R Notebook

In order to install this package you must have devtools installed. To do so type this into your console: install.packages("devtools") Once devtools is installed you will need to pull this package from github by typing this into your console: devtools::install_github("PatrickChodowski/NBAr") once this is installed all you have to do is include NBAr in your library like I have done below by running: library(NBAr) These functions also require you to have the tidyverse library installed as well

```
library(NBAr)
library(tidyverse)
```

```
## Warning: package 'tidyverse' was built under R version 3.6.3
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.0 --
```

```
## v ggplot2 3.3.3     v purrr   0.3.4
## v tibble  3.1.0     v dplyr   1.0.4
## v tidyr   1.1.2     v stringr 1.4.0
## v readr   1.4.0     v forcats 0.5.1
```

```
## Warning: package 'ggplot2' was built under R version 3.6.3
```

```
## Warning: package 'tibble' was built under R version 3.6.3
```

```
## Warning: package 'tidyr' was built under R version 3.6.3
```

```
## Warning: package 'readr' was built under R version 3.6.3
```

```
## Warning: package 'purrr' was built under R version 3.6.3
```

```
## Warning: package 'dplyr' was built under R version 3.6.3
```

```
## Warning: package 'forcats' was built under R version 3.6.3
```

```
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

#Example data

```
season <- 2018
gamelist <- c(21800001:21800003)
game_id <- 21800001

#get_boxscores
traditional <- map(gamelist, ~get_boxscore(.,boxscore_type = 'traditional')) %>% compact() %>% bind_rows
```

```
## https://stats.nba.com/stats/boxscoretraditionalv2?EndPeriod=10&EndRange=28800&GameID=0021800001&Rang

## Warning in .parse_hms(..., order = "MS", quiet = quiet): Some strings failed to
## parse, or all strings are NAs

## Warning in .parse_hms(..., order = "MS", quiet = quiet): Some strings failed to
## parse, or all strings are NAs

## Rows: 26
## Columns: 29
## $ game_id           <int> 21800001, 21800001, 21800001, 21800001, 21800001, 21~
## $ team_id           <int> 1610612755, 1610612755, 1610612755, 1610612755, 1610~
## $ team_abbreviation <chr> "PHI", "PHI", "PHI", "PHI", "PHI", "PHI", "PHI", "PH~
## $ team_city         <chr> "Philadelphia", "Philadelphia", "Philadelphia", "Phi~
## $ player_id         <int> 203967, 203496, 203954, 1628365, 1627732, 101161, 20~
## $ player_name       <chr> "Dario Saric", "Robert Covington", "Joel Embiid", "M~
## $ start_position    <chr> "F", "F", "C", "G", "G", "", "", "", "", "", "", "",~
## $ comment           <chr> "", "", "", "", "", "", "", "", "", "", "", "DNP - C~
## $ fgm               <int> 3, 3, 9, 2, 7, 1, 7, 2, 0, 0, 0, NA, NA, 9, 4, 4, 5,~
## $ fga               <int> 8, 10, 21, 7, 14, 1, 17, 5, 4, 0, 0, NA, NA, 17, 12,~
## $ fg_pct            <dbl> 0.375, 0.300, 0.429, 0.286, 0.500, 1.000, 0.412, 0.4~
## $ fg3m              <int> 0, 2, 1, 0, 0, 0, 2, 0, 0, 0, 0, NA, NA, 1, 1, 0, 1,~
## $ fg3a              <int> 4, 7, 4, 0, 0, 0, 8, 1, 2, 0, 0, NA, NA, 5, 3, 1, 3,~
## $ fg3_pct           <dbl> 0.000, 0.286, 0.250, 0.000, 0.000, 0.000, 0.250, 0.0~
## $ ftm               <int> 0, 0, 4, 1, 5, 3, 0, 0, 1, 0, 0, NA, NA, 4, 1, 1, 1,~
## $ fta               <int> 0, 0, 5, 2, 10, 4, 0, 0, 2, 0, 0, NA, NA, 5, 2, 1, 2~
## $ ft_pct            <dbl> 0.00, 0.00, 0.80, 0.50, 0.50, 0.75, 0.00, 0.00, 0.50~
## $ oreb              <int> 0, 1, 2, 0, 3, 0, 0, 0, 0, 0, 0, NA, NA, 2, 2, 0, 3,~
## $ dreb              <int> 6, 5, 8, 3, 12, 3, 2, 1, 1, 0, 0, NA, NA, 7, 3, 4, 2~
## $ reb               <int> 6, 6, 10, 3, 15, 3, 2, 1, 1, 0, 0, NA, NA, 9, 5, 4, ~
## $ ast               <int> 1, 0, 2, 2, 8, 1, 1, 3, 0, 0, 0, NA, NA, 3, 0, 2, 2,~
## $ stl               <int> 0, 2, 1, 1, 4, 0, 0, 0, 0, 0, 0, NA, NA, 1, 4, 0, 0,~
## $ blk               <int> 0, 1, 2, 0, 2, 0, 0, 0, 0, 0, 0, NA, NA, 0, 0, 4, 0,~
## $ to                <int> 3, 2, 5, 3, 3, 0, 0, 0, 0, 0, 0, NA, NA, 1, 0, 3, 2,~
## $ pf                <int> 5, 1, 3, 1, 5, 1, 1, 3, 0, 0, 0, NA, NA, 2, 1, 1, 4,~
## $ pts               <int> 6, 8, 23, 5, 19, 5, 16, 4, 1, 0, 0, NA, NA, 23, 10, ~
## $ plus_minus        <int> -4, -11, -8, -16, -8, -10, -10, -11, -8, -2, -2, NA,~
## $ mins              <int> 22, 34, 36, 24, 42, 11, 29, 22, 12, 1, 1, NA, NA, 28~
## $ secs              <int> 54, 13, 49, 20, 44, 11, 46, 26, 43, 27, 27, NA, NA, ~
## https://stats.nba.com/stats/boxscoretraditionalv2?EndPeriod=10&EndRange=28800&GameID=0021800002&Rang

## Warning in .parse_hms(..., order = "MS", quiet = quiet): Some strings failed to
## parse, or all strings are NAs

## Warning in .parse_hms(..., order = "MS", quiet = quiet): Some strings failed to
## parse, or all strings are NAs

## Rows: 26
## Columns: 29
## $ game_id           <int> 21800002, 21800002, 21800002, 21800002, 21800002, 21~
## $ team_id           <int> 1610612760, 1610612760, 1610612760, 1610612760, 1610~
## $ team_abbreviation <chr> "OKC", "OKC", "OKC", "OKC", "OKC", "OKC", "OKC", "OK~
## $ team_city         <chr> "Oklahoma City", "Oklahoma City", "Oklahoma City", "~
```

```
## $ player_id         <int> 202331, 202335, 203500, 1628390, 203471, 203924, 203~
## $ player_name       <chr> "Paul George", "Patrick Patterson", "Steven Adams", ~
## $ start_position    <chr> "F", "F", "C", "G", "G", "", "", "", "", "", "", "",~
## $ comment           <chr> "", "", "", "", "", "", "", "", "", "", "DNP - Coach~
## $ fgm               <int> 9, 2, 6, 0, 7, 2, 3, 1, 1, 2, NA, NA, NA, 9, 1, 6, 5~
## $ fga               <int> 23, 9, 12, 2, 19, 7, 8, 5, 2, 4, NA, NA, NA, 21, 6, ~
## $ fg_pct            <dbl> 0.391, 0.222, 0.500, 0.000, 0.368, 0.286, 0.375, 0.2~
## $ fg3m              <int> 4, 1, 0, 0, 2, 1, 2, 0, 0, 0, NA, NA, NA, 0, 0, 0, 1~
## $ fg3a              <int> 12, 4, 0, 2, 6, 4, 6, 3, 0, 0, NA, NA, NA, 5, 1, 0, ~
## $ fg3_pct           <dbl> 0.333, 0.250, 0.000, 0.000, 0.333, 0.250, 0.333, 0.0~
## $ ftm               <int> 5, 2, 5, 0, 5, 2, 0, 4, 1, 0, NA, NA, NA, 9, 0, 0, 3~
## $ fta               <int> 8, 3, 8, 0, 6, 4, 0, 5, 2, 1, NA, NA, NA, 10, 0, 0, ~
## $ ft_pct            <dbl> 0.625, 0.667, 0.625, 0.000, 0.833, 0.500, 0.000, 0.8~
## $ oreb              <int> 0, 3, 4, 2, 2, 2, 0, 0, 3, 0, NA, NA, NA, 1, 1, 2, 1~
## $ dreb              <int> 2, 2, 7, 2, 6, 0, 2, 3, 4, 1, NA, NA, NA, 7, 12, 1, ~
## $ reb               <int> 2, 5, 11, 4, 8, 2, 2, 3, 7, 1, NA, NA, NA, 8, 13, 3,~
## $ ast               <int> 5, 0, 4, 1, 6, 2, 0, 1, 1, 1, NA, NA, NA, 6, 5, 2, 0~
## $ stl               <int> 4, 1, 2, 0, 3, 0, 0, 0, 1, 1, NA, NA, NA, 1, 3, 0, 0~
## $ blk               <int> 0, 1, 0, 0, 1, 3, 0, 0, 1, 0, NA, NA, NA, 1, 0, 3, 0~
## $ to                <int> 5, 1, 2, 1, 3, 0, 0, 2, 0, 0, NA, NA, NA, 3, 6, 2, 2~
## $ pf                <int> 3, 0, 3, 3, 4, 1, 2, 0, 3, 2, NA, NA, NA, 4, 3, 4, 3~
## $ pts               <int> 27, 7, 17, 0, 21, 7, 8, 6, 3, 4, NA, NA, NA, 27, 2, ~
## $ plus_minus        <int> -16, 3, -6, 0, -7, -11, -5, -1, -2, 5, NA, NA, NA, 1~
## $ mins              <int> 37, 18, 35, 26, 34, 29, 23, 13, 12, 8, NA, NA, NA, 3~
## $ secs              <int> 24, 54, 36, 30, 5, 6, 29, 55, 24, 37, NA, NA, NA, 43~
## https://stats.nba.com/stats/boxscoretraditionalv2?EndPeriod=10&EndRange=28800&GameID=0021800003&Rang

