

Week 2 Module 6: Pie Charts EXERCISES

CSCI E-5a: Programming in R

Exercises for Week 2 Module 6: Pie Charts

Exercise 5.1: Babe Ruth At-Bats

Recall that an at-bat is either an out or a hit, and there are four different kinds of hits.

Thus, there are five possible outcomes for an at-bat:

- An out
- A single
- A double
- A triple

Let's make a simple pie chart to display the relative proportions of these outcomes for Babe Ruth.

Recall that Babe Ruth had these batting statistics:

Statistics	Value
Plate appearances	10,626
At-bats	8,399
Hits	2,873
Doubles	506
Triples	136
Home runs	714
Bases on balls	2,062
Hit by a pitch	43
Sacrifice flies	0

Remember these two derived statistics:

- To calculate the number of hits, subtract the number of hits from the number of at-bats
- To calculate the number of singles, subtract the number of doubles, triples, and home runs from the number of hits.

Here are some variables for you:

```

babe.ruth.plate.appearances <- 10626

babe.ruth.at.bats <- 8399

babe.ruth.hits <- 2873
babe.ruth.doubles <- 506
babe.ruth.triples <- 136
babe.ruth.home.runs <- 714

```

Solution

Exercise 5.2: Modifying the Babe Ruth pie chart

Now add labels and a main title to the Babe Ruth pie chart, and set the rotation to clockwise.

Solution

Exercise 5.3: Colors for the Babe Ruth pie chart

Now explicitly specify the pie slice colors for the Babe Ruth pie chart.

Solution

Solutions to the Exercises

Exercise 5.1: Babe Ruth At-Bats

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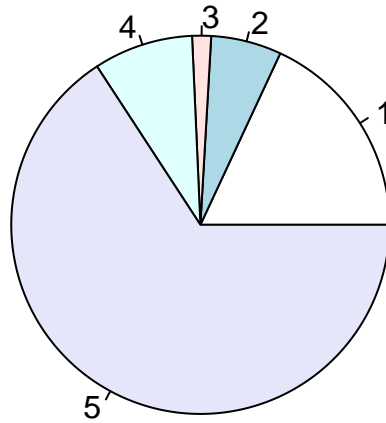
babe.ruth.hits <- 2873
babe.ruth.doubles <- 506
babe.ruth.triples <- 136
babe.ruth.home.runs <- 714
```

Solution

```
babe.ruth.outs <-
  babe.ruth.at.bats - babe.ruth.hits

babe.ruth.singles <-
  babe.ruth.hits -
  (babe.ruth.doubles +
   babe.ruth.triples +
   babe.ruth.home.runs)

pie(
  x =
    c(
      babe.ruth.singles,
      babe.ruth.doubles,
      babe.ruth.triples,
      babe.ruth.home.runs,
      babe.ruth.outs
    )
)
```



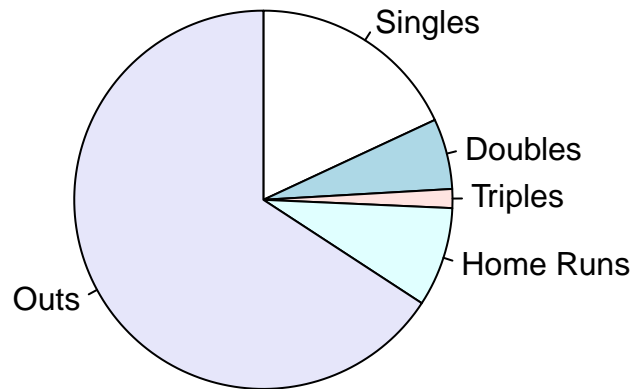
Exercise 5.2: Modifying the Babe Ruth pie chart

Now add labels and a main title to the Babe Ruth pie chart, and set the rotation to clockwise.

Solution

```
pie(  
  x =  
    c(  
      babe.ruth.singles,  
      babe.ruth.doubles,  
      babe.ruth.triples,  
      babe.ruth.home.runs,  
      babe.ruth.outs  
    ),  
  
  labels =  
    c( "Singles", "Doubles", "Triples",  
       "Home Runs", "Outs"),  
  
  main = "Babe Ruth Career At-Bats",  
  
  clockwise = TRUE  
)
```

Babe Ruth Career At-Bats



Exercise 5.3: Colors for the Babe Ruth pie chart

Now explicitly specify the pie slice colors for the Babe Ruth pie chart.

Solution

```
pie(  
  x =  
    c(  
      babe.ruth.singles,  
      babe.ruth.doubles,  
      babe.ruth.triples,  
      babe.ruth.home.runs,  
      babe.ruth.outs  
    ),  
  
  labels =  
    c( "Singles", "Doubles", "Triples",  
       "Home Runs", "Outs"),  
  
  main = "Babe Ruth Career At-Bats",  
  
  clockwise = TRUE,  
  
  col =
```

```
c( "cyan1", "cadetblue2", "darkslategray3",  
  "royalblue", "salmon1" )  
)
```

Babe Ruth Career At-Bats

