

# R Analysis Results

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## Complete Cyclistic bike-share Analysis Results Report:

### dataset summary:

```
> sum(is.na(rides))
[1] 0
> summary(rides)
  ride_id      user_type  start_station_id end_station_id trip_duration  start_date  start_time
Length:3876054 Length:3876054      Min.   : 1.0      Min.   : 1.0      Min.   : 1      Length:3876054 Length:3876054
Class :character      Class :character 1st Qu.: 77.0 1st Qu.: 77.0 1st Qu.: 411 Class :character Class :character
Mode :character      Mode :character Median :174.0 Median :174.0 Median : 712 Mode :character Mode :character
Mean :202.4      Mean :203.3      Mean : 1479
3rd Qu.:290.0    3rd Qu.:291.0    3rd Qu.: 1289
Max. :673.0      Max. :673.0      Max. :9387024
  end_date      end_time  weekend_or  holiday_or  weekday_name  season
Length:3876054 Length:3876054 Length:3876054 Length:3876054 Length:3876054 Length:3876054
Class :character Class :character Class :character Class :character Class :character Class :character
Mode :character  Mode :character Mode :character Mode :character Mode :character Mode :character

> summarydata_df <- as.data.frame(summary(rides))
> head(rides)
  ride_id user_type start_station_id end_station_id trip_duration start_date start_time end_date end_time weekend_or holiday_or
1 25309981 casual 171 32 598 2019-10-07 02:24:09 2019-10-07 02:34:07 weekday not_holiday
2 25326097 casual 41 108 621 2019-10-07 19:15:19 2019-10-07 19:25:40 weekday not_holiday
3 25315602 casual 256 115 607 2019-10-07 11:45:27 2019-10-07 11:55:34 weekday not_holiday
4 25315330 casual 414 75 421 2019-10-07 11:21:00 2019-10-07 11:28:01 weekday not_holiday
5 25315917 casual 116 224 1450 2019-10-07 12:12:06 2019-10-07 12:36:16 weekday not_holiday
6 25324471 casual 18 212 285 2019-10-07 18:12:47 2019-10-07 18:17:33 weekday not_holiday
  weekday_name season
1 Monday Fall
2 Monday Fall
3 Monday Fall
4 Monday Fall
5 Monday Fall
6 Monday Fall
```

### First 10 Rows of Dataset:

```
> head(sorted_rides, 10)
  ride_id user_type start_station_id end_station_id trip_duration start_date start_time end_date end_time weekend_or holiday_or
1 279F7DB076FD4444 casual 270 355 9387024 2020-01-09 21:00:22 2020-04-27 12:30:46 weekday not_holiday
2 23798837 member 418 671 9056633 2019-07-16 18:17:58 2019-10-29 14:01:52 weekday not_holiday
3 377B59F0A27BB4CB casual 503 29 8636205 2020-02-02 17:18:57 2020-05-12 16:15:42 weekend not_holiday
4 25302386 casual 435 671 8585902 2019-10-06 13:57:02 2020-01-13 21:55:24 weekend not_holiday
5 23889502 member 451 671 8203637 2019-07-22 12:09:36 2019-10-25 10:56:54 weekday not_holiday
6 25487192 casual 529 671 8120385 2019-10-19 15:14:50 2020-01-21 13:54:35 weekend not_holiday
7 23710210 casual 317 671 7939448 2019-07-12 13:08:10 2019-10-12 10:32:18 weekday not_holiday
8 24107150 casual 161 592 7667469 2019-08-01 18:45:47 2019-10-29 12:36:57 weekday not_holiday
9 23661214 casual 71 117 7606871 2019-07-10 10:25:13 2019-10-06 11:26:25 weekday not_holiday
10 23648641 casual 417 205 7522062 2019-07-09 17:28:05 2019-10-04 18:55:47 weekday not_holiday
  weekday_name season
1 Thursday Winter
2 Tuesday Summer
3 Sunday Winter
4 Sunday Fall
5 Monday Summer
6 Saturday Fall
7 Friday Summer
8 Thursday Summer
9 Wednesday Summer
10 Tuesday Summer
```

Descriptive Statistics of our Data:

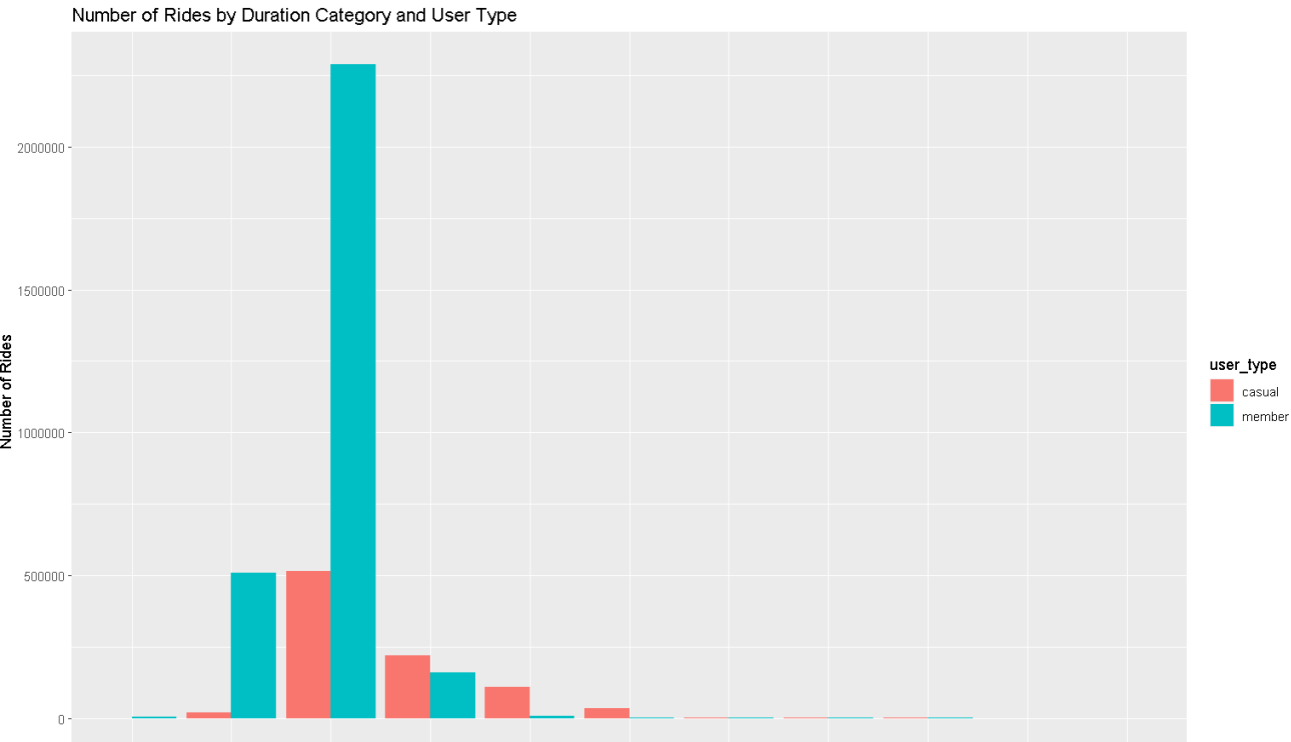
```
> kable(user_duration_summary)
```

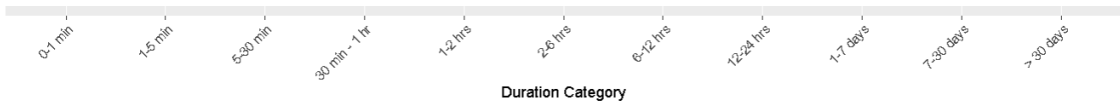
user_type	total_rides	min_duration	max_duration	median_duration	mean_duration	stddev_duration
casual	902188	2	9387024	1546	3552.5785	58417.34
member	2973866	1	9056633	589	849.7217	14478.13

Bucketing Number of Rides by segmented durations, Categorised by User Type:

```
> kable(ride_duration_counts, n = Inf)
```

duration_category	user_type	num_rides
0-1 min	casual	189
0-1 min	member	3719
1-5 min	casual	19456
1-5 min	member	509726
5-30 min	casual	513399
5-30 min	member	2288578
30 min - 1 hr	casual	220127
30 min - 1 hr	member	159852
1-2 hrs	casual	109038
1-2 hrs	member	8416
2-6 hrs	casual	35045
2-6 hrs	member	1958
6-12 hrs	casual	1796
6-12 hrs	member	584
12-24 hrs	casual	1631
12-24 hrs	member	594
1-7 days	casual	1116
1-7 days	member	376
7-30 days	casual	279
7-30 days	member	44
> 30 days	casual	112
> 30 days	member	19