## Warning in .parse_hms(..., order = "MS", quiet = quiet): Some strings failed to
## parse, or all strings are NAs

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## parse, or all strings are NAs

## Rows: 26
## Columns: 29
## $ game_id           <int> 21800003, 21800003, 21800003, 21800003, 21800003, 21~
## $ team_id           <int> 1610612749, 1610612749, 1610612749, 1610612749, 1610~
## $ team_abbreviation <chr> "MIL", "MIL", "MIL", "MIL", "MIL", "MIL", "MIL", "MI~
## $ team_city         <chr> "Milwaukee", "Milwaukee", "Milwaukee", "Milwaukee", ~
## $ player_id         <int> 203114, 203507, 201572, 1627763, 202339, 1628978, 10~
## $ player_name       <chr> "Khris Middleton", "Giannis Antetokounmpo", "Brook L~
## $ start_position    <chr> "F", "F", "C", "G", "G", "", "", "", "", "", "", "",~
## $ comment           <chr> "", "", "", "", "", "", "", "", "", "", "", "DNP - C~
## $ fgm               <int> 7, 9, 4, 4, 7, 3, 6, 1, 0, 1, 0, NA, NA, 2, 2, 1, 4,~
## $ fga               <int> 14, 21, 7, 9, 13, 6, 9, 3, 2, 1, 0, NA, NA, 8, 7, 1,~
## $ fg_pct            <dbl> 0.500, 0.429, 0.571, 0.444, 0.538, 0.500, 0.667, 0.3~
## $ fg3m              <int> 3, 0, 2, 2, 3, 2, 1, 0, 0, 1, 0, NA, NA, 1, 1, 1, 2,~
## $ fg3a              <int> 6, 3, 5, 6, 5, 4, 3, 0, 1, 1, 0, NA, NA, 4, 6, 1, 4,~
## $ fg3_pct           <dbl> 0.500, 0.000, 0.400, 0.333, 0.600, 0.500, 0.333, 0.0~
## $ ftm               <int> 2, 7, 4, 0, 0, 0, 0, 2, 0, 0, 0, NA, NA, 0, 0, 2, 0,~
## $ fta               <int> 2, 12, 4, 0, 0, 0, 0, 2, 0, 0, 0, NA, NA, 0, 2, 2, 0~
## $ ft_pct            <dbl> 1.000, 0.583, 1.000, 0.000, 0.000, 0.000, 0.000, 1.0~
## $ oreb              <int> 1, 3, 0, 0, 2, 1, 1, 2, 1, 0, 0, NA, NA, 1, 1, 0, 2,~
## $ dreb              <int> 8, 15, 3, 3, 2, 1, 8, 4, 1, 1, 0, NA, NA, 6, 8, 3, 0~
```

```
## $ reb               <int> 9, 18, 3, 3, 4, 2, 9, 6, 2, 1, 0, NA, NA, 7, 9, 3, 2~
## $ ast               <int> 4, 8, 1, 6, 3, 1, 2, 0, 1, 0, 0, NA, NA, 3, 1, 1, 1,~
## $ stl               <int> 2, 0, 1, 1, 0, 1, 0, 0, 0, 0, 0, NA, NA, 2, 0, 1, 1,~
## $ blk               <int> 1, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0, NA, NA, 2, 4, 0, 0,~
## $ to                <int> 2, 8, 2, 4, 2, 1, 0, 2, 0, 0, 0, NA, NA, 2, 1, 0, 0,~
## $ pf                <int> 3, 5, 3, 3, 4, 0, 6, 1, 0, 0, 0, NA, NA, 1, 2, 3, 2,~
## $ pts               <int> 19, 25, 14, 10, 17, 8, 13, 4, 0, 3, 0, NA, NA, 5, 5,~
## $ plus_minus        <int> 2, 11, 8, 1, 4, -9, -10, 2, 1, -3, -2, NA, NA, -4, -~
## $ mins              <int> 32, 34, 21, 38, 33, 22, 28, 12, 11, 4, 0, NA, NA, 31~
## $ secs              <int> 46, 46, 27, 0, 32, 5, 59, 1, 20, 57, 7, NA, NA, 49, ~
```

```
# Crates a table of boxscores from the given list of NBA game IDs. In the example this is a three game
```

```
#get_team_boxscore
team_boxscores <- get_team_boxscore(season = 2018, measure_type = 'Advanced')
```

```
## https://stats.nba.com/stats/teamgamelogs?DateFrom=&DateTo=&GameSegment=&LastNGames=&LeagueID=00&Loca
## Rows: 2,460
## Columns: 48
## $ season_year       <chr> "2018-19", "2018-19", "2018-19", "2018-19", "2018-19~
## $ team_id           <int> 1610612762, 1610612760, 1610612752, 1610612766, 1610~
## $ team_abbreviation <chr> "UTA", "OKC", "NYK", "CHA", "DEN", "ATL", "MIN", "MI~
## $ team_name         <chr> "Utah Jazz", "Oklahoma City Thunder", "New York Knic~
## $ game_id           <int> 21801229, 21801226, 21801223, 21801222, 21801228, 21~
## $ game_date         <chr> "2019-04-10T00:00:00", "2019-04-10T00:00:00", "2019-~
## $ matchup           <chr> "UTA @ LAC", "OKC @ MIL", "NYK vs. DET", "CHA vs. OR~
## $ wl                <chr> "L", "W", "L", "L", "W", "L", "L", "L", "L", "L", "W~
## $ min               <int> 53, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48, ~
## $ e_off_rating      <int> 113, 116, 93, 121, 103, 116, 98, 84, 129, 102, 129, ~
## $ off_rating        <int> 115, 114, 93, 122, 103, 122, 99, 87, 131, 105, 130, ~
## $ e_def_rating      <int> 120, 102, 118, 130, 98, 122, 103, 103, 136, 116, 113~
## $ def_rating        <int> 119, 105, 118, 131, 99, 125, 103, 104, 137, 114, 115~
## $ e_net_rating      <int> -6, 14, -25, -8, 5, -5, -5, -19, -6, -14, 16, 5, -16~
## $ net_rating        <int> -4, 9, -24, -8, 4, -2, -4, -17, -6, -9, 14, 2, -14, ~
## $ ast_pct           <dbl> 0.660, 0.833, 0.742, 0.512, 0.590, 0.674, 0.615, 0.5~
## $ ast_to            <int> 1, 3, 2, 2, 1, 1, 2, 1, 2, 1, 2, 2, 2, 2, 2, 2, 4, 1~
## $ ast_ratio         <int> 18, 25, 18, 17, 17, 17, 18, 15, 17, 17, 17, 15, 22, ~
## $ oreb_pct          <dbl> 0.339, 0.167, 0.078, 0.184, 0.255, 0.469, 0.167, 0.1~
## $ dreb_pct          <dbl> 0.750, 0.750, 0.689, 0.714, 0.833, 0.714, 0.745, 0.6~
## $ reb_pct           <dbl> 0.534, 0.474, 0.365, 0.463, 0.552, 0.583, 0.448, 0.4~
## $ tm_tov_pct        <dbl> 0.143, 0.117, 0.116, 0.086, 0.135, 0.156, 0.104, 0.1~
## $ efg_pct           <dbl> 0.509, 0.601, 0.461, 0.577, 0.506, 0.500, 0.500, 0.4~
## $ ts_pct            <dbl> 0.568, 0.606, 0.506, 0.634, 0.524, 0.560, 0.507, 0.4~
## $ e_pace            <int> 108, 111, 95, 93, 96, 112, 96, 110, 100, 111, 102, 1~
## $ pace              <int> 108, 110, 96, 93, 96, 108, 96, 108, 99, 110, 101, 10~
## $ pace_per40        <dbl> 90.19, 92.08, 80.00, 77.50, 80.00, 90.42, 80.00, 90.~
## $ poss              <int> 119, 111, 95, 93, 96, 109, 96, 108, 100, 110, 101, 1~
## $ pie               <dbl> 0.484, 0.560, 0.384, 0.481, 0.562, 0.497, 0.438, 0.4~
## $ gp_rank           <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ w_rank            <int> 1231, 1, 1231, 1231, 1, 1231, 1231, 1231, 1231, 1231~
## $ l_rank            <int> 1231, 1, 1231, 1231, 1, 1231, 1231, 1231, 1231, 1231~
## $ w_pct_rank        <dbl> 1231, 1, 1231, 1231, 1, 1231, 1231, 1231, 1231, 1231~
## $ min_rank          <int> 21, 135, 135, 135, 135, 135, 135, 135, 135, 135, 135~
```

```
## $ off_rating_rank   <int> 767, 825, 2263, 309, 1768, 298, 2072, 2413, 68, 1599~
## $ def_rating_rank   <int> 1969, 859, 1930, 2395, 388, 2239, 690, 781, 2447, 16~
## $ net_rating_rank   <int> 1469, 634, 2342, 1807, 980, 1336, 1480, 2202, 1655, ~
## $ ast_pct_rank      <dbl> 631, 6, 150, 2007, 1307, 518, 1061, 1431, 2052, 942,~
## $ ast_to_rank       <int> 1111, 203, 772, 357, 1188, 1279, 486, 1695, 412, 114~
## $ ast_ratio_rank    <int> 1043, 19, 816, 1203, 1277, 1268, 884, 1778, 1138, 11~
## $ oreb_pct_rank     <dbl> 397, 2295, 2458, 2194, 1402, 9, 2295, 2162, 372, 144~
## $ dreb_pct_rank     <dbl> 952, 952, 1795, 1456, 148, 1456, 1042, 1732, 2348, 1~
## $ reb_pct_rank      <dbl> 593, 1743, 2454, 1933, 341, 109, 2119, 2023, 1877, 7~
## $ tm_tov_pct_rank   <dbl> 1365, 695, 659, 177, 1182, 1688, 427, 1292, 348, 121~
## $ efg_pct_rank      <dbl> 1456, 293, 2101, 493, 1488, 1541, 1541, 2321, 209, 1~
## $ ts_pct_rank       <dbl> 1080, 537, 2041, 268, 1806, 1233, 2024, 2393, 257, 1~
## $ pace_rank         <int> 161, 69, 2019, 2311, 2019, 139, 2019, 165, 1415, 69,~
## $ pie_rank          <dbl> 1375, 604, 2246, 1404, 590, 1253, 1871, 1918, 1414, ~
```

