# game_analysis

```
data <- read.csv('vw_gameresults.csv')
head(data)
```

```
##   gameid leagid leagyear weeknum            gamedate awayid      atmloc
aconfid
## 1 120241      1     2024       1 2024-09-05 00:00:00     18   Baltimore
7
## 2 120242      1     2024       1 2024-09-06 00:00:00      3   Green Bay
6
## 3 120243      1     2024       1 2024-09-08 00:00:00     21  Pittsburgh
7
## 4 120244      1     2024       1 2024-09-08 00:00:00     45     Arizona
6
## 5 120245      1     2024       1 2024-09-08 00:00:00     26   Tennessee
7
## 6 120246      1     2024       1 2024-09-08 00:00:00     11 New England
7
##      aconf adivid adivname homeid       htmloc hconfid    hconf hdivid
hdivname
## 1 American      4    North     15  Kansas City       7 American     14
West
## 2 National      4    North      1 Philadelphia       6 National      5
East
## 3 American      4    North      5      Atlanta       6 National      8
South
## 4 National     14     West      9      Buffalo       7 American      5
East
## 5 American      8    South     77      Chicago       6 National      4
North
## 6 American      5     East     19   Cincinnati       7 American      4
North
##   ascore hscore spread   ou totalou favid dogid winteamid loseteamid
isconf
## 1     20     27    3.0 46.5      47    15    18        15         18
1
## 2     29     34    2.0 48.5      63     1     3         1          3
1
## 3     18     10    4.0 42.0      28     5    21        21          5
0
## 4     28     34    6.5 46.0      62     9    45         9         45
0
## 5     17     24    4.0 44.0      41    77    26        77         26
0
## 6     16     10    7.5 41.0      26    19    11        11         19
1
##   isdiv ot so lineoutcomeid              lineoutcome totaloutcomeid
## 1     0  0  0             3   favorite win and cover              6
```

```
## 2     0  0  0             3   favorite win and cover              6
## 3     0  0  0             2        dog win and cover              5
## 4     0  0  0             4 dog cover | favorite win              6
## 5     0  0  0             3   favorite win and cover              5
## 6     0  0  0             2        dog win and cover              5
##   totaloutcome siteloc gametypeid
## 1         over       1          1
## 2         over       2          1
## 3        under       1          1
## 4         over       1          1
## 5        under       1          1
## 6        under       1          1
```

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(tidyr)
det_df <- read.csv('vw_gameteamresultsdetail.csv')
leagyear_value = 2024
df <- det_df %>%
  filter(leagyear == leagyear_value, isfav == 1, iscover == 1) %>%
  group_by(leagid,spread) %>%
  summarise(iscover_sum = sum(iscover, na.rm = TRUE)) %>%
  ungroup()
```

```
## `summarise()` has grouped output by 'leagid'. You can override using the
## `.groups` argument.
```

```
df <- as.data.frame(df)
head(df)
```

```
##   leagid spread iscover_sum
## 1      1    1.0           8
## 2      1    1.5          10
## 3      1   10.0           3
## 4      1   10.5           1
## 5      1   11.0           2
## 6      1   11.5           1
```

```
det1_df <- read.csv('vw_gameteamresultsdetail.csv')
leagyear_value = 2024
df1 <- det1_df %>%
```

```r
  filter(leagyear == leagyear_value, isfav == 1, ispush == 0) %>%
  group_by(leagid,spread) %>%
  summarise(
    favcover = sum(iscover == 1, na.rm = TRUE),
    dogcover = sum(iscover == 0, na.rm = TRUE)
    ) %>%
  ungroup() %>%
  arrange(spread,leagid)
```

```
## `summarise()` has grouped output by 'leagid'. You can override using the
## `.groups` argument.
```

```r
df1 <- as.data.frame(df1)
df1
```

```
##     leagid              spread favcover dogcover
## 1        8                 0.5        1        0
## 2        8                   1        0        1
## 3        1                 1.0        8        7
## 4        8                 1.0        7        3
## 5        1                 1.5       10        5
## 6        8                 1.5       19       19
## 7       13                 1.5      325      510
## 8        1                10.0        3        1
## 9        8                10.0        9       10
## 10       1                10.5        1        1
## 11       8                10.5        8       14
## 12       1                11.0        2        1
## 13       8                11.0        3        2
## 14       1                11.5        1        0
## 15       8                11.5        6       12
## 16       1                12.0        0        1
## 17       8                12.5        4        9
## 18       8                13.0        1        1
## 19       1                13.5        1        1
## 20       8                13.5        9       18
## 21       1                14.0        1        2
## 22       8                14.0        5        7
## 23       8                14.5       17        6
## 24       8                15.5        6        2
## 25       1                16.0        1        0
## 26       8                16.5       13       11
## 27       8                  17        1        0
## 28       8                17.0        4        2
## 29       8                17.5        4        8
## 30       8                18.0        1        0
## 31       8                18.5        4        5
## 32       8                19.5        6        6
## 33       1                 2.0        8        2
## 34       8                 2.0        2        5
```