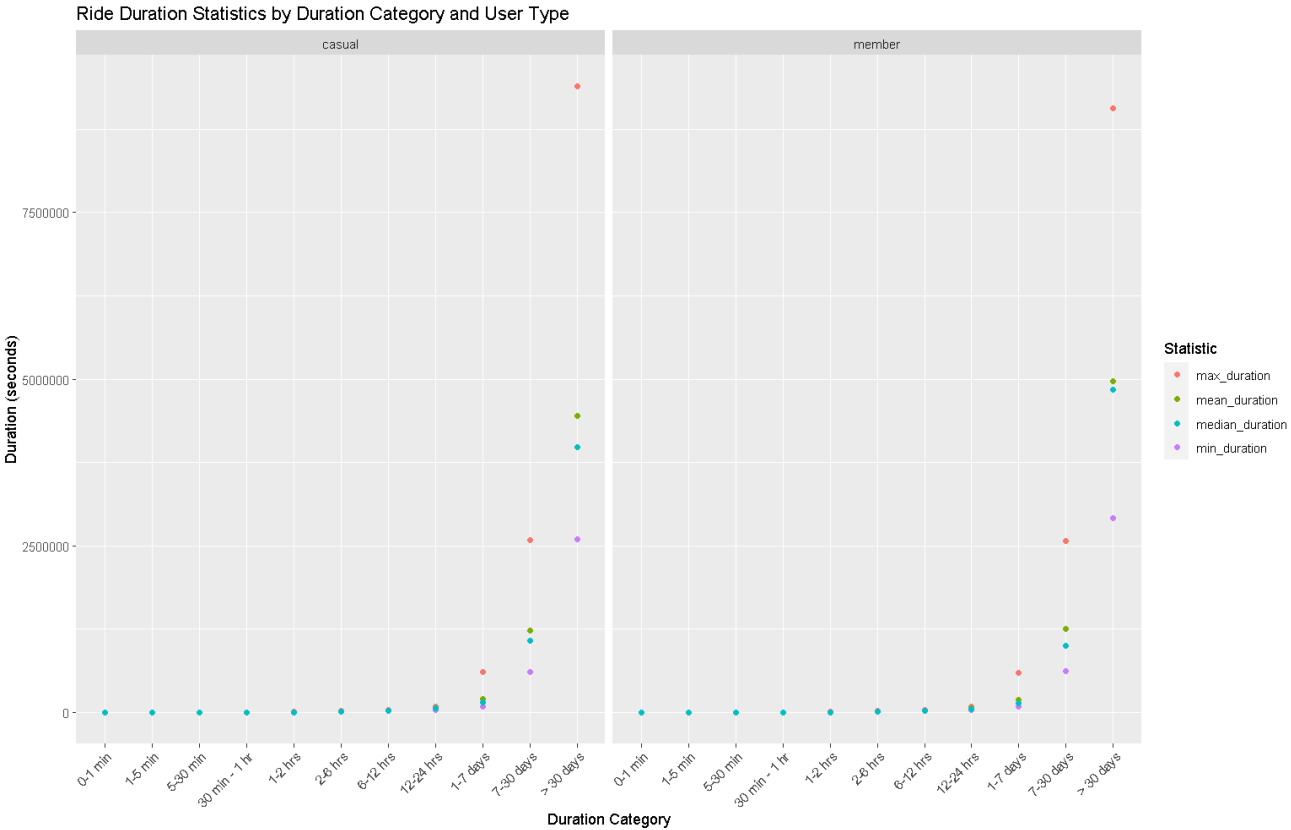




Descriptive statistics of Number of Rides segmented by Duration intervals, categorised by User Type:

```
> kable(ride_duration_stats, n = Inf)
```

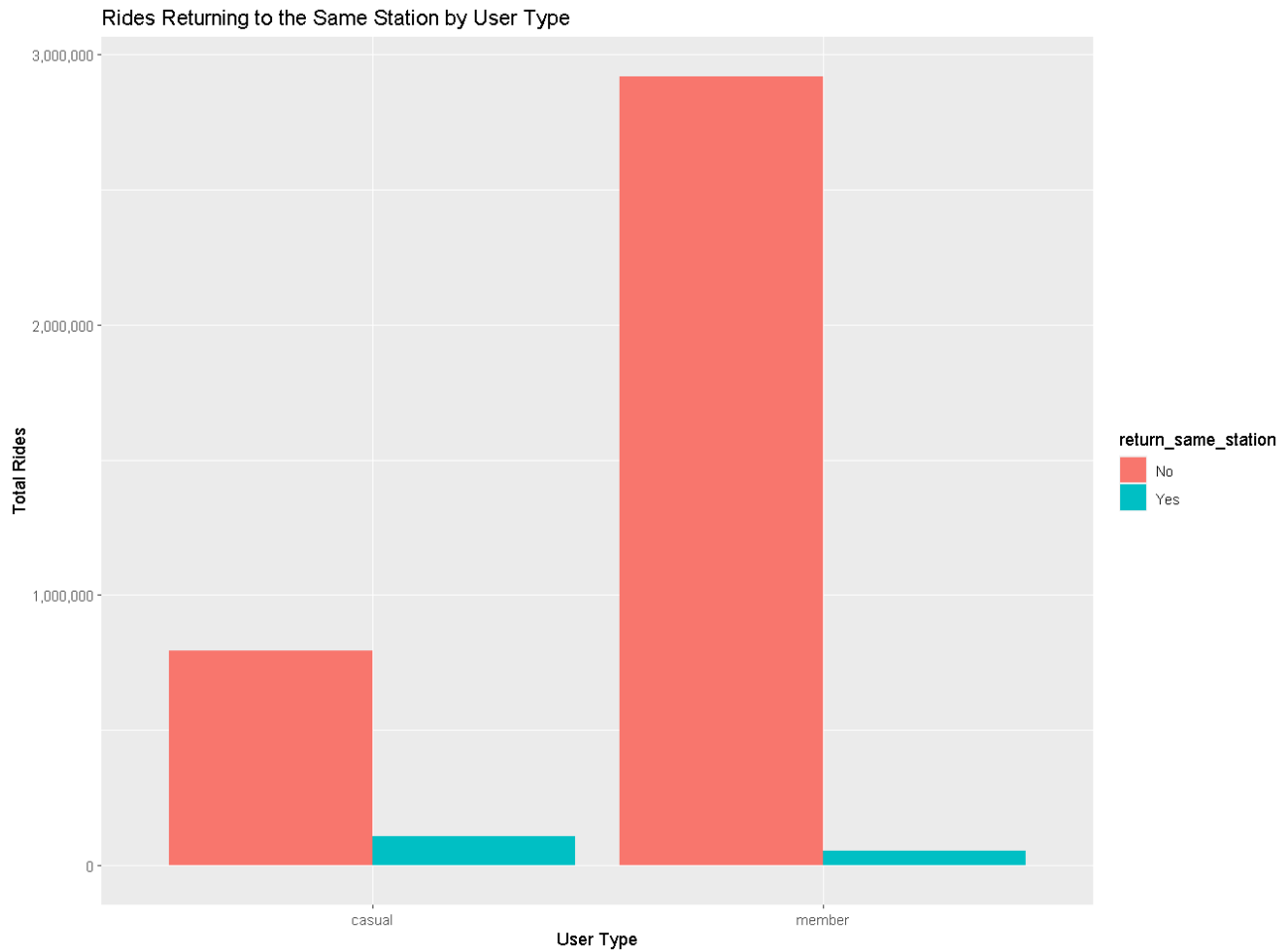
duration_category	user_type	num_rides	min_duration	max_duration	mean_duration	median_duration
:-----	:-----	-----	-----	-----	-----	-----
0-1 min	casual	189	2	59	2.935450e+01	26.0
0-1 min	member	3719	1	59	2.103415e+01	17.0
1-5 min	casual	19456	61	299	2.154139e+02	231.0
1-5 min	member	509726	60	299	2.184684e+02	226.0
5-30 min	casual	513399	300	1799	1.056559e+03	1046.0
5-30 min	member	2288578	300	1799	7.544096e+02	655.0
30 min - 1 hr	casual	220127	1800	3599	2.512149e+03	2418.0
30 min - 1 hr	member	159852	1800	3599	2.217604e+03	2120.0
1-2 hrs	casual	109038	3600	7199	4.958200e+03	4766.0
1-2 hrs	member	8416	3600	7195	4.660500e+03	4384.0
2-6 hrs	casual	35045	7200	21594	9.730429e+03	8937.0
2-6 hrs	member	1958	7201	21594	1.128084e+04	9996.0
6-12 hrs	casual	1796	21608	43195	3.045848e+04	29452.0
6-12 hrs	member	584	21673	43199	3.079688e+04	30582.0
12-24 hrs	casual	1631	43206	86348	6.240020e+04	61120.0
12-24 hrs	member	594	43235	86385	5.953577e+04	56528.5
1-7 days	casual	1116	86400	604007	2.022007e+05	156760.0
1-7 days	member	376	86448	595188	1.870716e+05	144171.0
7-30 days	casual	279	608557	2591131	1.230520e+06	1075254.0
7-30 days	member	44	625452	2577374	1.250812e+06	1000646.0
> 30 days	casual	112	2599859	9387024	4.449859e+06	3977825.5
> 30 days	member	19	2910775	9056633	4.972244e+06	4840300.0



Analysing number of Rides returning to the same station:

```
> kable(same_station_by_user)
```

user_type	return_same_station	total_rides
casual	No	793959
casual	Yes	108229
member	No	2920414
member	Yes	53452

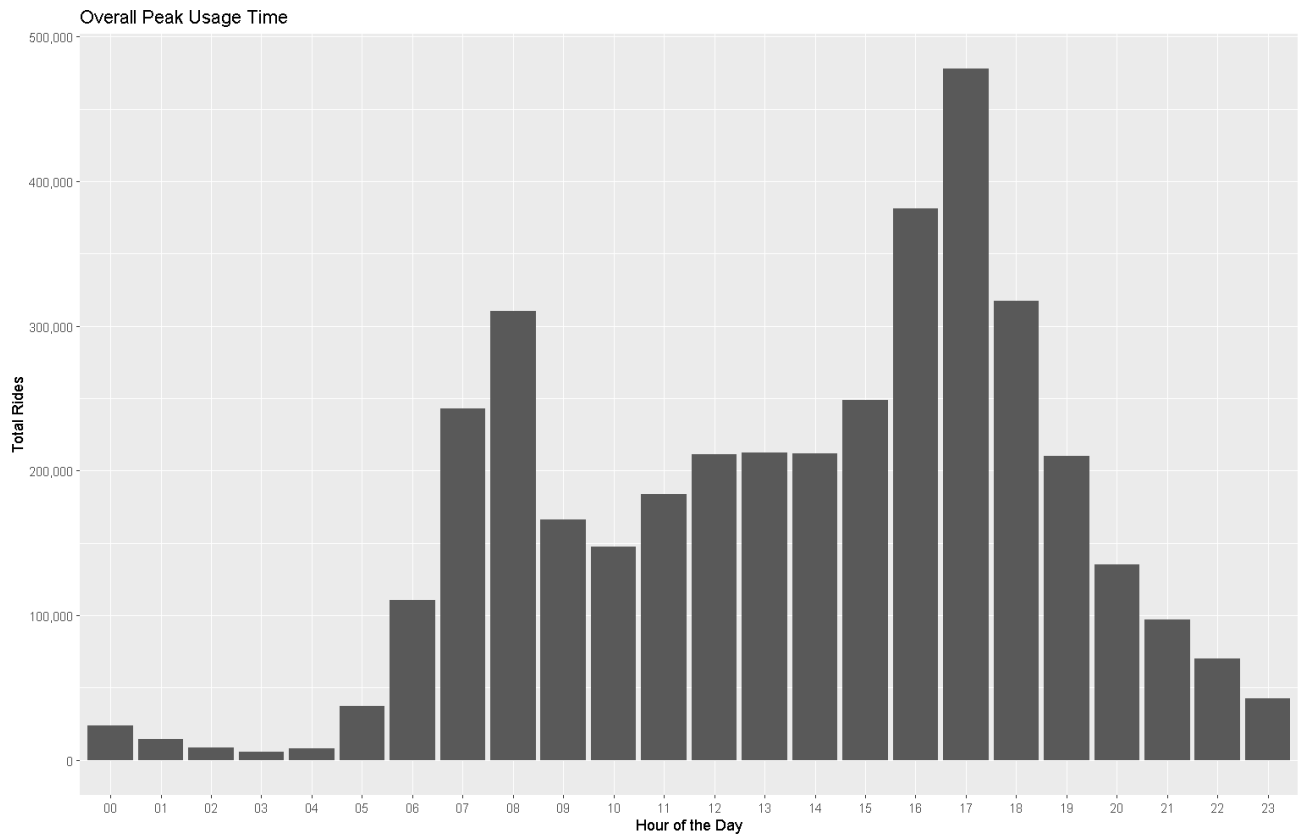


Analyzing number of Rides per Hour of day:

```
> kable(overall_peak_time)
```

hour_of_day	total_rides
00	24112
01	14475
02	8591
03	5528
04	7882
05	37133
06	110385
07	242904
08	310468
09	166126
10	147662
11	183654
12	211175
13	212642
14	211638
15	249029
16	381232
17	478086
18	317530
19	210437
20	135057
21	87206

```
| 21 | 97296 |
| 22 | 70221 |
| 23 | 42791 |
```