```
# This only returns teams boxscores over the course of the season. That makes it a large table to sift

#get_matchups
matchup <- get_matchups(game_id)
```

```
## http://stats.nba.com/stats/boxscorematchups?GameID=0021800001
## Rows: 196
## Columns: 38
## $ game_id                 <int> 21800001, 21800001, 21800001, 21800001, 218000~
## $ off_team_id             <int> 1610612755, 1610612755, 1610612755, 1610612755~
## $ off_team_abbreviation   <chr> "PHI", "PHI", "PHI", "PHI", "PHI", "PHI", "PHI~
## $ off_team_city           <chr> "Philadelphia", "Philadelphia", "Philadelphia"~
## $ off_team_nickname       <chr> "76ers", "76ers", "76ers", "76ers", "76ers", "~
## $ off_player_id           <int> 203967, 203967, 203967, 203967, 203967, 203967~
## $ off_player_name         <chr> "Dario Saric", "Dario Saric", "Dario Saric", "~
## $ def_team_id             <int> 1610612738, 1610612738, 1610612738, 1610612738~
## $ def_team_abbreviation   <chr> "BOS", "BOS", "BOS", "BOS", "BOS", "BOS", "BOS~
## $ def_team_city           <chr> "Boston", "Boston", "Boston", "Boston", "Bosto~
## $ def_team_nickname       <chr> "Celtics", "Celtics", "Celtics", "Celtics", "C~
## $ def_player_id           <int> 203382, 1627759, 202330, 201143, 202681, 20269~
## $ def_player_name         <chr> "Aron Baynes", "Jaylen Brown", "Gordon Hayward~
## $ matchup_min             <chr> "0:07", "1:09", "0:44", "0:19", "0:13", "0:59"~
## $ partial_poss            <int> 0, 5, 3, 1, 1, 4, 0, 1, 11, 0, 1, 7, 2, 1, 17,~
## $ pct_defender_total_time <dbl> 0.017, 0.127, 0.088, 0.034, 0.024, 0.157, 0.00~
## $ pct_off_total_time      <dbl> 0.016, 0.167, 0.107, 0.047, 0.031, 0.144, 0.00~
## $ pct_total_time_both_on  <dbl> 0.040, 0.302, 0.154, 0.068, 0.053, 0.453, 0.02~
## $ switches_on             <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ player_pts              <int> 0, 2, 0, 2, 0, 2, 0, 0, 0, 0, 0, 0, 0, 0, 3, 0~
## $ team_pts                <int> 2, 10, 1, 4, 0, 11, 0, 0, 6, 2, 0, 8, 2, 2, 24~
## $ matchup_ast             <int> 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ matchup_potential_ast   <int> 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ matchup_tov             <int> 0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0~
## $ matchup_blk             <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ matchup_fgm             <int> 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0~
## $ matchup_fga             <int> 0, 3, 1, 1, 0, 1, 0, 0, 2, 0, 0, 1, 2, 1, 2, 0~
## $ matchup_fg_pct          <dbl> 0.000, 0.333, 0.000, 1.000, 0.000, 1.000, 0.00~
## $ matchup_fg3m            <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0~
## $ matchup_fg3a            <int> 0, 2, 0, 0, 0, 0, 0, 0, 2, 0, 0, 1, 1, 1, 1, 0~
## $ matchup_fg3_pct         <dbl> 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0~
```

```
## $ help_blk                <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ help_fgm                <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ help_fga                <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ help_fg_perc            <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ matchup_ftm             <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ matchup_fta             <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
## $ sfl                     <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
```

```
# Gives in detail data on the matchups that take place in one game. Could be really helpful for indepth


#get_playbyplay2
pbp2 <- map(gamelist, ~get_playbyplay2(.)) %>% compact() %>% bind_rows()
```

```
## https://data.nba.com/data/10s/v2015/json/mobile_teams/nba/2018/scores/pbp/0021800001_full_pbp.json
## Rows: 507
## Columns: 25
## $ season_id           <dbl> 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2018, 20~
## $ game_id             <dbl> 21800001, 21800001, 21800001, 21800001, 21800001, ~
## $ game_date_id        <dbl> 20181016, 20181016, 20181016, 20181016, 20181016, ~
## $ visit_team          <chr> "PHI", "PHI", "PHI", "PHI", "PHI", "PHI", "PHI", "~
## $ home_team           <chr> "BOS", "BOS", "BOS", "BOS", "BOS", "BOS", "BOS", "~
## $ period              <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,~
## $ event_id            <int> 2, 4, 7, 8, 9, 10, 11, 12, 14, 16, 17, 19, 20, 21,~
## $ clock               <chr> "12:00", "12:00", "11:40", "11:40", "11:18", "11:1~
## $ description         <chr> "Start Period", "Jump Ball Embiid vs Horford (Simm~
## $ loc_x               <int> 0, 0, -53, -53, 0, -148, -148, 95, 4, 4, -8, -46, ~
## $ loc_y               <int> -80, -80, 265, 265, -80, 208, 208, 257, 19, 19, 3,~
## $ opt1                <int> 0, 0, 3, 0, 0, 3, 0, 1, 2, 0, 2, 2, 0, 3, 0, 2, 0,~
## $ opt2                <int> 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0,~
## $ message_type        <int> 0, 0, 1, 0, 3, 1, 0, 1, 41, 0, 41, 6, 0, 79, 0, 73~
## $ event_type          <int> 12, 10, 2, 4, 20, 2, 4, 5, 2, 4, 1, 2, 4, 2, 4, 2,~
## $ player_id           <int> 0, 203954, 203496, 0, 0, 1628369, 203967, 1627732,~
## $ opponent_player_id  <int> NA, 201143, NA, NA, NA, NA, NA, 202330, NA, NA, NA~
## $ secondary_player_id <int> NA, 1627732, NA, NA, NA, NA, NA, NA, NA, NA, 16277~
## $ team_id             <int> 0, 1610612755, 1610612755, 1610612738, 0, 16106127~
## $ offensive_team_id   <int> 0, 1610612755, 1610612755, 1610612755, 1610612738,~
## $ home_score          <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ visit_score         <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2, 2, 2, 2, 2, 2, 2,~
## $ order_no            <int> 2000, 6000, 7000, 8000, 9000, 10000, 11000, 12000,~
## $ mins                <dbl> 12, 12, 11, 11, 11, 11, 11, 11, 11, 10, 10, 10, 10~
## $ secs                <dbl> 0, 0, 40, 40, 18, 15, 13, 8, 3, 58, 55, 36, 35, 32~
## https://data.nba.com/data/10s/v2015/json/mobile_teams/nba/2018/scores/pbp/0021800002_full_pbp.json
## Rows: 538
## Columns: 25
## $ season_id           <dbl> 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2018, 20~
## $ game_id             <dbl> 21800002, 21800002, 21800002, 21800002, 21800002, ~
## $ game_date_id        <dbl> 20181016, 20181016, 20181016, 20181016, 20181016, ~
## $ visit_team          <chr> "OKC", "OKC", "OKC", "OKC", "OKC", "OKC", "OKC", "~
## $ home_team           <chr> "GSW", "GSW", "GSW", "GSW", "GSW", "GSW", "GSW", "~
## $ period              <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,~
## $ event_id            <int> 2, 4, 7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 21~
## $ clock               <chr> "12:00", "11:57", "11:48", "11:43", "11:31", "11:1~
## $ description         <chr> "Start Period", "Jump Ball Jones vs Adams (Green g~
```

```
## $ loc_x               <int> 0, 0, -9, 94, 226, 1, 1, -140, -140, -7, 67, 67, -~
## $ loc_y               <int> -80, -80, 193, 319, 90, 120, 120, 218, 218, 17, 12~
## $ opt1                <int> 0, 0, 1, 0, 3, 2, 1, 3, 0, 2, 2, 1, 2, 0, 0, 2, 0,~
## $ opt2                <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ message_type        <int> 0, 0, 1, 45, 80, 78, 0, 1, 0, 6, 80, 0, 5, 0, 40, ~
## $ event_type          <int> 12, 10, 5, 5, 1, 2, 4, 2, 4, 1, 2, 4, 2, 4, 5, 1, ~
## $ player_id           <int> 0, 1627745, 202691, 202331, 201939, 203500, 203471~
## $ opponent_player_id  <int> NA, 203500, 203500, NA, NA, NA, NA, NA, NA, NA, NA~
## $ secondary_player_id <int> NA, 203110, NA, NA, 201142, NA, NA, NA, NA, NA, NA~
## $ team_id             <int> 0, 1610612744, 1610612744, 1610612760, 1610612744,~
## $ offensive_team_id   <int> 0, 1610612744, 1610612744, 1610612760, 1610612744,~
## $ home_score          <int> 0, 0, 0, 0, 3, 3, 3, 3, 3, 5, 5, 5, 5, 5, 5, 5, 5,~
## $ visit_score         <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2, 2,~
## $ order_no            <int> 2000, 6000, 7000, 9000, 10000, 12000, 13000, 14000~
## $ mins                <dbl> 12, 11, 11, 11, 11, 11, 11, 11, 11, 10, 10, 10, 10~
## $ secs                <dbl> 0, 57, 48, 43, 31, 13, 11, 7, 5, 57, 38, 36, 23, 2~
## https://data.nba.com/data/10s/v2015/json/mobile_teams/nba/2018/scores/pbp/0021800003_full_pbp.json
## Rows: 495
## Columns: 25
## $ season_id           <dbl> 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2018, 20~
## $ game_id             <dbl> 21800003, 21800003, 21800003, 21800003, 21800003, ~
## $ game_date_id        <dbl> 20181017, 20181017, 20181017, 20181017, 20181017, ~
## $ visit_team          <chr> "MIL", "MIL", "MIL", "MIL", "MIL", "MIL", "MIL", "~
## $ home_team           <chr> "CHA", "CHA", "CHA", "CHA", "CHA", "CHA", "CHA", "~
## $ period              <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,~
## $ event_id            <int> 2, 4, 7, 9, 11, 12, 13, 14, 15, 16, 18, 19, 20, 22~
## $ clock               <chr> "12:00", "11:56", "11:47", "11:47", "11:47", "11:3~
## $ description         <chr> "Start Period", "Jump Ball Lopez vs Zeller (Anteto~
## $ loc_x               <int> 0, 0, -5, -5, 0, 8, 8, 20, 55, 228, 81, 81, 67, 11~
## $ loc_y               <int> -80, -80, 88, 88, -80, 8, 8, 116, 117, 42, 238, 23~
## $ opt1                <int> 0, 0, 2, 0, 1, 2, 0, 2, 2, 3, 3, 0, 0, 0, 3, 3, 3,~
## $ opt2                <int> 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ message_type        <int> 0, 0, 58, 2, 10, 6, 0, 101, 1, 1, 79, 0, 1, 45, 1,~
## $ event_type          <int> 12, 10, 1, 6, 3, 2, 4, 1, 1, 1, 2, 4, 6, 5, 1, 1, ~
## $ player_id           <int> 0, 201572, 201572, 203469, 201572, 201587, 203114,~
## $ opponent_player_id  <int> NA, 203469, NA, 201572, NA, NA, NA, NA, NA, NA, NA~
## $ secondary_player_id <int> NA, 203507, 203507, NA, NA, NA, NA, NA, NA, 203507~
## $ team_id             <int> 0, 1610612749, 1610612749, 1610612766, 1610612749,~
## $ offensive_team_id   <int> 0, 1610612749, 1610612749, 1610612749, 1610612749,~
## $ home_score          <int> 0, 0, 0, 0, 0, 0, 0, 0, 2, 2, 2, 2, 2, 2, 5, 5, 5,~
## $ visit_score         <int> 0, 0, 2, 2, 3, 3, 3, 5, 5, 8, 8, 8, 8, 8, 8, 11, 1~
## $ order_no            <int> 2000, 6000, 7000, 9000, 11000, 12000, 13000, 14000~
## $ mins                <dbl> 12, 11, 11, 11, 11, 11, 11, 11, 11, 11, 10, 10, 10~
## $ secs                <dbl> 0, 56, 47, 47, 47, 35, 33, 31, 18, 2, 51, 50, 41, ~
```