```
## 35       1                 2.5       13       16
## 36       8                 2.5       32       41
## 37      13                 2.5        1        3
## 38       1                20.0        1        0
## 39       8                20.0        1        1
## 40       8                20.5       15        5
## 41       8 2024-08-29 00:00:00        1        0
## 42       8 2024-08-31 00:00:00        0        2
## 43       8 2024-09-07 00:00:00        2        1
## 44       8 2024-09-13 00:00:00        0        1
## 45       8 2024-09-14 00:00:00        1        1
## 46       8 2024-09-21 00:00:00        1        1
## 47       8 2024-09-28 00:00:00        1        1
## 48       8 2024-10-04 00:00:00        0        1
## 49       8 2024-10-05 00:00:00        0        2
## 50       8 2024-10-11 00:00:00        0        1
## 51       8 2024-10-12 00:00:00        0        2
## 52       8 2024-10-19 00:00:00        1        2
## 53       8 2024-10-25 00:00:00        1        0
## 54       8 2024-10-26 00:00:00        1        0
## 55       8 2024-11-02 00:00:00        0        1
## 56       8 2024-11-08 00:00:00        1        1
## 57       8 2024-11-09 00:00:00        0        1
## 58       8 2024-11-15 00:00:00        1        0
## 59       8 2024-11-16 00:00:00        0        2
## 60       8 2024-11-22 00:00:00        1        0
## 61       8 2024-11-23 00:00:00        1        1
## 62       8 2024-11-30 00:00:00        2        1
## 63       8 2024-12-06 00:00:00        1        0
## 64       8                21.0        2        3
## 65       8                21.5        5        6
## 66       8                22.0        0        1
## 67       8                22.5        0       10
## 68       8                23.0        1        0
## 69       8                23.5        7        7
## 70       8                24.0        2        3
## 71       8                24.5        3        8
## 72       8                25.0        0        1
## 73       8                25.5        3        5
## 74       8                26.5        5        1
## 75       8                27.5       10        4
## 76       8                28.5        6        6
## 77       8                29.5        3        1
## 78       1                 3.0       20       16
## 79       8                 3.0       19       22
## 80       1                 3.5       20       16
## 81       8                 3.5       21       22
## 82       8                30.5        2        2
## 83       8                31.0        1        1
## 84       8                31.5        1        2
```

```
## 85       8                32.5         0         4
## 86       8                33.5         3         6
## 87       8                34.0         1         0
## 88       8                34.5         6         2
## 89       8                35.5         5         0
## 90       8                36.5         3         2
## 91       8                37.5         1         3
## 92       8                38.5         4         1
## 93       8                39.5         0         2
## 94       1                 4.0         8         4
## 95       8                 4.0         6         7
## 96       1                 4.5         7         4
## 97       8                 4.5        17        14
## 98       8                40.5         3         2
## 99       8                41.0         1         0
## 100      8                41.5         3         0
## 101      8                42.5         4         1
## 102      8                43.5         1         1
## 103      8                44.5         3         2
## 104      8                45.5         0         1
## 105      8                46.5         2         0
## 106      8                48.0         0         1
## 107      8                48.5         2         0
## 108      8                49.5         1         1
## 109      1                 5.0         2         2
## 110      8                 5.0         0         1
## 111      1                 5.5         8         4
## 112      8                 5.5        15         9
## 113      8                50.5         0         1
## 114      8                51.5         0         1
## 115      8                53.5         0         1
## 116      1                 6.0        11         6
## 117      8                 6.0         5         3
## 118      1                 6.5         7        11
## 119      8                 6.5        22        22
## 120      1                 7.0         6         6
## 121      8                 7.0        12        12
## 122      1                 7.5         8        12
## 123      8                 7.5        23        12
## 124      1                 8.0         0         1
## 125      8                 8.0         0         2
## 126      1                 8.5         1         2
## 127      8                 8.5        14        12
## 128      1                 9.0         2         1
## 129      8                 9.0         2         2
## 130      1                 9.5         3         4
## 131      8                 9.5        12        11
```

```
library(dplyr)
library(ggplot2)
```

```r
df_nfl <- df1 %>% filter(leagid == 1)
if(!is.numeric(df_nfl$spread)) {
  df_nfl$spread <- as.numeric((as.character(df_nfl$spread)))
}
df_nfl <- df_nfl %>% arrange(spread)
# df_nfl <- df_nfl[order(df_nfl$spread,decreasing = FALSE), ]
df_nfl$spread <- factor(df_nfl$spread, levels = sort(unique(df_nfl$spread)))
# df1 <- df1 %>% filter(spread >= 0 & spread <= 100)
ggplot(df_nfl, aes(x = spread)) +
  geom_bar(aes(y = favcover, fill = 'Favorite'), stat = 'identity', position
= position_dodge()) +
  geom_bar(aes(y = dogcover, fill = 'Dog'), stat = 'identity', position =
position_dodge()) +
  labs(
    title = 'Cover Counts by Spread',
    subtitle = 'Comparing Favs and Dogs',
    x = 'Spread',
    y = 'Covers',
    fill = 'Cover Type'
  ) +
  theme_minimal() +
  theme(legend.position = 'top') +
  theme(axis.text.x = element_text(angle = 90, hjust = 1, vjust = 0.5))
```