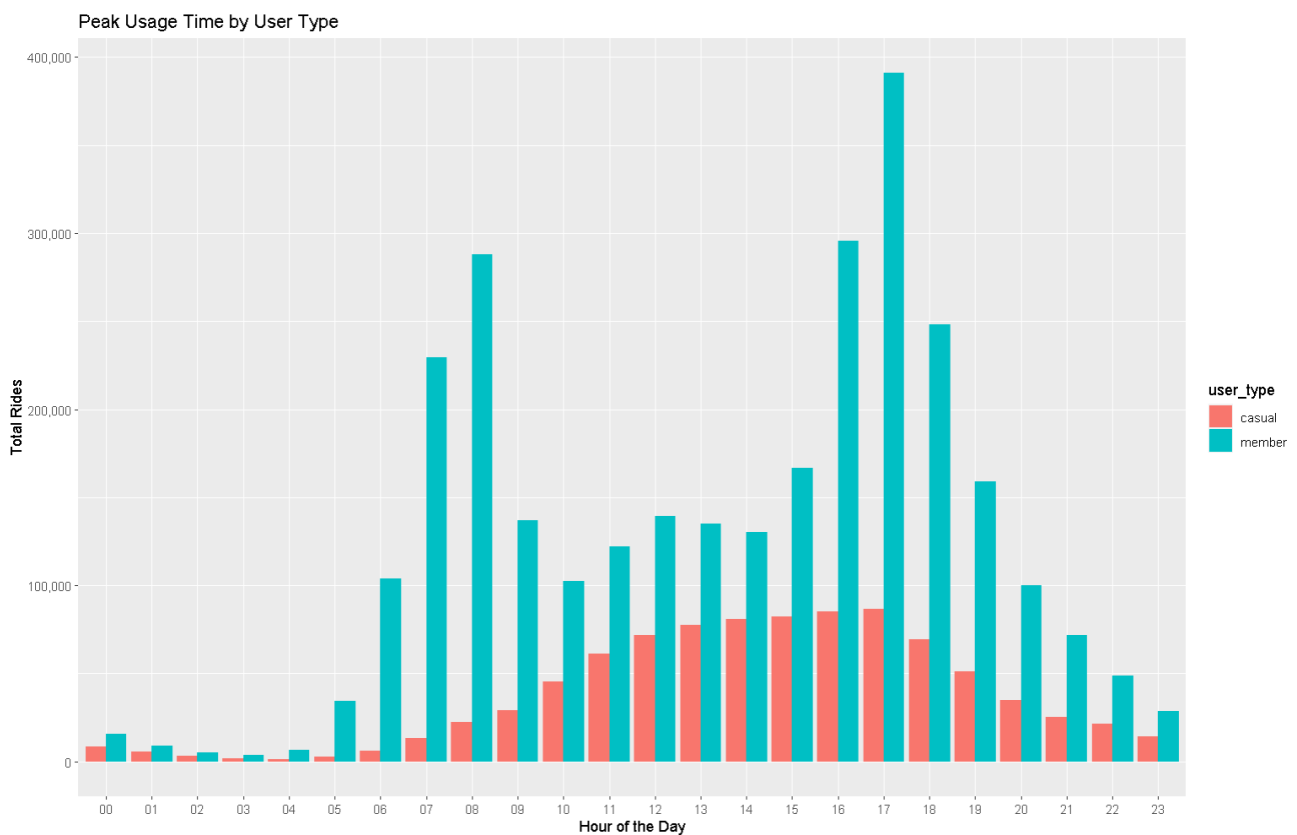


## Analyzing number of Rides per Hour of day, categorized by User Type:

```
> kable(user_peak_time)
```

hour_of_day	user_type	total_rides
:-----	:-----	-----
00	casual	8363
00	member	15749
01	casual	5501
01	member	8974
02	casual	3361
02	member	5230
03	casual	1982
03	member	3546
04	casual	1196
04	member	6686
05	casual	2690
05	member	34443
06	casual	6291
06	member	104094
07	casual	13302
07	member	229602
08	casual	22304
08	member	288164
09	casual	29057
09	member	137069

10	casual	45374
10	member	102288
11	casual	61323
11	member	122331
12	casual	71626
12	member	139549
13	casual	77406
13	member	135236
14	casual	81143
14	member	130495
15	casual	82461
15	member	166568
16	casual	85398
16	member	295834
17	casual	86809
17	member	391277
18	casual	69297
18	member	248233
19	casual	51181
19	member	159256
20	casual	34930
20	member	100127
21	casual	25433
21	member	71863
22	casual	21421
22	member	48800
23	casual	14339
23	member	28452



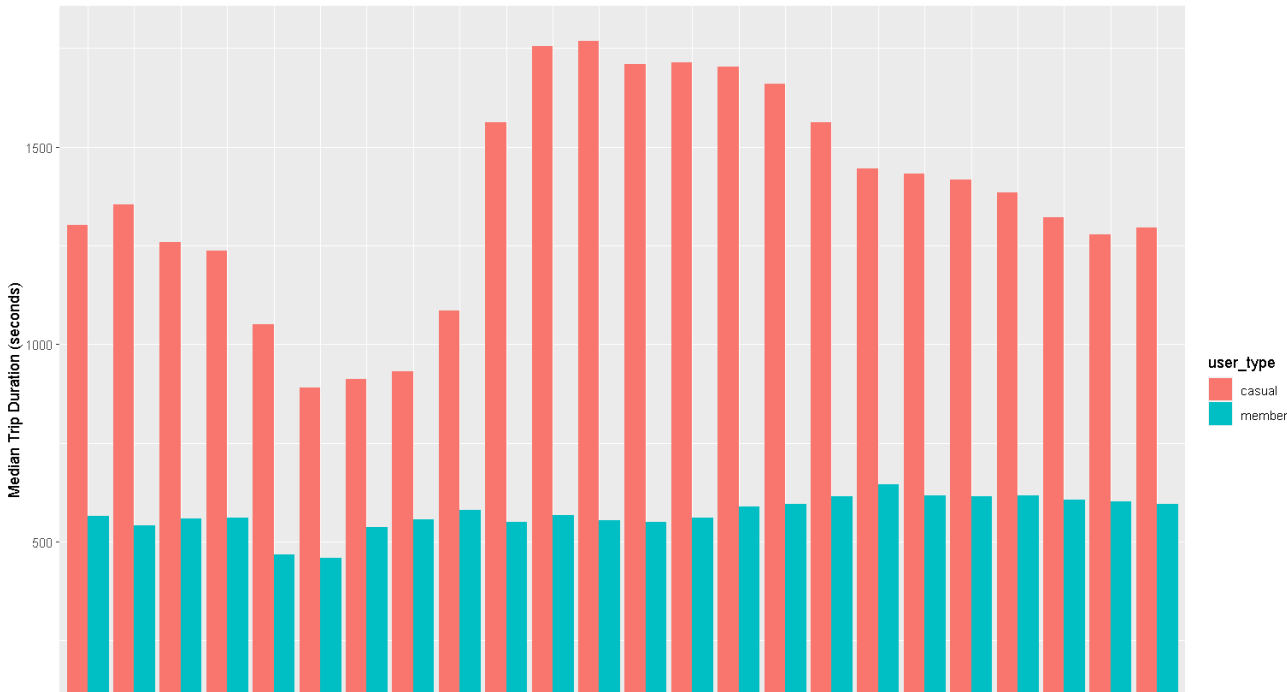
Analyzing Descriptive Statistics of Rides per Hour of day, categorized by User Type:

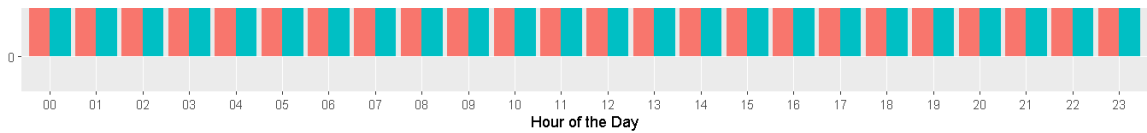
```
> kable(rides_by_hour_and_stats)
```

user\_type | hour\_of\_day | total\_rides | min\_duration | max\_duration | median\_duration | mean\_duration | stddev\_duration |