```
# Gives you an extreamly detailed boxscore that has every action over the course of the game including
```

```
#get_lineups
lineups <- get_lineups(season, 5, 'Base')
```

```
## http://stats.nba.com/stats/leaguedashlineups?Conference=&DateFrom=&DateTo=&Division=&GameSegment=&Gr
## Rows: 2,000
## Columns: 35
```

```
## $ player_id_1       <int> 201566, 201571, 202329, 201572, 101107, 201152, 2007~
## $ player_id_2       <int> 202331, 202696, 203081, 202339, 201587, 201954, 2015~
## $ player_id_3       <int> 203500, 203095, 203090, 203114, 202689, 202711, 2019~
## $ player_id_4       <int> 203924, 203932, 203468, 203507, 203087, 203506, 2026~
## $ player_id_5       <int> 1628390, 1628371, 203994, 1627763, 203469, 1626167, ~
## $ group_name        <chr> "R. Westbrook - P. George - S. Adams - J. Grant - T.~
## $ team_id           <int> 1610612760, 1610612753, 1610612757, 1610612749, 1610~
## $ team_abbreviation <chr> "OKC", "ORL", "POR", "MIL", "CHA", "IND", "TOR", "BO~
## $ gp                <int> 58, 65, 42, 56, 48, 32, 33, 42, 56, 40, 59, 40, 58, ~
## $ w                 <int> 35, 33, 24, 43, 22, 23, 24, 23, 34, 24, 39, 19, 33, ~
## $ l                 <int> 23, 32, 18, 13, 26, 9, 9, 19, 22, 16, 20, 21, 25, 9,~
## $ w_pct             <dbl> 0.603, 0.508, 0.571, 0.768, 0.458, 0.719, 0.727, 0.5~
## $ min               <int> 919, 851, 744, 597, 592, 554, 546, 504, 501, 500, 47~
## $ fgm               <int> 867, 747, 694, 567, 523, 481, 499, 489, 429, 457, 42~
## $ fga               <int> 1811, 1586, 1433, 1152, 1128, 1001, 1025, 970, 912, ~
## $ fg_pct            <dbl> 0.479, 0.471, 0.484, 0.492, 0.464, 0.481, 0.487, 0.5~
## $ fg3m              <int> 227, 183, 157, 155, 164, 116, 131, 139, 102, 145, 13~
## $ fg3a              <int> 567, 526, 438, 450, 445, 289, 374, 362, 295, 363, 35~
## $ fg3_pct           <dbl> 0.400, 0.348, 0.358, 0.344, 0.369, 0.401, 0.350, 0.3~
## $ ftm               <int> 288, 234, 294, 219, 216, 145, 190, 106, 150, 114, 22~
## $ fta               <int> 407, 296, 349, 282, 248, 195, 226, 127, 218, 178, 30~
## $ ft_pct            <dbl> 0.708, 0.791, 0.842, 0.777, 0.871, 0.744, 0.841, 0.8~
## $ oreb              <int> 235, 191, 188, 100, 125, 95, 120, 88, 115, 104, 84, ~
## $ dreb              <int> 709, 647, 555, 505, 417, 379, 408, 368, 381, 348, 34~
## $ reb               <int> 944, 838, 743, 605, 542, 474, 528, 456, 496, 452, 42~
## $ ast               <int> 505, 481, 395, 337, 320, 278, 304, 294, 275, 302, 26~
## $ tov               <int> 271, 248, 187, 170, 137, 161, 139, 124, 162, 151, 13~
## $ stl               <int> 179, 128, 125, 106, 93, 109, 90, 86, 93, 100, 85, 89~
## $ blk               <int> 78, 94, 92, 81, 59, 76, 62, 51, 51, 49, 57, 72, 46, ~
## $ blka              <int> 96, 71, 72, 76, 67, 64, 40, 33, 59, 56, 43, 33, 38, ~
## $ pf                <int> 413, 245, 323, 204, 213, 192, 198, 198, 187, 204, 22~
## $ pfd               <int> 388, 317, 298, 249, 244, 208, 235, 166, 204, 198, 25~
## $ pts               <int> 2249, 1911, 1839, 1508, 1426, 1223, 1319, 1223, 1110~
## $ plus_minus        <int> 160, 48, 139, 92, 93, 53, 105, 59, 58, -2, 121, 78, ~
## $ n                 <int> 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5~
```

```
bulls_lineups <- get_lineups(season, 5, 'Base', team_id = 1610612741)
```

```
## http://stats.nba.com/stats/leaguedashlineups?Conference=&DateFrom=&DateTo=&Division=&GameSegment=&Gr
## Rows: 582
## Columns: 35
## $ player_id_1       <int> 203200, 201577, 203200, 203200, 201577, 203897, 2032~
## $ player_id_2       <int> 203897, 203490, 1627739, 203897, 203897, 1627739, 20~
## $ player_id_3       <int> 203953, 203897, 1627853, 203953, 1627739, 1628374, 1~
## $ player_id_4       <int> 1627853, 1627739, 1628374, 1626166, 1627782, 1628976~
## $ player_id_5       <int> 1628976, 1628374, 1628976, 1628976, 1628374, 1628990~
## $ group_name        <chr> "J. Holiday - Z. LaVine - J. Parker - R. Arcidiacono~
## $ team_id           <int> 1610612741, 1610612741, 1610612741, 1610612741, 1610~
## $ team_abbreviation <chr> "CHI", "CHI", "CHI", "CHI", "CHI", "CHI", "CHI", "CH~
## $ gp                <int> 17, 12, 8, 13, 13, 6, 7, 6, 6, 9, 8, 7, 5, 4, 12, 11~
## $ w                 <int> 3, 6, 4, 3, 4, 0, 1, 1, 1, 5, 3, 2, 1, 1, 3, 3, 2, 4~
## $ l                 <int> 14, 6, 4, 10, 9, 6, 6, 5, 5, 4, 5, 5, 4, 3, 9, 8, 2,~
## $ w_pct             <dbl> 0.176, 0.500, 0.500, 0.231, 0.308, 0.000, 0.143, 0.1~
## $ min               <int> 228, 204, 101, 99, 90, 84, 80, 71, 56, 52, 51, 48, 4~
```

```
## $ fgm               <int> 186, 185, 80, 72, 72, 63, 54, 52, 44, 52, 57, 36, 36~
## $ fga               <int> 420, 386, 181, 168, 170, 149, 133, 122, 114, 83, 97,~
## $ fg_pct            <dbl> 0.443, 0.479, 0.442, 0.429, 0.424, 0.423, 0.406, 0.4~
## $ fg3m              <int> 45, 43, 21, 21, 13, 11, 18, 11, 13, 11, 11, 9, 9, 8,~
## $ fg3a              <int> 151, 112, 56, 53, 46, 35, 59, 32, 38, 21, 25, 34, 21~
## $ fg3_pct           <dbl> 0.298, 0.384, 0.375, 0.396, 0.283, 0.314, 0.305, 0.3~
## $ ftm               <int> 72, 71, 21, 35, 33, 21, 25, 25, 17, 28, 19, 17, 14, ~
## $ fta               <int> 94, 87, 29, 42, 42, 22, 30, 26, 24, 32, 19, 20, 17, ~
## $ ft_pct            <dbl> 0.766, 0.816, 0.724, 0.833, 0.786, 0.955, 0.833, 0.9~
## $ oreb              <int> 35, 44, 15, 18, 18, 12, 18, 9, 20, 8, 9, 7, 7, 4, 6,~
## $ dreb              <int> 174, 144, 68, 62, 85, 59, 48, 54, 34, 45, 43, 35, 43~
## $ reb               <int> 209, 188, 83, 80, 103, 71, 66, 63, 54, 53, 52, 42, 5~
## $ ast               <int> 117, 98, 50, 44, 30, 36, 31, 25, 25, 34, 30, 25, 21,~
## $ tov               <int> 73, 56, 23, 33, 23, 33, 32, 23, 16, 21, 15, 14, 12, ~
## $ stl               <int> 44, 27, 20, 17, 4, 15, 22, 9, 10, 5, 8, 12, 9, 2, 7,~
## $ blk               <int> 25, 20, 14, 11, 13, 6, 1, 6, 6, 7, 5, 5, 5, 8, 4, 3,~
## $ blka              <int> 31, 26, 7, 16, 4, 13, 8, 11, 5, 1, 2, 5, 3, 8, 3, 7,~
## $ pf                <int> 97, 72, 47, 43, 36, 22, 39, 38, 24, 15, 26, 16, 19, ~
## $ pfd               <int> 81, 78, 34, 39, 36, 25, 30, 20, 22, 21, 19, 20, 13, ~
## $ pts               <int> 489, 484, 202, 200, 190, 158, 151, 140, 118, 143, 14~
## $ plus_minus        <int> -22, -23, -7, -44, -1, -42, -30, -12, -24, 57, 22, -~
## $ n                 <int> 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5~
```

