "tails
" "tails" "heads" "tails"
 [56] "heads" "heads" "tails" "heads" "tails" "tails" "tails" "tails
" "heads" "heads" "tails"
 [67] "tails" "heads" "heads" "tails" "tails" "tails" "tails" "tails
" "tails" "tails" "heads"
 [78] "heads" "heads" "heads" "tails" "heads" "tails" "heads" "tails
" "tails" "tails" "heads"
 [89] "heads" "tails" "heads" "heads" "tails" "heads" "heads" "tails
" "heads" "tails" "heads"
[100] "heads"
> table(sim_fair_coin)
sim_fair_coin
heads tails
   49    51
```

49 ime flipped into head.

Exercise 4

What change needs to be made to the `sample` function so that it reflects a shooting percentage of 45%? Make this adjustment, then run a simulation to sample 133 shots. Assign the output of this simulation to a new object called `sim_basket`.

```
> outcomes <- c("H", "M")
> sim_basket<- sample(outcomes, size = 133, replace = TRUE, prob = c
(0.2, 0.8))
> sim_basket
  [1] "H" "M" "M" "H" "M" "M" "M" "M" "M" "M" "M" "M" "M" "M" "M" "M" "M
" "M" "M" "M" "M" "M" "H"
 [23] "M" "M" "M" "M" "M" "M" "H" "H" "M" "H" "M" "H" "H" "M" "M" "M
" "M" "M" "M" "M" "M" "M"
 [45] "M" "M" "M" "H" "M" "M" "M" "M" "M" "M" "M" "M" "M" "M" "M" "H
" "M" "M" "M" "M" "M" "M"
 [67] "M" "M" "M" "M" "M" "H" "M" "M" "M" "M" "H" "M" "M" "M" "M" "M
" "M" "M" "M" "M" "M" "M"
```

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```
 [89] "H" "M" "M" "H" "M" "H" "M" "H" "M" "M" "M" "H" "M" "H" "H" "M
" "M" "M" "M" "H" "H" "M"
[111] "M" "H" "M" "H" "H" "M" "M" "H" "M" "M" "M" "M" "H" "H" "M" "M
" "H" "M" "M" "M" "H" "M"
[133] "H"
```