user_type	hour_of_day	total_rides	min_duration	max_duration	median_duration	mean_duration	stddev_duration
casual	00	8363	64	6419224	1303.0	6256.3352	117731.040
casual	01	5501	65	4015949	1354.0	6224.9376	93341.231
casual	02	3361	72	4314650	1258.0	6232.0678	96981.837
casual	03	1982	69	3736093	1237.5	10215.0040	136540.553
casual	04	1196	119	3939702	1050.5	7591.6756	116868.056
casual	05	2690	61	6940545	889.5	5940.7361	140624.217
casual	06	6291	8	5470866	912.0	3985.6463	83591.404
casual	07	13302	12	1232370	931.0	1931.7193	13427.515
casual	08	22304	45	7039405	1086.0	3288.9320	65103.513
casual	09	29057	11	6508144	1563.0	4091.3353	69506.626
casual	10	45374	6	7606871	1756.0	4167.3703	71389.936
casual	11	61323	11	3711293	1769.0	3493.9945	38296.513
casual	12	71626	3	4482201	1710.0	3325.0388	38461.728
casual	13	77406	3	8585902	1713.0	3459.2451	51632.204
casual	14	81143	7	6131921	1702.0	3555.4534	49333.895
casual	15	82461	5	8120385	1660.0	3464.8288	54410.116
casual	16	85398	6	5937966	1562.0	3264.2938	49420.008
casual	17	86809	8	8636205	1446.0	3604.0941	70841.825
casual	18	69297	11	7667469	1433.0	3108.8710	51904.218
casual	19	51181	5	4303053	1418.0	3212.3062	45237.999
casual	20	34930	7	7420632	1385.0	3702.1029	66553.836
casual	21	25433	2	9387024	1322.0	3983.7454	91003.778
casual	22	21421	61	6951586	1279.0	3777.5933	72088.883
casual	23	14339	38	1446792	1295.0	2981.2244	23529.210
member	00	15749	2	1777405	565.0	1025.0394	15268.872
member	01	8974	7	240746	542.0	894.0767	4153.543
member	02	5230	5	3327475	559.5	1508.3547	46156.528
member	03	3546	4	1673867	560.0	1562.5403	30587.805
member	04	6686	3	57889	467.0	668.1801	1029.250
member	05	34443	2	128871	460.0	658.3845	1374.866
member	06	104094	2	1320488	536.0	719.8439	4837.321
member	07	229602	2	5281050	557.0	765.4666	13273.233
member	08	288164	2	5189459	581.0	777.9952	13168.722
member	09	137069	2	4840300	551.0	793.6294	13837.664
member	10	102288	2	2083320	567.0	807.3093	6988.472
member	11	122331	2	431205	555.0	780.0241	2175.010
member	12	139549	2	8203637	549.0	936.5125	28521.837
member	13	135236	2	3615915	561.0	832.1998	10289.192
member	14	130495	2	1240816	589.0	850.0198	4780.986
member	15	166568	1	6028601	595.0	870.3399	15536.764
member	16	295834	1	4396972	615.0	848.7064	11348.586
member	17	391277	2	5627611	645.0	893.7699	13959.484
member	18	248233	2	9056633	617.0	906.5344	19431.581
member	19	159256	2	5225169	615.0	965.1814	22393.468
member	20	100127	1	2003220	617.0	895.8905	9144.102
member	21	71863	2	2910775	607.0	911.2258	11968.312
member	22	48800	2	1279600	601.0	859.0320	6507.148
member	23	28452	2	583871	596.0	871.5833	4669.507

Median Trip Duration by Hour of the Day





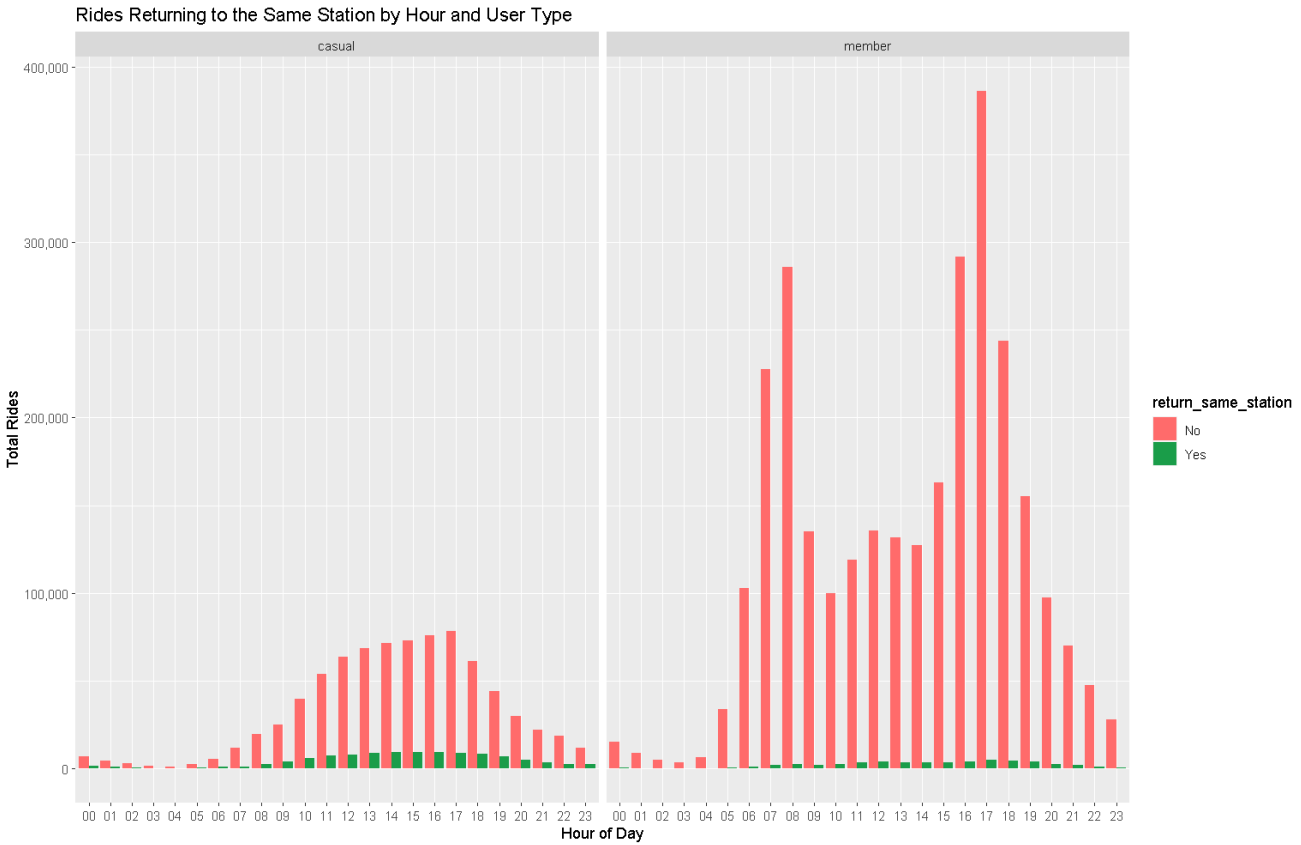
Analysing number of rides that return to the start station, per Hour of day, categorized by User Type:

```
> kable(same_station_by_hour)
```

user_type	hour_of_day	return_same_station	total_rides
casual	00	No	6709
casual	00	Yes	1654
casual	01	No	4343
casual	01	Yes	1158
casual	02	No	2757
casual	02	Yes	604
casual	03	No	1685
casual	03	Yes	297
casual	04	No	1020
casual	04	Yes	176
casual	05	No	2340
casual	05	Yes	350
casual	06	No	5484
casual	06	Yes	807
casual	07	No	12043
casual	07	Yes	1259
casual	08	No	19838
casual	08	Yes	2466
casual	09	No	25211
casual	09	Yes	3846
casual	10	No	39535
casual	10	Yes	5839
casual	11	No	54109
casual	11	Yes	7214
casual	12	No	63715
casual	12	Yes	7911
casual	13	No	68523
casual	13	Yes	8883
casual	14	No	71551
casual	14	Yes	9592
casual	15	No	72920
casual	15	Yes	9541
casual	16	No	76049
casual	16	Yes	9349
casual	17	No	78178
casual	17	Yes	8631
casual	18	No	61112
casual	18	Yes	8185
casual	19	No	44158
casual	19	Yes	7023
casual	20	No	30046
casual	20	Yes	4884
casual	21	No	21892
casual	21	Yes	3541
casual	22	No	18729
casual	22	Yes	2692
casual	23	No	12012
casual	23	Yes	2327
member	00	No	15330
member	00	Yes	419
member	01	No	8683
member	01	Yes	291
member	02	No	5082
member	02	Yes	148
member	03	No	3435
member	03	Yes	111
member	04	No	6573
member	04	Yes	113
member	05	No	33921
member	05	Yes	522
member	06	No	102985
member	06	Yes	1109
member	07	No	227811
member	07	Yes	1791
member	08	No	285862
member	08	Yes	2302
member	09	No	134970
member	09	Yes	2099
member	10	No	99818
member	10	Yes	2470
member	11	No	119013



member	11	Yes	3318
member	12	No	135416
member	12	Yes	4133
member	13	No	131747
member	13	Yes	3489
member	14	No	127148
member	14	Yes	3347
member	15	No	162999
member	15	Yes	3569
member	16	No	291864
member	16	Yes	3970
member	17	No	386171
member	17	Yes	5106
member	18	No	243538
member	18	Yes	4695
member	19	No	155255
member	19	Yes	4001
member	20	No	97387
member	20	Yes	2740
member	21	No	70061
member	21	Yes	1802
member	22	No	47638
member	22	Yes	1162
member	23	No	27707
member	23	Yes	745



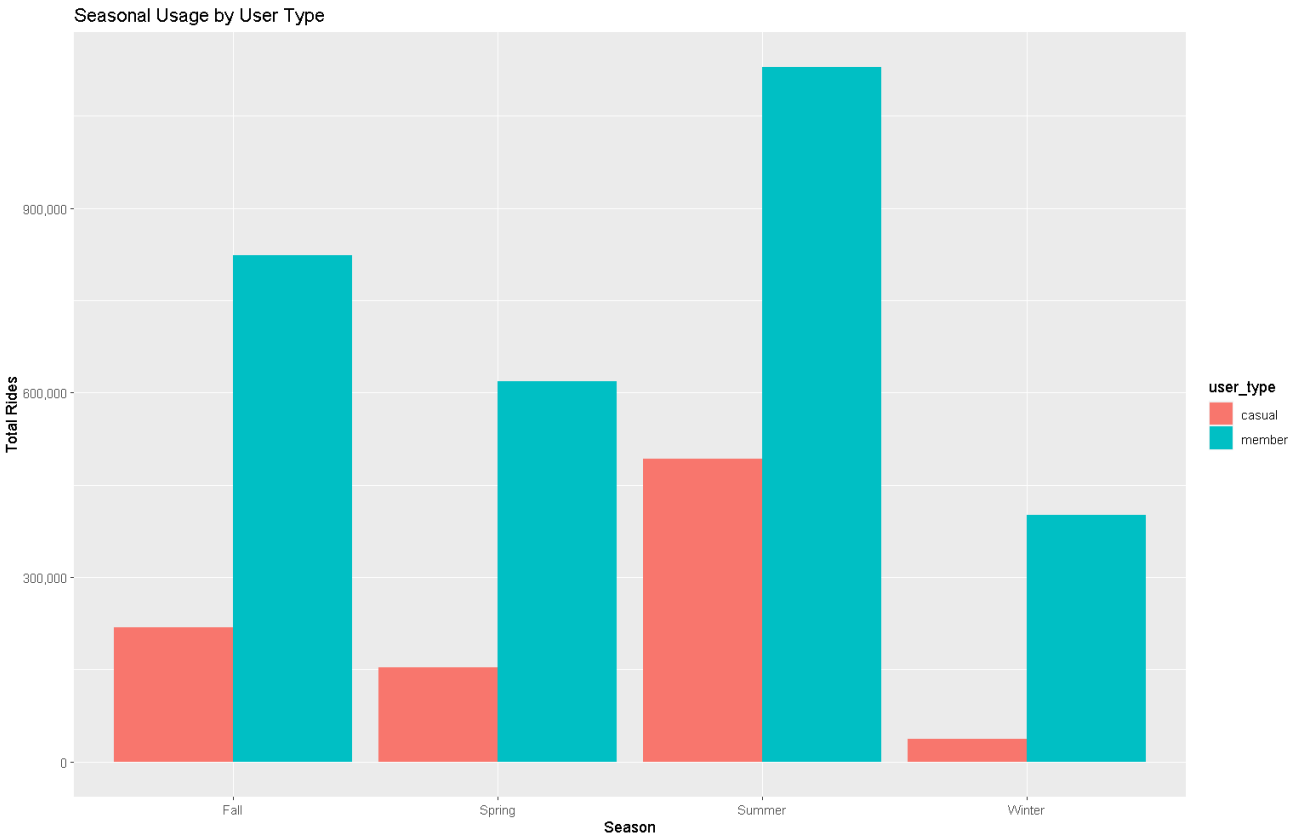
Seasonal Analysis of Rides :

```
> kable(rides_by_season)

|season| total_rides|
|:-----|:-----|
|Fall   | 1042181|
|Spring | 772975|
|Summer | 1622894|
|winter | 438004|

|user_type|season| total_rides|
|:-----|:-----|:-----|
```