```
# Gives you the player ids and names of the lineups of certain players across teams. Allows you to look


#get_on_off
onoff_bulls <- get_on_off(season, 1610612741)
```

```
## http://stats.nba.com/stats/teamplayeronoffsummary?DateFrom=&DateTo=&GameSegment=&LastNGames=0&League
## Rows: 22
## Columns: 16
## $ team_id           <int> 1610612741, 1610612741, 1610612741, 1610612741, 1610~
## $ team_abbreviation <chr> "CHI", "CHI", "CHI", "CHI", "CHI", "CHI", "CHI", "CH~
## $ team_name         <chr> "Chicago Bulls", "Chicago Bulls", "Chicago Bulls", "~
## $ player_id         <int> 1628959, 1627853, 1628469, 1628976, 1627739, 1626245~
## $ player_name       <chr> "Alkins, Rawle", "Arcidiacono, Ryan", "Blakeney, Ant~
## $ gp                <int> 10, 81, 57, 44, 46, 60, 73, 38, 44, 63, 6, 74, 29, 5~
## $ min_on            <int> 120, 1961, 829, 1110, 1389, 746, 1430, 1325, 895, 21~
## $ plus_minus_on     <int> -5, -6, -8, -12, -7, -8, -10, -11, -6, -6, -6, -4, -~
## $ off_rating_on     <int> 106, 104, 102, 97, 106, 103, 100, 98, 101, 105, 103,~
## $ def_rating_on     <int> 111, 110, 110, 109, 113, 111, 110, 109, 107, 112, 11~
## $ net_rating_on     <int> -5, -5, -7, -11, -7, -8, -10, -11, -5, -6, -7, -4, -~
## $ min_off           <int> 3861, 2020, 3152, 2871, 2592, 3235, 2455, 514, 3086,~
## $ plus_minus_off    <int> -8, -10, -8, -6, -8, -8, -6, -4, -8, -10, -21, -11, ~
## $ off_rating_off    <int> 104, 102, 104, 106, 102, 104, 105, 101, 104, 101, 10~
## $ def_rating_off    <int> 112, 112, 112, 112, 111, 112, 112, 104, 113, 111, 12~
## $ net_rating_off    <int> -8, -10, -8, -6, -8, -8, -7, -3, -9, -9, -20, -10, -~
```

```
# Gives a list of the players of a team for a given season. The table contains statistics for every pla


#get_players & get_playerbio
players <- get_players(season)
```

```
## https://stats.nba.com/stats/commonallplayers?LeagueID=00&Season=2018-19&IsOnlyCurrentSeason=1%20
## Rows: 148
## Columns: 14
## $ player_id                 <dbl> 203518, 203112, 1629061, 1629152, 1628959, 1~
## $ display_last_comma_first  <chr> "Abrines, Alex", "Acy, Quincy", "Adel, Deng"~
## $ display_first_last        <chr> "Alex Abrines", "Quincy Acy", "Deng Adel", "~
## $ rosterstatus              <dbl> 0, 0, 1, 0, 1, 1, 1, 0, 0, 0, 1, 0, 1, 1, 1,~
## $ from_year                 <dbl> 2016, 2012, 2018, 2018, 2018, 2017, 2008, 20~
## $ to_year                   <dbl> 2018, 2018, 2018, 2018, 2018, 2019, 2019, 20~
## $ playercode                <chr> "alex_abrines", "quincy_acy", "deng_adel", "~
## $ team_id                   <dbl> 0, 0, 1610612739, 0, 1610612741, 1610612752,~
## $ team_city                 <chr> "", "", "Cleveland", "", "Chicago", "New Yor~
## $ team_name                 <chr> "", "", "Cavaliers", "", "Bulls", "Knicks", ~
## $ team_abbreviation         <chr> "", "", "CLE", "", "CHI", "NYK", "MIA", "", ~
## $ team_code                 <chr> "", "", "cavaliers", "", "bulls", "knicks", ~
## $ games_played_flag         <chr> "Y", "Y", "Y", "Y", "Y", "Y", "Y", "Y", "Y",~
## $ otherleague_experience_ch <dbl> 0, 11, 11, 11, 11, 11, 0, 11, 1, 11, 0, 0, 1~
```

```
player_bio <- get_playerbio(season)
```

```
## https://stats.nba.com/stats/leaguedashplayerbiostats?College=&Conference=&Country=&DateFrom=&DateTo=&
## Rows: 530
## Columns: 23
## $ player_id            <int> 203932, 1628988, 1627846, 201143, 202329, 1626210~
## $ player_name          <chr> "Aaron Gordon", "Aaron Holiday", "Abdel Nader", "~
## $ team_id              <int> 1610612753, 1610612754, 1610612760, 1610612738, 1~
## $ team_abbreviation    <chr> "ORL", "IND", "OKC", "BOS", "POR", "BKN", "SAC", ~
## $ age                  <int> 23, 22, 25, 33, 28, 26, 27, 25, 25, 26, 25, 26, 2~
## $ player_height        <chr> "6-9", "6-1", "6-6", "6-10", "6-9", "6-8", "6-6",~
## $ player_height_inches <int> 81, 73, 78, 82, 81, 80, 78, 78, 77, 85, 81, 80, 8~
## $ player_weight        <int> 220, 185, 225, 245, 220, 265, 214, 200, 186, 250,~
## $ college              <chr> "Arizona", "UCLA", "Iowa State", "Florida", "Wake~
## $ country              <chr> "USA", "USA", "Egypt", "Dominican Republic", "USA~
## $ draft_year           <chr> "2014", "2018", "2016", "2007", "2010", "Undrafte~
## $ draft_round          <chr> "1", "1", "2", "1", "1", "Undrafted", "1", "2", "~
## $ draft_number         <chr> "4", "23", "58", "3", "8", "Undrafted", "12", "32~
## $ gp                   <int> 78, 50, 61, 68, 81, 5, 64, 31, 25, 77, 21, 72, 14~
## $ pts                  <int> 16, 5, 4, 13, 9, 3, 8, 5, 9, 11, 5, 4, 0, 9, 10, ~
## $ reb                  <int> 7, 1, 1, 6, 7, 3, 3, 1, 2, 5, 3, 3, 1, 3, 3, 1, 2~
## $ ast                  <int> 3, 1, 0, 4, 1, 0, 2, 0, 3, 1, 0, 0, 0, 1, 1, 0, 1~
## $ net_rating           <dbl> 1.5, 7.0, -9.5, 6.1, 8.2, 27.1, -11.1, 1.6, 3.2, ~
## $ oreb_pct             <dbl> 0.047, 0.008, 0.017, 0.062, 0.048, 0.114, 0.021, ~
## $ dreb_pct             <dbl> 0.165, 0.088, 0.139, 0.161, 0.204, 0.405, 0.151, ~
## $ usg_pct              <dbl> 0.213, 0.206, 0.148, 0.188, 0.134, 0.222, 0.185, ~
## $ ts_pct               <dbl> 0.538, 0.518, 0.522, 0.605, 0.568, 0.610, 0.523, ~
## $ ast_pct              <dbl> 0.166, 0.180, 0.044, 0.203, 0.057, 0.176, 0.142, ~
```

```
# get players gives you a list of players that played that season. There is a category for rostered and


#get_shotchart
shors_abrines <- get_shotchart(203518, season)
```

```
## https://stats.nba.com/stats/shotchartdetail?CFID=33&CFPARAMS=2018-19&ContextFilter=&ContextMeasure=F
## Rows: 157
## Columns: 24
## $ grid_type           <chr> "Shot Chart Detail", "Shot Chart Detail", "Shot Ch~
## $ game_id             <int> 21800002, 21800002, 21800002, 21800002, 21800002, ~
## $ game_event_id       <int> 177, 254, 366, 372, 383, 535, 553, 597, 122, 141, ~
## $ player_id           <int> 203518, 203518, 203518, 203518, 203518, 203518, 20~
## $ player_name         <chr> "Alex Abrines", "Alex Abrines", "Alex Abrines", "A~
## $ team_id             <int> 1610612760, 1610612760, 1610612760, 1610612760, 16~
## $ team_name           <chr> "Oklahoma City Thunder", "Oklahoma City Thunder", ~
## $ period              <int> 1, 2, 2, 2, 2, 3, 3, 4, 1, 1, 2, 2, 2, 2, 3, 3, 4,~
## $ minutes_remaining   <int> 0, 7, 1, 0, 0, 1, 0, 9, 2, 1, 11, 9, 7, 0, 3, 0, 8~
## $ seconds_remaining   <int> 41, 38, 21, 52, 4, 21, 24, 49, 39, 48, 14, 10, 19,~
## $ event_type          <chr> "Made Shot", "Missed Shot", "Made Shot", "Missed S~
## $ action_type         <chr> "Driving Layup Shot", "Jump Shot", "Pullup Jump sh~
## $ shot_type           <chr> "2PT Field Goal", "3PT Field Goal", "3PT Field Goa~
## $ shot_zone_basic     <chr> "Restricted Area", "Above the Break 3", "Above the~
## $ shot_zone_area      <chr> "Center(C)", "Left Side Center(LC)", "Left Side Ce~
## $ shot_zone_range     <chr> "Less Than 8 ft.", "24+ ft.", "24+ ft.", "24+ ft."~
## $ shot_distance       <int> 2, 25, 26, 26, 14, 25, 26, 22, 2, 24, 27, 24, 21, ~
## $ loc_x               <int> 11, -200, -112, 92, 90, -226, 154, -226, -19, 143,~
## $ loc_y               <int> 21, 164, 237, 245, 111, 110, 217, 32, 23, 204, 235~
## $ shot_attempted_flag <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,~
## $ shot_made_flag      <int> 1, 0, 1, 0, 0, 0, 1, 0, 1, 1, 0, 1, 1, 0, 0, 0, 0,~
## $ game_date           <int> 20181016, 20181016, 20181016, 20181016, 20181016, ~
## $ htm                 <chr> "GSW", "GSW", "GSW", "GSW", "GSW", "GSW", "GSW", "~
## $ vtm                 <chr> "OKC", "OKC", "OKC", "OKC", "OKC", "OKC", "OKC", "~
```

