Lab 5

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```r
## part 1:

hot <- read.csv("C:/Users/Nick/Downloads/Hot_100.csv")

get_unique_songs <- function( dat ){
  return( unique( dat$song_id ) )
}

weeks_on_chart <- function( dat ){
  unique_songs <- get_unique_songs( dat )
  weeks_on_chart <- rep( NA, length(unique_songs) )
  for(j in 1:length( unique_songs ) ){
    ii <- which( dat$song_id == unique_songs[j] )
    weeks_on_chart[j] <- max( dat$time_on_chart[ii] )
  }
  ord <- order( weeks_on_chart, decreasing = TRUE )
  return( data.frame( song = unique_songs[ord], weeks_on_chart = weeks_on_chart[ord] ) )
}

weeks_in_top10 <- function( dat ){
  unique_songs <- get_unique_songs( dat )
  weeks_in_top10 <- rep( NA, length( unique_songs ) )
  for(j in 1:length( unique_songs ) ){
    ii <- which( dat$song_id == unique_songs[j] )
    weeks_in_top10[j] <- sum( dat$chart_position[ii] <= 10 )
  }
  ord <- order( weeks_in_top10, decreasing = TRUE )
  return( data.frame( song = unique_songs[ord], weeks_in_top10 = weeks_in_top10[ord] ) )
}

weeks_at_num1 <- function( dat ){
  unique_songs <- get_unique_songs( dat )
  weeks_at_num1 <- rep( NA, length( unique_songs ) )
  for(j in 1:length( unique_songs ) ){
    ii <- which( dat$song_id == unique_songs[j] )
    weeks_at_num1[j] <- sum( dat$chart_position[ii] <= 1 )
  }
  ord <- order( weeks_at_num1, decreasing = TRUE )
  return( data.frame( song = unique_songs[ord], weeks_at_num1 = weeks_at_num1[ord] ) )
}

rank_songs <- function( dat, stat = "weeks on chart" ){
```

```r
  if( stat == "weeks on chart"  ){
    rank_db <- weeks_on_chart( dat )
  }
  else if( stat == "weeks in top 10" ){
    rank_db <- weeks_in_top10( dat )
  }
  else if( stat == "weeks at num 1"  ){
    rank_db <- weeks_at_num1( dat  )
  }
  else { stop("unrecognize statistic") }
  return( rank_db )
}


r <- rank_songs( hot, "weeks on chart" )
head(r)
```

```
##                        song weeks_on_chart
## 1    Heat WavesGlass Animals             91
## 2  Blinding LightsThe Weeknd             90
## 3 RadioactiveImagine Dragons             87
## 4            SailAWOLNATION             79
## 5        I'm YoursJason Mraz             76
## 6   How Do I LiveLeAnn Rimes             69
```