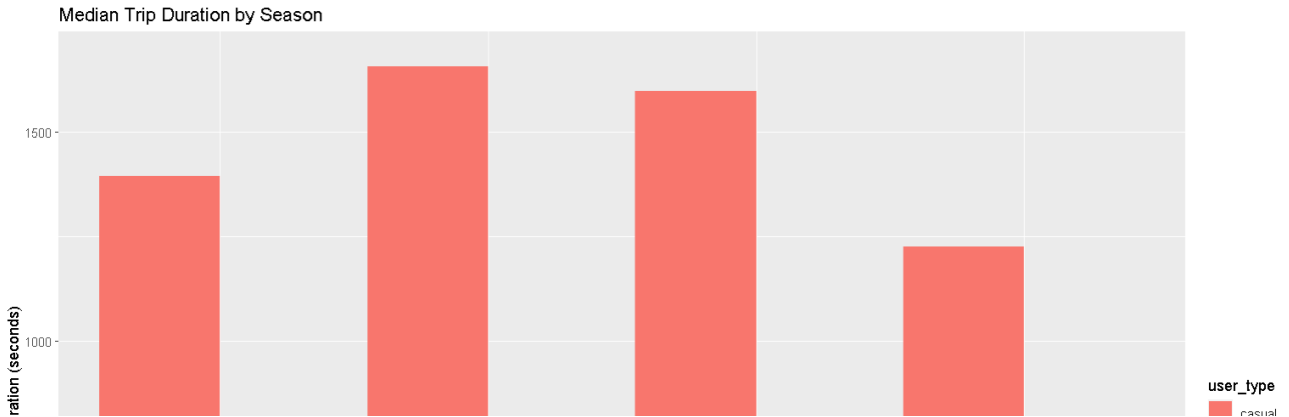
casual	Fall	218937
casual	Spring	153983
casual	Summer	492739
casual	Winter	36529
member	Fall	823244
member	Spring	618992
member	Summer	1130155
member	Winter	401475

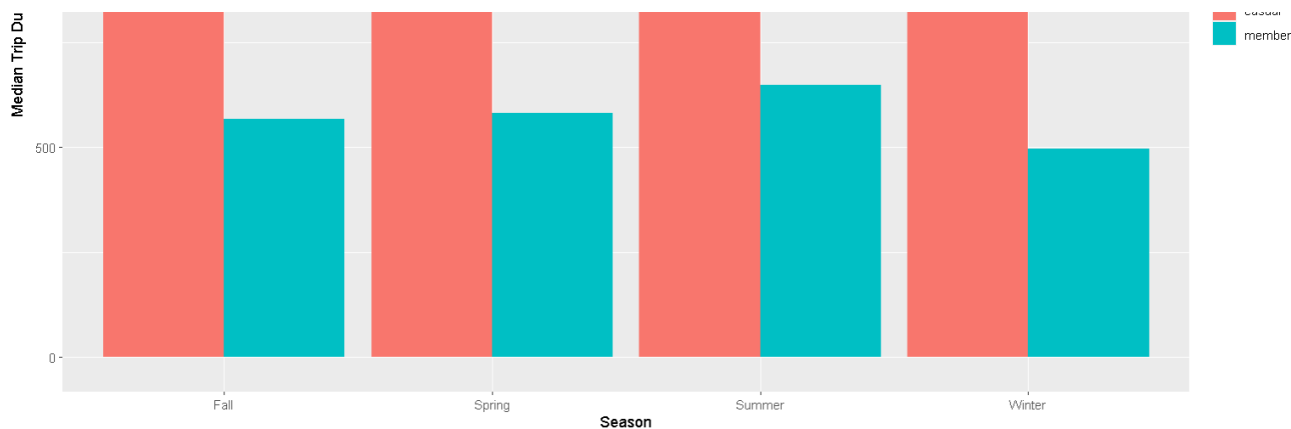


Descriptive Statistics of Seasonal Rides Analysis, categorized by User Type:

```
> kable(rides_by_season_and_stats)
```

user_type	season	total_rides	min_duration	max_duration	median_duration	mean_duration	stddev_duration
casual	Fall	218937	61	8585902	1395	3321.5181	51875.415
casual	Spring	153983	3	4757640	1657	3256.7740	34206.640
casual	Summer	492739	61	7939448	1598	3531.2691	60814.421
casual	Winter	36529	2	9387024	1225	6471.8079	115438.166
member	Fall	823244	61	5169622	567	803.6614	11032.546
member	Spring	618992	1	5627611	582	828.9518	10686.909
member	Summer	1130155	61	9056633	650	945.8206	19106.181
member	Winter	401475	1	4753051	496	705.6748	9968.303

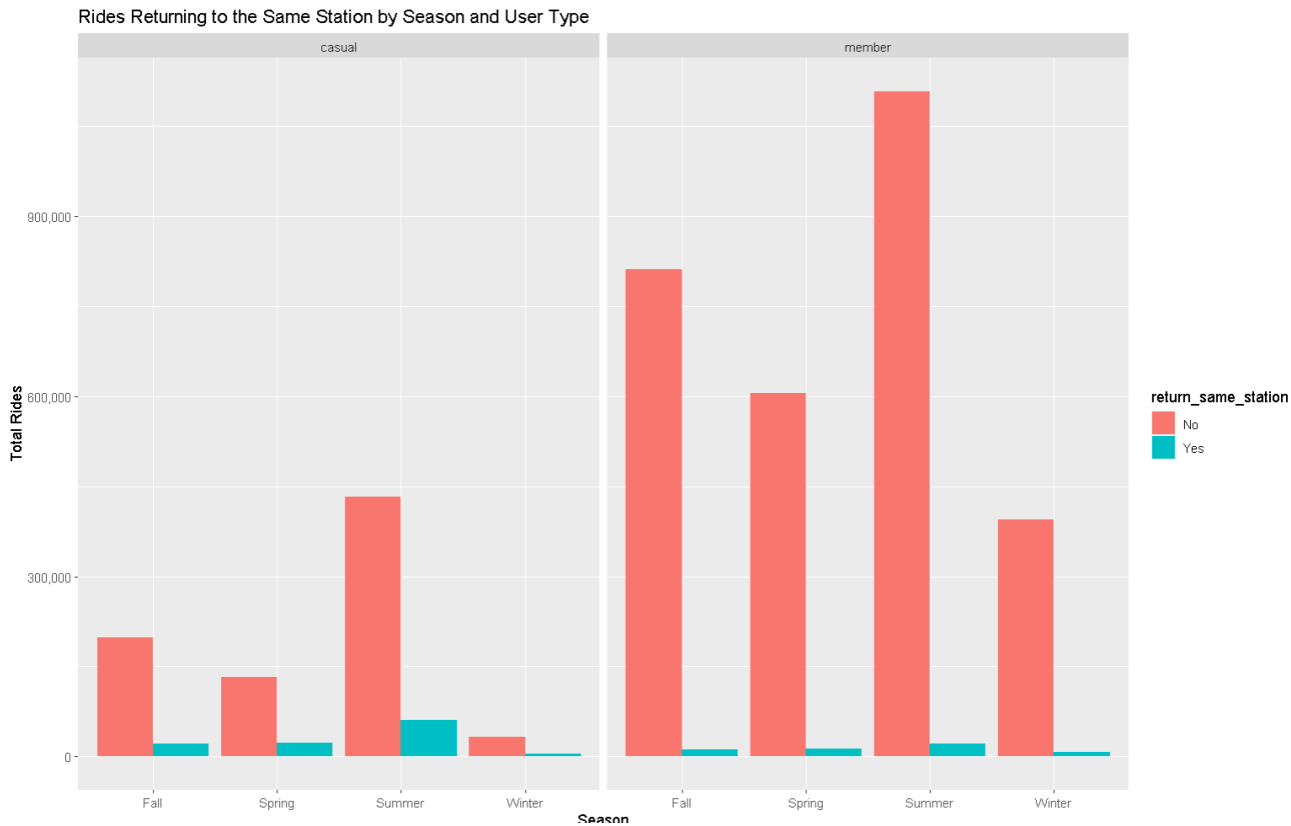




## Seasonal Rides returning to start station Analysis, categorized by User Type:

```
> kable(same_station_by_season)
```