```
# Has very discriptive data on every shot for every player over the course of a season. In order to mak


#get_schedule
schedule <- get_schedule(season)
```

```
## https://data.nba.com/data/10s/v2015/json/mobile_teams/nba/2018/league/00_full_schedule.json
## Rows: 1,393
## Columns: 12
## $ game_id        <int> 11800001, 11800002, 11800003, 11800004, 11800005, 11800~
## $ gcode          <chr> "20180928/MELPHI", "20180928/BOSCHA", "20180929/PORTOR"~
## $ series         <chr> "", "", "", "", "", "", "", "", "", "", "", "", "", "",~
## $ game_date      <chr> "2018-09-28", "2018-09-28", "2018-09-29", "2018-09-29",~
## $ arena          <chr> "Wells Fargo Center", "Dean E. Smith Center", "Rogers A~
## $ game_date_utc  <chr> "2018-09-28", "2018-09-28", "2018-09-29", "2018-09-30",~
## $ game_time_utc  <chr> "23:00", "23:30", "23:00", "00:30", "00:30", "01:00", "~
## $ visitor        <chr> "MEL", "BOS", "POR", "BJD", "MIN", "PER", "MIA", "CHA",~
## $ home           <chr> "PHI", "CHA", "TOR", "DAL", "GSW", "UTA", "SAS", "BOS",~
## $ season_type    <chr> "PRE", "PRE", "PRE", "PRE", "PRE", "PRE", "PRE", "PRE",~
## $ season_type_id <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ season         <int> 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2~
```

```
# Gives you the complete NBA schedule for the selected season
```

```
#get_tracking
tracking <- get_tracking(season, 'Team',measure_type = 'Defense')
```

```
## http://stats.nba.com/stats/leaguedashptstats?College=&Conference=&Country=&DateFrom=&DateTo=&Divisio
## Rows: 30
## Columns: 13
## $ team_id           <int> 1610612737, 1610612738, 1610612751, 1610612766, 1610~
## $ team_abbreviation <chr> "ATL", "BOS", "BKN", "CHA", "CHI", "CLE", "DAL", "DE~
## $ team_name         <chr> "Atlanta Hawks", "Boston Celtics", "Brooklyn Nets", ~
## $ gp                <int> 82, 82, 82, 82, 81, 82, 82, 82, 82, 82, 82, 82, 82, ~
## $ w                 <int> 29, 49, 42, 39, 22, 19, 33, 54, 41, 57, 53, 48, 48, ~
## $ l                 <int> 53, 33, 40, 43, 59, 63, 49, 28, 41, 25, 29, 34, 34, ~
## $ min               <int> 242, 241, 243, 241, 242, 240, 241, 240, 242, 241, 24~
## $ stl               <int> 8, 8, 6, 7, 7, 6, 6, 7, 6, 7, 8, 8, 6, 7, 8, 7, 7, 8~
## $ blk               <int> 5, 5, 4, 4, 4, 2, 4, 4, 4, 6, 4, 4, 4, 5, 5, 5, 5, 5~
## $ dreb              <int> 34, 34, 35, 33, 34, 31, 35, 34, 33, 36, 31, 33, 35, ~
## $ def_rim_fgm       <int> 16, 15, 15, 17, 16, 17, 16, 16, 16, 15, 17, 15, 17, ~
## $ def_rim_fga       <int> 25, 24, 25, 26, 25, 25, 24, 25, 25, 24, 26, 25, 26, ~
## $ def_rim_fg_pct    <dbl> 0.654, 0.638, 0.620, 0.662, 0.657, 0.694, 0.659, 0.6~
```

```
# seems like you can track different measures by teams by season. You can change your measure type to t


#get_all_tracking
all_tracking <- get_all_tracking(season, "Team", measure_types = 'Defense')
```

```
## http://stats.nba.com/stats/leaguedashptstats?College=&Conference=&Country=&DateFrom=&DateTo=&Divisio
## Rows: 30
## Columns: 13
## $ team_id           <int> 1610612737, 1610612738, 1610612751, 1610612766, 1610~
## $ team_abbreviation <chr> "ATL", "BOS", "BKN", "CHA", "CHI", "CLE", "DAL", "DE~
## $ team_name         <chr> "Atlanta Hawks", "Boston Celtics", "Brooklyn Nets", ~
## $ gp                <int> 82, 82, 82, 82, 81, 82, 82, 82, 82, 82, 82, 82, 82, ~
## $ w                 <int> 29, 49, 42, 39, 22, 19, 33, 54, 41, 57, 53, 48, 48, ~
## $ l                 <int> 53, 33, 40, 43, 59, 63, 49, 28, 41, 25, 29, 34, 34, ~
## $ min               <int> 242, 241, 243, 241, 242, 240, 241, 240, 242, 241, 24~
## $ stl               <int> 8, 8, 6, 7, 7, 6, 6, 7, 6, 7, 8, 8, 6, 7, 8, 7, 7, 8~
## $ blk               <int> 5, 5, 4, 4, 4, 2, 4, 4, 4, 6, 4, 4, 4, 5, 5, 5, 5, 5~
## $ dreb              <int> 34, 34, 35, 33, 34, 31, 35, 34, 33, 36, 31, 33, 35, ~
## $ def_rim_fgm       <int> 16, 15, 15, 17, 16, 17, 16, 16, 16, 15, 17, 15, 17, ~
## $ def_rim_fga       <int> 25, 24, 25, 26, 25, 25, 24, 25, 25, 24, 26, 25, 26, ~
## $ def_rim_fg_pct    <dbl> 0.654, 0.638, 0.620, 0.662, 0.657, 0.694, 0.659, 0.6~
```

```
# dont see much of a difference between all tracking and tracking above. The difference here is you don

#get_playtype
playtype <- get_playtype(season, 'T', 'Postup')
```

```
## https://stats.nba.com/stats/synergyplaytypes?LeagueID=00&&PerMode=PerGame&PlayType=Postup&PlayerOrTea
## Rows: 30
## Columns: 22
## $ season_id         <int> 22018, 22018, 22018, 22018, 22018, 22018, 22018, 220~
```

```
## $ team_id           <int> 1610612759, 1610612755, 1610612750, 1610612743, 1610~
## $ team_abbreviation <chr> "SAS", "PHI", "MIN", "DEN", "DET", "NOP", "POR", "LA~
## $ team_name         <chr> "San Antonio Spurs", "Philadelphia 76ers", "Minnesot~
## $ play_type         <chr> "Postup", "Postup", "Postup", "Postup", "Postup", "P~
## $ type_grouping     <chr> "Offensive", "Offensive", "Offensive", "Offensive", ~
## $ percentile        <dbl> 0.897, 0.552, 0.586, 0.759, 0.276, 0.862, 0.621, 0.7~
## $ gp                <int> 82, 82, 82, 82, 82, 82, 82, 82, 81, 82, 82, 82, 82, ~
## $ poss_pct          <dbl> 0.122, 0.107, 0.100, 0.091, 0.089, 0.073, 0.072, 0.0~
## $ ppp               <dbl> 0.988, 0.938, 0.944, 0.980, 0.898, 0.987, 0.951, 0.9~
## $ fg_pct            <dbl> 0.485, 0.464, 0.502, 0.504, 0.474, 0.483, 0.506, 0.4~
## $ ft_poss_pct       <dbl> 0.144, 0.220, 0.141, 0.162, 0.178, 0.205, 0.126, 0.1~
## $ tov_poss_pct      <dbl> 0.080, 0.137, 0.152, 0.119, 0.143, 0.103, 0.123, 0.1~
## $ sf_poss_pct       <dbl> 0.121, 0.165, 0.114, 0.129, 0.147, 0.173, 0.100, 0.1~
## $ plusone_poss_pct  <dbl> 0.033, 0.038, 0.028, 0.032, 0.035, 0.031, 0.019, 0.0~
## $ score_poss_pct    <dbl> 0.498, 0.483, 0.477, 0.501, 0.465, 0.511, 0.487, 0.4~
## $ efg_pct           <dbl> 0.485, 0.464, 0.502, 0.504, 0.474, 0.483, 0.506, 0.4~
## $ poss              <int> 13, 12, 11, 10, 9, 8, 8, 7, 8, 8, 8, 7, 7, 7, 6, 7, ~
## $ pts               <int> 13, 11, 10, 9, 8, 8, 7, 7, 7, 7, 7, 6, 6, 6, 6, 6, 6~
## $ fgm               <int> 5, 3, 4, 3, 3, 3, 3, 3, 3, 3, 3, 2, 2, 2, 2, 2, 2, 2~
## $ fga               <int> 10, 8, 8, 7, 7, 6, 6, 6, 6, 6, 6, 5, 5, 5, 5, 5, 4, ~
## $ fgmx              <int> 5, 4, 4, 3, 3, 3, 3, 3, 3, 3, 3, 2, 2, 3, 2, 3, 2, 2~
```

```
# allows you to look at all 32 teams and how they perform givern a certain playtype. I think it would a