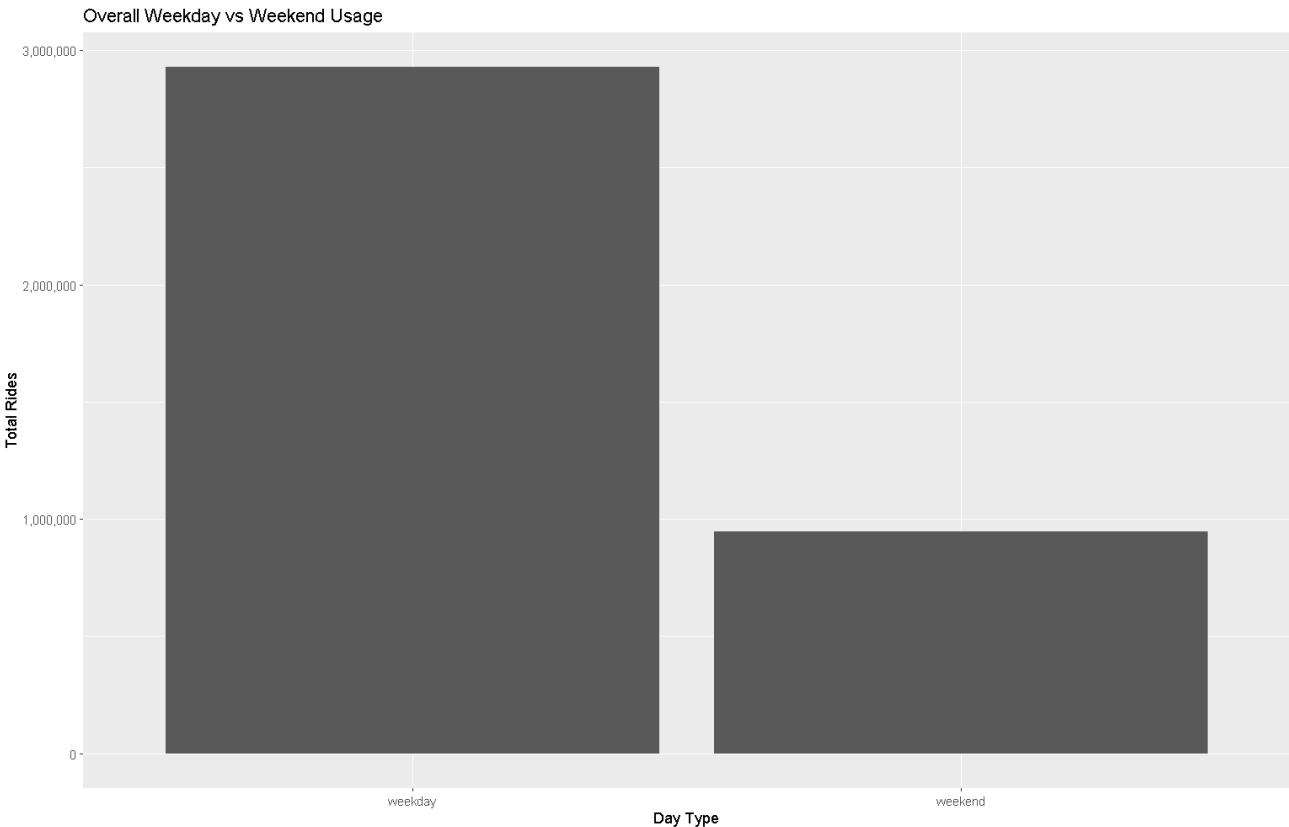
user_type	season	return_same_station	total_rides
casual	Fall	No	197811
casual	Fall	Yes	21126
casual	Spring	No	131588
casual	Spring	Yes	22395
casual	Summer	No	432317
casual	Summer	Yes	60422
casual	Winter	No	32243
casual	Winter	Yes	4286
member	Fall	No	811563
member	Fall	Yes	11681
member	Spring	No	605913
member	Spring	Yes	13079
member	Summer	No	1108473
member	Summer	Yes	21682
member	Winter	No	394465
member	Winter	Yes	7010



Weekend/Weekday Rides Analysis:

```
> kable(overall_weekday_weekend)
```

weekend_or	total_rides
weekday	2929283
weekend	946771

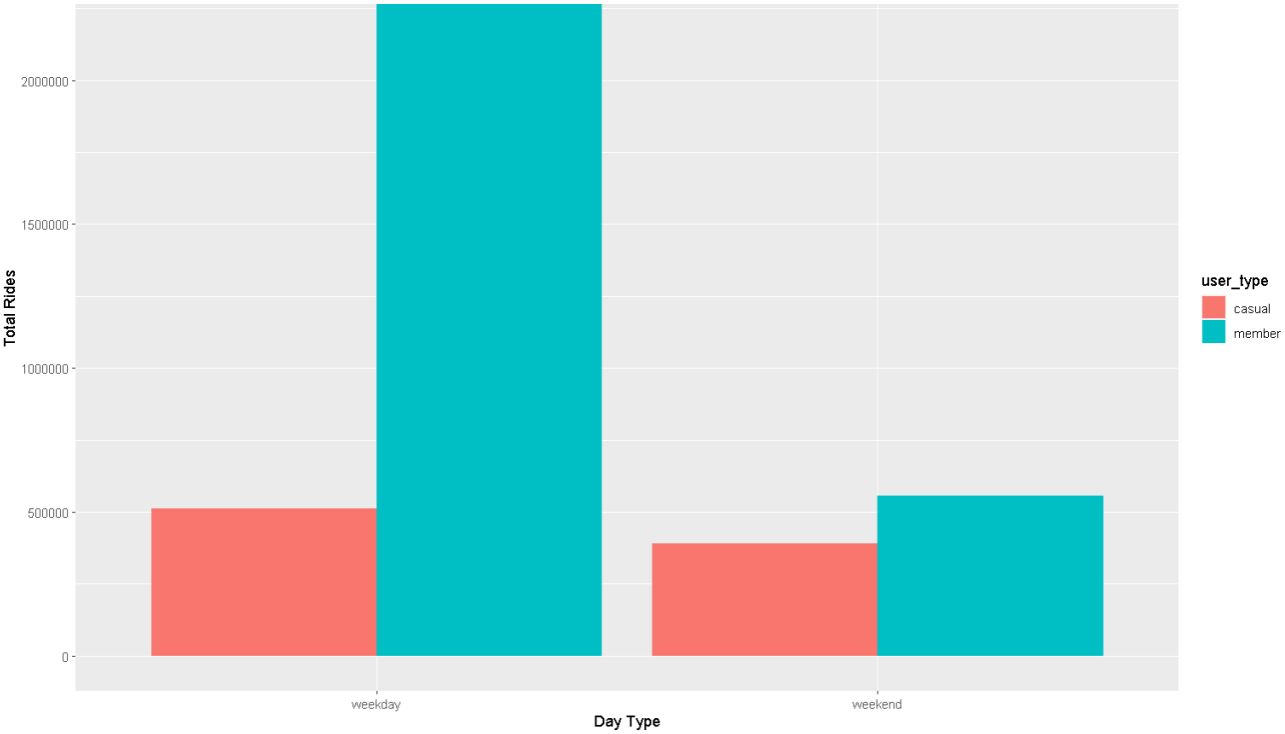


Weekend/WeekdayRides Analysis, Categorized by User Type:

```
> kable(user_weekday_weekend)
```

user_type	weekend_or	total_rides
casual	weekday	511346
casual	weekend	390842
member	weekday	2417937
member	weekend	555929

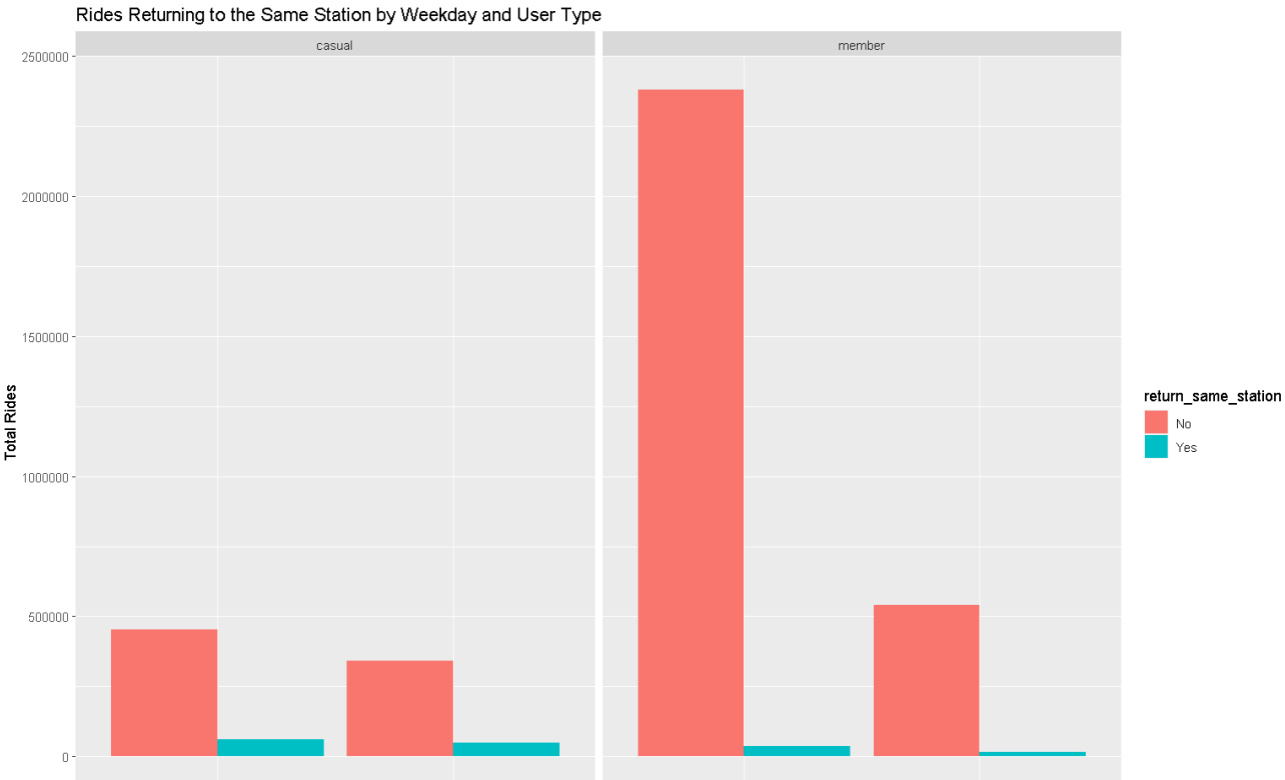




Weekend/Weekday Rides returning to Same station Analysis, Categorized by User Type:

```
> kable(same_station_by_weekday)
```

user_type	weekend_or	return_same_station	total_rides
casual	weekday	No	451433
casual	weekday	Yes	59913
casual	weekend	No	342526
casual	weekend	Yes	48316
member	weekday	No	2381030
member	weekday	Yes	36907
member	weekend	No	539384
member	weekend	Yes	16545



Daily Rides Analysis, Categorized by User Type:

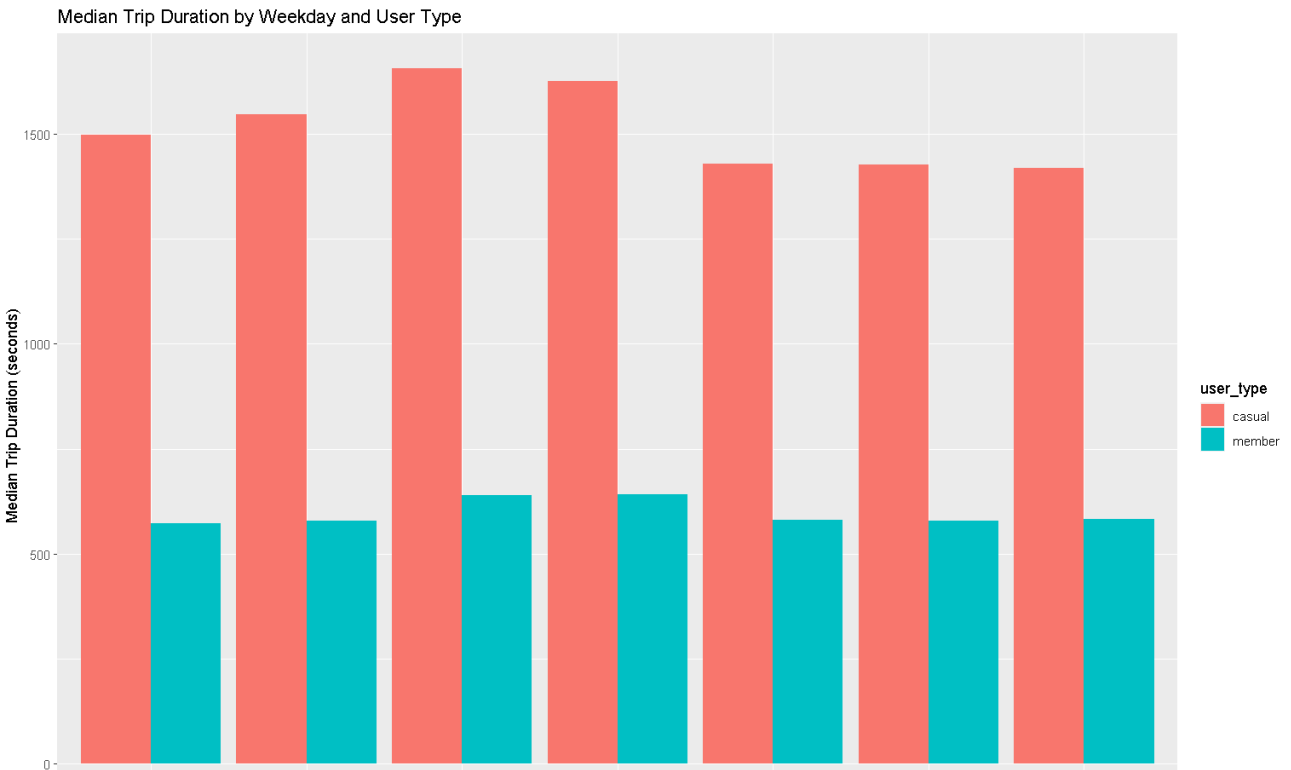
```
> kable(rides_by_weekday)
```

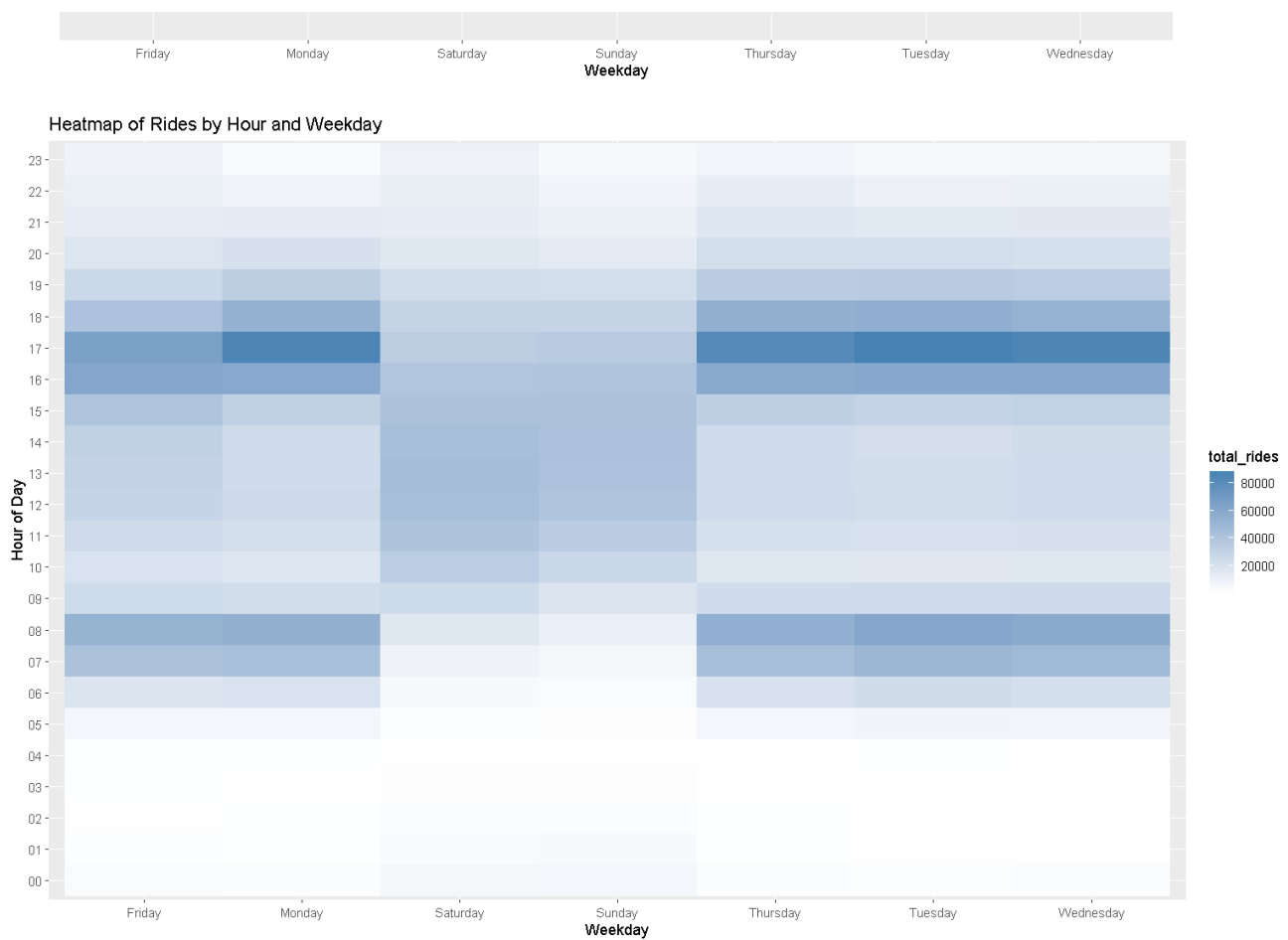
user_type	weekday_name	total_rides
member	Tuesday	508445
member	Wednesday	500329
member	Thursday	484177
member	Monday	472196
member	Friday	452790
member	Saturday	287958
member	Sunday	267971
casual	Saturday	209543
casual	Sunday	181299
casual	Friday	122404
casual	Monday	103296
casual	Thursday	102679
casual	Wednesday	92457
casual	Tuesday	90510

Descriptive Statistics of Daily Rides, Categorized by User Type:

```
> kable(rides_by_weekday_and_stats)
```

user_type	weekday_name	total_rides	min_duration	max_duration	median_duration	mean_duration	stddev_duration
casual	Friday	122404	2	7939448	1499	3773.6518	68607.953
casual	Monday	103296	8	7247750	1547	3372.0315	51815.715
casual	Saturday	209543	3	8120385	1658	3331.8338	43264.863
casual	Sunday	181299	3	8636205	1626	3581.1876	57676.879
casual	Thursday	102679	11	9387024	1430	3682.7777	66018.899
casual	Tuesday	90510	11	7522062	1427	3596.1227	60798.004
casual	Wednesday	92457	6	7606871	1419	3718.5839	69598.748
member	Friday	452790	1	4840300	573	824.2674	12282.533
member	Monday	472196	2	8203637	579	842.2905	17732.613
member	Saturday	287958	1	4809091	640	968.7362	15790.659
member	Sunday	267971	2	2910775	641	918.8584	8789.527
member	Thursday	484177	1	6028601	581	823.6426	12900.407
member	Tuesday	508445	2	9056633	579	825.8680	16994.756
member	Wednesday	500329	2	5628778	583	823.7228	13159.770