#get_genteral
general <- get_general(season, type = 'Team', 'Base')
```

```
## https://stats.nba.com/stats/leaguedashTeamstats?College=&Conference=&Country=&DateFrom=&DateTo=&Divis
## Rows: 30
## Columns: 56
## $ team_id         <int> 1610612737, 1610612738, 1610612751, 1610612766, 161061~
## $ team_name       <chr> "Atlanta Hawks", "Boston Celtics", "Brooklyn Nets", "C~
## $ gp              <int> 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82~
## $ w               <int> 29, 49, 42, 39, 22, 19, 33, 54, 41, 57, 53, 48, 48, 37~
## $ l               <int> 53, 33, 40, 43, 60, 63, 49, 28, 41, 25, 29, 34, 34, 45~
## $ w_pct           <dbl> 0.354, 0.598, 0.512, 0.476, 0.268, 0.232, 0.402, 0.659~
## $ min             <int> 48, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48, 48~
## $ fgm             <int> 41, 42, 40, 40, 39, 38, 38, 41, 38, 44, 39, 41, 41, 42~
## $ fga             <int> 91, 90, 89, 89, 87, 87, 86, 90, 88, 89, 87, 87, 87, 90~
## $ fg_pct          <dbl> 0.451, 0.465, 0.449, 0.448, 0.453, 0.444, 0.447, 0.466~
## $ fg3m            <int> 13, 12, 12, 11, 9, 10, 12, 11, 12, 13, 16, 9, 10, 10, ~
## $ fg3a            <int> 37, 34, 36, 33, 25, 29, 36, 31, 34, 34, 45, 25, 25, 31~
## $ fg3_pct         <dbl> 0.352, 0.365, 0.353, 0.351, 0.351, 0.355, 0.340, 0.351~
## $ ftm             <int> 17, 15, 19, 18, 16, 16, 18, 15, 17, 16, 19, 15, 22, 16~
## $ fta             <int> 23, 19, 25, 23, 20, 20, 25, 20, 23, 20, 24, 21, 28, 23~
## $ ft_pct          <dbl> 0.752, 0.802, 0.745, 0.797, 0.783, 0.792, 0.742, 0.755~
## $ oreb            <int> 11, 9, 11, 9, 8, 10, 10, 11, 11, 9, 10, 9, 9, 10, 8, 1~
## $ dreb            <int> 34, 34, 35, 33, 34, 31, 35, 34, 33, 36, 31, 33, 35, 36~
## $ reb             <int> 46, 44, 46, 43, 42, 42, 45, 46, 45, 46, 42, 43, 45, 46~
## $ ast             <int> 25, 26, 23, 23, 21, 20, 23, 27, 22, 29, 21, 26, 24, 25~
## $ tov             <int> 17, 12, 15, 12, 14, 13, 14, 13, 13, 14, 13, 13, 14, 15~
## $ stl             <int> 8, 8, 6, 7, 7, 6, 6, 7, 6, 7, 8, 8, 6, 7, 8, 7, 7, 8, ~
## $ blk             <int> 5, 5, 4, 4, 4, 2, 4, 4, 4, 6, 4, 4, 4, 5, 5, 5, 5, 5, ~
```

```
## $ blka            <int> 5, 3, 5, 6, 5, 5, 4, 5, 5, 3, 4, 5, 6, 5, 4, 4, 4, 5, ~
## $ pf              <int> 23, 20, 21, 18, 20, 20, 20, 20, 22, 21, 22, 19, 23, 20~
## $ pfd             <int> 22, 19, 22, 20, 18, 19, 23, 20, 21, 19, 20, 20, 24, 20~
## $ pts             <int> 113, 112, 112, 110, 104, 104, 108, 110, 107, 117, 113,~
## $ plus_minus      <int> -6, 4, 0, -1, -8, -9, -1, 4, 0, 6, 4, 3, 0, -1, -2, 0,~
## $ gp_rank         <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ~
## $ w_rank          <int> 26, 9, 14, 17, 27, 28, 22, 4, 16, 3, 5, 11, 11, 20, 22~
## $ l_rank          <int> 26, 9, 14, 17, 27, 28, 22, 4, 16, 3, 5, 11, 11, 20, 22~
## $ w_pct_rank      <dbl> 26, 9, 14, 17, 27, 28, 22, 4, 16, 3, 5, 11, 11, 20, 22~
## $ min_rank        <int> 7, 18, 1, 11, 3, 24, 18, 27, 7, 15, 11, 30, 11, 18, 4,~
## $ fgm_rank        <int> 15, 11, 20, 21, 23, 26, 28, 12, 27, 1, 25, 16, 17, 6, ~
## $ fga_rank        <int> 4, 9, 14, 12, 22, 23, 28, 11, 19, 13, 26, 27, 24, 8, 3~
## $ fg_pct_rank     <dbl> 21, 14, 25, 26, 20, 28, 27, 13, 29, 1, 24, 4, 7, 9, 23~
## $ fg3m_rank       <int> 4, 6, 5, 11, 30, 20, 7, 18, 9, 3, 1, 29, 25, 20, 27, 1~
## $ fg3a_rank       <int> 3, 7, 5, 10, 27, 24, 4, 16, 6, 8, 1, 29, 28, 17, 25, 1~
## $ fg3_pct_rank    <dbl> 16, 7, 14, 18, 19, 13, 27, 17, 23, 3, 12, 5, 2, 29, 25~
## $ ftm_rank        <int> 18, 28, 6, 9, 25, 22, 7, 27, 19, 23, 3, 26, 1, 24, 15,~
## $ fta_rank        <int> 12, 29, 4, 16, 26, 27, 5, 25, 17, 28, 7, 23, 1, 14, 18~
## $ ft_pct_rank     <dbl> 21, 4, 24, 6, 11, 7, 25, 20, 23, 5, 9, 22, 8, 29, 15, ~
## $ oreb_rank       <int> 4, 20, 10, 19, 30, 12, 16, 2, 5, 21, 14, 25, 22, 15, 2~
## $ dreb_rank       <int> 18, 16, 10, 22, 21, 28, 14, 17, 24, 3, 29, 23, 8, 4, 2~
## $ reb_rank        <int> 12, 22, 7, 23, 25, 26, 16, 8, 18, 11, 28, 24, 13, 6, 2~
## $ ast_rank        <int> 10, 5, 21, 24, 27, 29, 22, 2, 26, 1, 28, 9, 18, 11, 19~
## $ tov_rank        <int> 30, 3, 26, 2, 19, 9, 20, 8, 11, 21, 6, 10, 22, 29, 15,~
## $ stl_rank        <int> 11, 4, 27, 21, 20, 28, 29, 13, 22, 15, 5, 3, 23, 16, 6~
## $ blk_rank        <int> 14, 10, 28, 18, 26, 30, 26, 24, 29, 1, 18, 20, 22, 8, ~
## $ blka_rank       <int> 24, 2, 22, 29, 28, 27, 6, 14, 17, 1, 8, 21, 30, 20, 13~
## $ pf_rank         <int> 29, 12, 23, 3, 9, 6, 8, 7, 26, 22, 25, 4, 28, 13, 24, ~
## $ pfd_rank        <int> 5, 26, 7, 18, 30, 28, 2, 20, 11, 27, 24, 23, 1, 15, 9,~
## $ pts_rank        <int> 12, 14, 15, 19, 27, 29, 21, 20, 25, 2, 11, 22, 5, 16, ~
## $ plus_minus_rank <int> 26, 6, 15, 18, 27, 30, 20, 8, 17, 2, 5, 10, 13, 23, 24~
## $ cfid            <int> 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10~
## $ cfparams        <chr> "Atlanta Hawks", "Boston Celtics", "Brooklyn Nets", "C~
```

```
# oragnized by teams. This has general team info and organizes them across multiple statistics and rank
```

```
#get_hustle
hustle <- get_hustle(21800001)
```

```
## http://stats.nba.com/stats/hustlestatsboxscore?GameID=0021800001
## Rows: 24
## Columns: 26
## $ game_id                 <int> 21800001, 21800001, 21800001, 21800001, 2180~
## $ team_id                 <int> 1610612755, 1610612755, 1610612755, 16106127~
## $ team_abbreviation       <chr> "PHI", "PHI", "PHI", "PHI", "PHI", "PHI", "P~
## $ team_city               <chr> "Philadelphia", "Philadelphia", "Philadelphi~
## $ player_id               <int> 203967, 203496, 203954, 1628365, 1627732, 10~
## $ player_name             <chr> "Dario Saric", "Robert Covington", "Joel Emb~
## $ start_position          <chr> "F", "F", "C", "G", "G", "", "", "", "", "",~
## $ comment                 <chr> "", "", "", "", "", "", "", "", "", "", "", ~
## $ pts                     <int> 6, 8, 23, 5, 19, 5, 16, 4, 1, 0, 0, 23, 10, ~
## $ contested_shots         <int> 7, 9, 20, 1, 7, 4, 3, 2, 2, 0, 0, 5, 5, 19, ~
## $ contested_shots_2pt     <int> 3, 4, 14, 0, 2, 4, 2, 1, 1, 0, 0, 0, 3, 15, ~
```

```
## $ contested_shots_3pt       <int> 4, 5, 6, 1, 5, 0, 1, 1, 1, 0, 0, 5, 2, 4, 3,~
## $ deflections               <int> 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ charges_drawn             <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ screen_assists            <int> 1, 0, 3, 2, 2, 1, 0, 0, 0, 0, 0, 2, 0, 2, 0,~
## $ screen_ast_pts            <int> 2, 0, 6, 5, 5, 2, 0, 0, 0, 0, 0, 5, 0, 4, 0,~
## $ off_loose_balls_recovered <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ def_loose_balls_recovered <int> 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0,~
## $ loose_balls_recovered     <int> 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0,~
## $ off_boxouts               <int> 2, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ def_boxouts               <int> 2, 0, 9, 2, 4, 2, 0, 0, 1, 0, 0, 1, 3, 5, 0,~
## $ box_out_player_team_rebs  <int> 0, 0, 4, 1, 1, 1, 0, 0, 0, 0, 0, 1, 1, 3, 0,~
## $ box_out_player_rebs       <int> 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,~
## $ box_outs                  <int> 4, 0, 9, 3, 4, 3, 0, 0, 1, 0, 0, 1, 3, 5, 0,~
## $ mins                      <int> 22, 34, 36, 24, 42, 11, 29, 22, 12, 1, 1, 28~
## $ secs                      <int> 54, 13, 49, 20, 44, 11, 46, 26, 43, 27, 27, ~
```

```
# This might be the most interesting as it is the "hustle" stats that dont show up on a normal stat she


#get_shooting
shooting <- get_shooting(season, 'Team', "By+Zone", "Base")
```

```
## https://stats.nba.com/stats/leaguedashTeamshotlocations?College=&Conference=&Country=&DateFrom=&Date'
## Rows: 30
## Columns: 25
## $ team_id                 <int> 1610612737, 1610612738, 1610612751, 161061276~
## $ team_name               <chr> "Atlanta Hawks", "Boston Celtics", "Brooklyn ~
## $ fgm_restricted_area     <int> 20, 16, 18, 17, 18, 16, 17, 18, 16, 16, 16, 1~
## $ fga_restricted_area     <int> 33, 26, 30, 29, 30, 27, 26, 29, 27, 24, 26, 3~
## $ fg_pct_restricted_area  <dbl> 0.611, 0.644, 0.612, 0.594, 0.600, 0.597, 0.6~
## $ fgm_in_the_paint        <int> 5, 5, 5, 5, 7, 6, 5, 7, 5, 4, 4, 5, 6, 4, 6, ~
## $ fga_in_the_paint        <int> 13, 13, 14, 14, 17, 15, 13, 17, 14, 10, 10, 1~
## $ fg_pct_in_the_paint     <dbl> 0.378, 0.427, 0.376, 0.409, 0.415, 0.385, 0.3~
## $ fgm_mid_range           <int> 2, 7, 3, 4, 5, 6, 4, 4, 4, 9, 2, 7, 5, 4, 4, ~
## $ fga_mid_range           <int> 7, 16, 8, 12, 14, 15, 10, 12, 10, 19, 4, 18, ~
## $ fg_pct_mid_range        <dbl> 0.363, 0.423, 0.388, 0.406, 0.371, 0.405, 0.3~
## $ fgm_left_corner_3       <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, ~
## $ fga_left_corner_3       <int> 4, 3, 3, 3, 3, 3, 3, 3, 5, 3, 4, 3, 3, 3, 3, ~
## $ fg_pct_left_corner_3    <dbl> 0.373, 0.418, 0.385, 0.367, 0.389, 0.399, 0.3~
## $ fgm_right_corner_3      <int> 2, 1, 1, 1, 1, 0, 1, 1, 1, 1, 2, 1, 1, 1, 1, ~
## $ fga_right_corner_3      <int> 5, 3, 3, 3, 2, 2, 3, 2, 4, 3, 6, 2, 2, 3, 3, ~
## $ fg_pct_right_corner_3   <dbl> 0.406, 0.282, 0.359, 0.454, 0.418, 0.320, 0.3~
## $ fgm_above_the_break_3   <int> 9, 10, 10, 9, 6, 8, 9, 8, 8, 10, 11, 6, 7, 7,~
## $ fga_above_the_break_3   <int> 26, 27, 28, 26, 19, 22, 28, 24, 25, 27, 33, 1~
## $ fg_pct_above_the_break_3 <dbl> 0.340, 0.371, 0.349, 0.342, 0.339, 0.354, 0.3~
## $ fgm_backcourt           <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ fga_backcourt           <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ~
## $ fg_pct_backcourt        <dbl> 0.000, 0.000, 0.071, 0.054, 0.000, 0.000, 0.0~
## $ date_from               <chr> "", "", "", "", "", "", "", "", "", "", "", "~
## $ date_to                 <chr> "", "", "", "", "", "", "", "", "", "", "", "~
```

```
# Breaks down shooting by team. Each teams shooting is broken down by sections of the court such as res
```

```r
#get_defense
defense <- get_defense(season = 2018, type = 'Team', defense_category = 'Overall', per_mode = 'Totals')
```

```
## https://stats.nba.com/stats/leaguedashptTeamdefend?College=&Conference=&Country=&DateFrom=&DateTo=&D
## Rows: 30
## Columns: 11
## $ team_id           <int> 1610612749, 1610612748, 1610612744, 1610612738, 1610~
## $ team_name         <chr> "Milwaukee Bucks", "Miami Heat", "Golden State Warri~
## $ team_abbreviation <chr> "MIL", "MIA", "GSW", "BOS", "LAL", "IND", "UTA", "TO~
## $ gp                <int> 82, 82, 82, 82, 82, 82, 81, 82, 82, 82, 82, 82, 81, ~
## $ g                 <int> 82, 82, 82, 82, 82, 82, 81, 82, 82, 82, 82, 82, 81, ~
## $ freq              <int> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ d_fgm             <int> 3319, 3135, 3277, 3233, 3423, 3163, 3208, 3285, 3221~
## $ d_fga             <int> 7664, 7101, 7377, 7208, 7586, 7025, 7112, 7318, 7035~
## $ d_fg_pct          <dbl> 0.433, 0.441, 0.444, 0.449, 0.451, 0.450, 0.451, 0.4~
## $ normal_fg_pct     <dbl> 0.457, 0.455, 0.457, 0.459, 0.461, 0.459, 0.459, 0.4~
## $ pct_plusminus     <int> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0~
```

```r
# is sorted by the 32 teams in this example but can aslo be sorted by players. Can look through differe
```

```r
#get_news
news <- get_news(limit = 10)
```

```
## https://stats-prod.nba.com/wp-json/statscms/v1/type/spotlight/?limit=10
## [1] "lexical error: invalid char in json text.\n                                       <!DOCTYPE HTM
```

```r
# Doesnt seem to work for whatever reason. It is supposed to return a data set with weekly news. Doesnt
```

```r
#get_player_movement
player_movement <- get_player_movement()
```

```
## https://stats.nba.com/js/data/playermovement/NBA_Player_Movement.json
## Rows: 4,441
## Columns: 9
## $ transaction_type        <chr> "Signing", "Signing", "Trade", "Trade", "Trade~
## $ transaction_date        <chr> "2021-03-22T00:00:00", "2021-03-22T00:00:00", ~
## $ transaction_description <chr> "Cleveland Cavaliers signed guard Quinn Cook t~
## $ team_id                 <int> 1610612739, 1610612751, 1610612746, 1610612758~
## $ team_slug               <chr> "cavaliers", "nets", "clippers", "kings", "kin~
## $ player_id               <int> 1626188, 1628993, 0, 1629662, 0, 1628391, 2015~
## $ player_slug             <chr> "quinn-cook", "alize-johnson", "", "mfiondu-ka~
## $ additional_sort         <int> 0, 0, 1610612758, 1610612746, 1610612746, 1610~
## $ groupsort               <chr> "Signing 1037930", "Signing 1037933", "Trade 2~
```

```r
# This function gets all the roster tansactions since 2015. Is similar to the data that we had last sem
```

```r
#get_rotowire_status
rotowire_status <- get_rotowire_status()
```

```
## https://stats-prod.nba.com/wp-json/statscms/v1/rotowire/player/
## [1] "lexical error: invalid char in json text.\n                                                    <!DOCTYPE HTM
```

```
# I get a similar error to that of the funciton to get news.

#get_shooting_dashboard
shooting_dashboard <- get_shooting_dashboard(season = 2018, type = 'Team', general_range = 'Overall')
```

```
## https://stats.nba.com/stats/leaguedashTeamptshot?CloseDefDistRange=&College=&Conference=&Country=&Da
## Rows: 30
## Columns: 26
## $ team_id              <int> 1610612760, 1610612758, 1610612740, 1610612737, 1~
## $ team_name            <chr> "Oklahoma City Thunder", "Sacramento Kings", "New~
## $ team_abbreviation    <chr> "OKC", "SAC", "NOP", "ATL", "MIN", "MIL", "BOS", ~
## $ gp                   <int> 81, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 8~
## $ g                    <int> 81, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 82, 8~
## $ fga_frequency        <dbl> 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1~
## $ fgm                  <int> 42, 43, 43, 41, 41, 43, 42, 42, 42, 41, 40, 40, 4~
## $ fga                  <int> 93, 93, 92, 91, 91, 91, 90, 90, 90, 89, 89, 89, 8~
## $ fg_pct               <dbl> 0.454, 0.464, 0.474, 0.451, 0.456, 0.476, 0.465, ~
## $ efg_pct              <dbl> 0.515, 0.525, 0.529, 0.522, 0.511, 0.550, 0.534, ~
## $ fg2a_frequency       <dbl> 0.652, 0.678, 0.676, 0.597, 0.685, 0.580, 0.619, ~
## $ fg2m                 <int> 31, 31, 33, 28, 31, 29, 29, 32, 31, 30, 28, 27, 2~
## $ fg2a                 <int> 61, 63, 62, 54, 62, 52, 56, 59, 59, 58, 55, 53, 5~
## $ fg2_pct              <dbl> 0.511, 0.505, 0.536, 0.518, 0.504, 0.565, 0.527, ~
## $ fg3a_frequency       <dbl> 0.348, 0.322, 0.324, 0.403, 0.315, 0.420, 0.381, ~
## $ fg3m                 <int> 11, 11, 10, 13, 10, 13, 12, 10, 11, 10, 11, 12, 1~
## $ fg3a                 <int> 32, 29, 29, 37, 28, 38, 34, 31, 30, 31, 33, 36, 3~
## $ fg3_pct              <dbl> 0.348, 0.378, 0.344, 0.352, 0.351, 0.352, 0.365, ~
## $ general_range        <chr> "Overall", "Overall", "Overall", "Overall", "Over~
## $ shot_clock_range     <chr> "", "", "", "", "", "", "", "", "", "", "", "", "~
## $ dribble_range        <chr> "", "", "", "", "", "", "", "", "", "", "", "", "~
## $ touch_time_range     <chr> "", "", "", "", "", "", "", "", "", "", "", "", "~
## $ close_def_dist_range <chr> "", "", "", "", "", "", "", "", "", "", "", "", "~
## $ shot_dist_range      <chr> "", "", "", "", "", "", "", "", "", "", "", "", "~
## $ date_from            <chr> "", "", "", "", "", "", "", "", "", "", "", "", "~
## $ date_to              <chr> "", "", "", "", "", "", "", "", "", "", "", "", "~
```

```
# This is a further breakdown of the shooting function. It allows you to look deeper into things such a
```