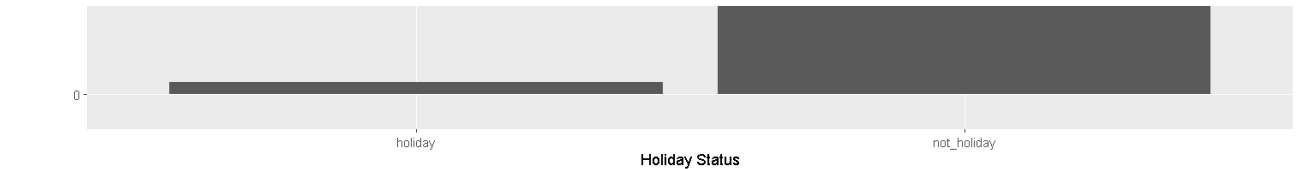


Holiday Rides Analysis:

```
> kable(overall_holiday_usage)
```

holiday_or	total_rides
:-----	-----:
holiday	64740
not_holiday	3811314

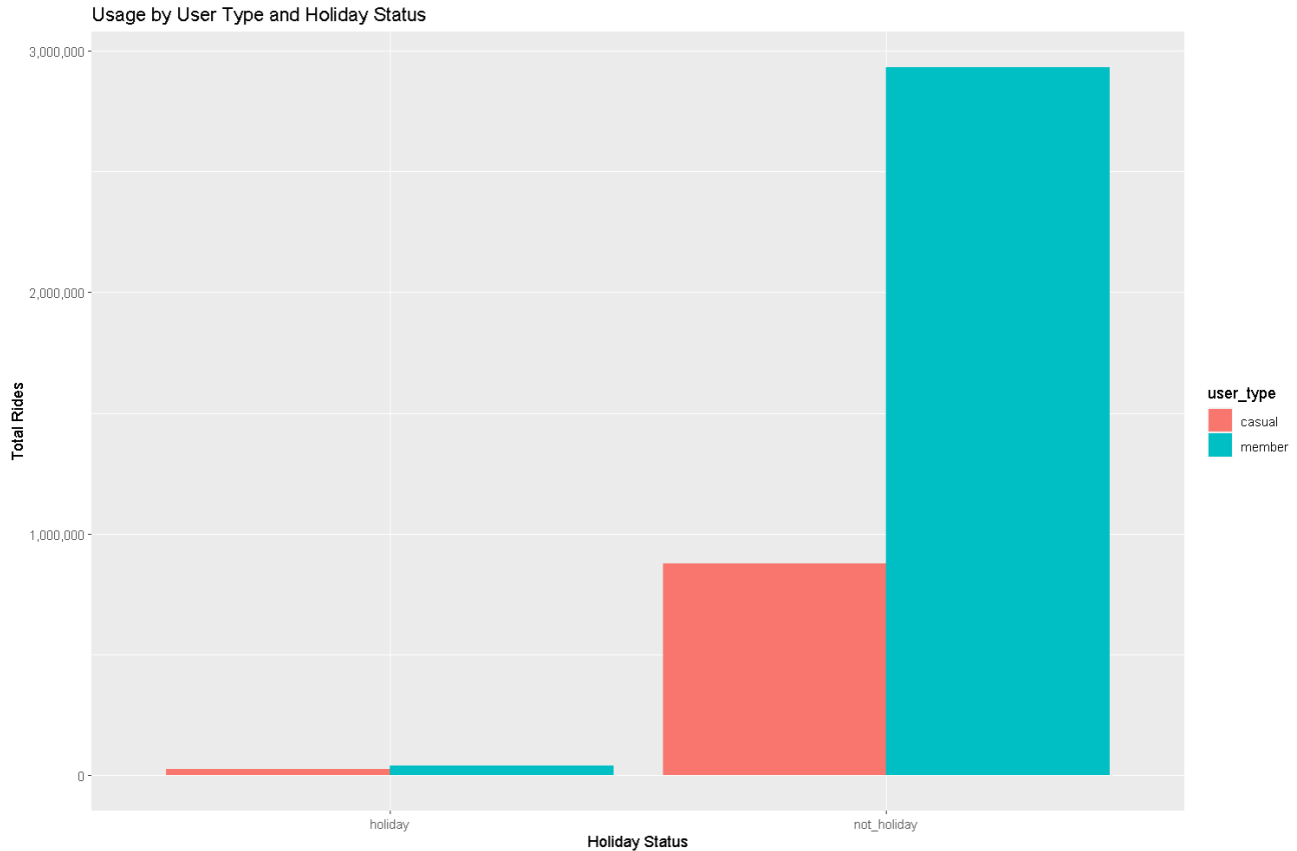




Holiday Rides Analysis, Categorized by User Type :

```
> kable(user_holiday_usage)
```

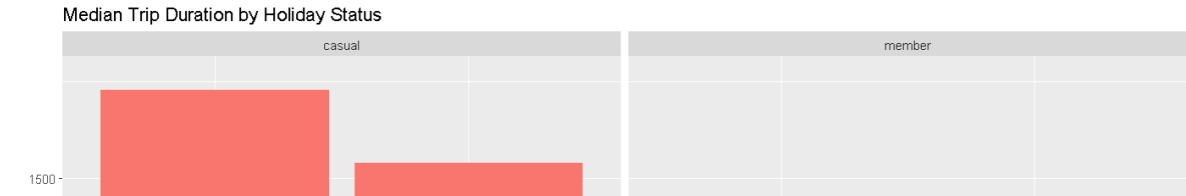
user_type	holiday_or	total_rides
casual	holiday	24960
casual	not_holiday	877228
member	holiday	39780
member	not_holiday	2934086



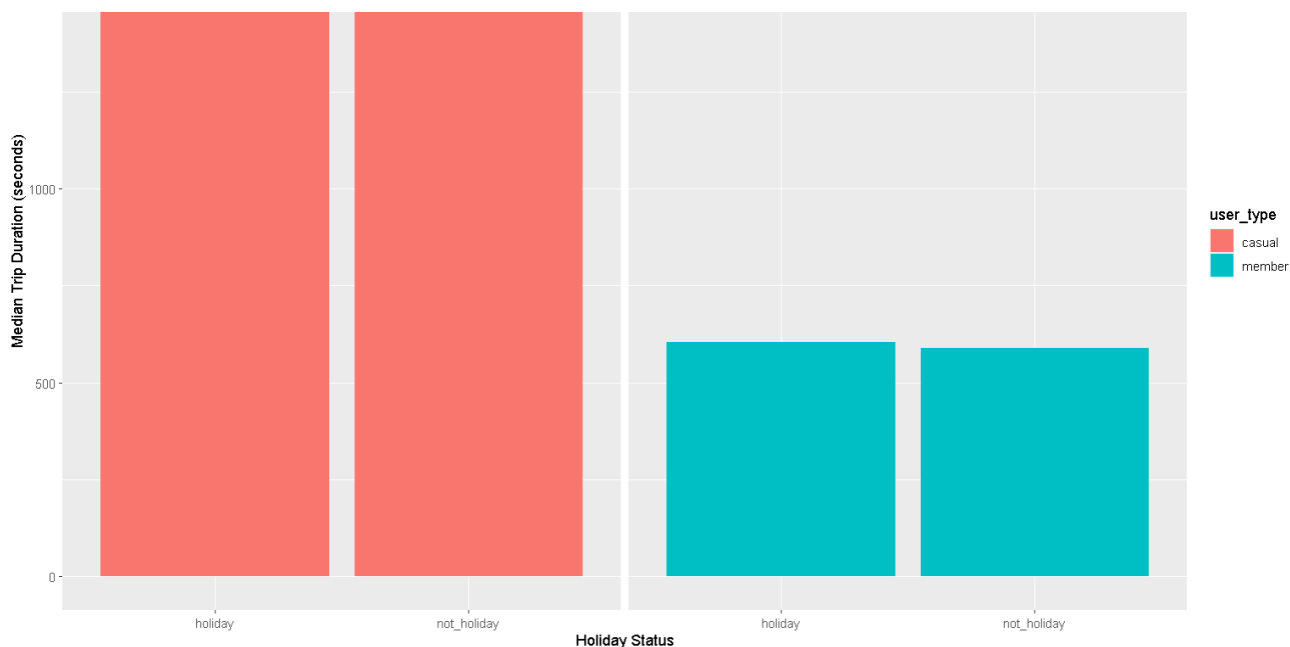
Descriptive Statistics of Holiday Rides Analysis, Categorized by User Type :

```
> kable(rides_by_holiday_and_stats)
```

user_type	holiday_or	total_rides	min_duration	max_duration	median_duration	mean_duration	stddev_duration
casual	holiday	24960	16	2241642	1727.5	3125.9586	24292.55
casual	not_holiday	877228	2	9387024	1540.0	3564.7173	59100.67
member	holiday	39780	2	625452	605.0	876.7978	3942.12
member	not_holiday	2934086	1	9056633	589.0	849.3546	14568.71



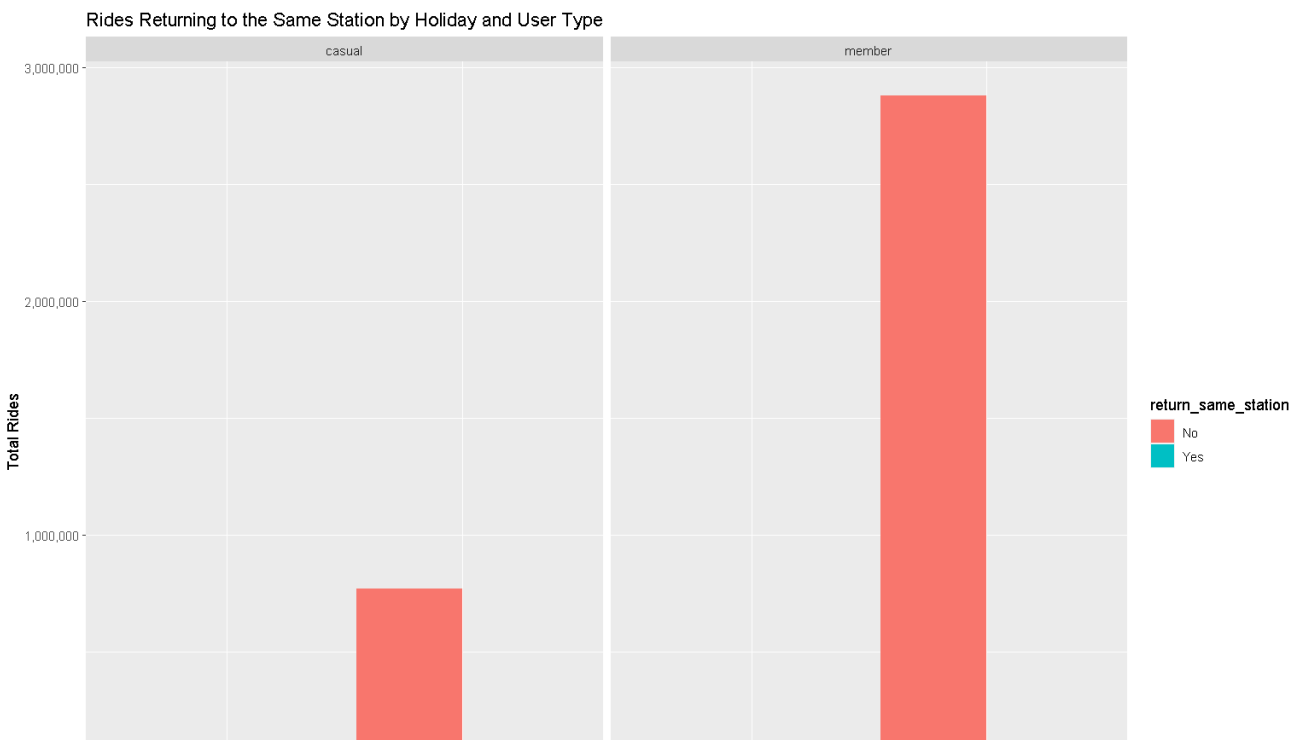


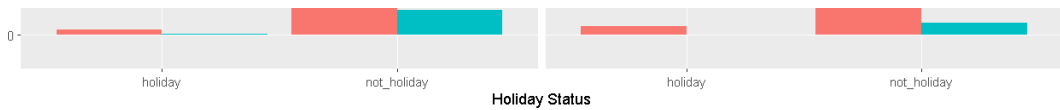


### Holiday Rides returning to starting station Analysis, Categorized by User Type :

```
> kable(same_station_by_holiday)
```

user_type	holiday_or	return_same_station	total_rides
casual	holiday	No	21558
casual	holiday	Yes	3402
casual	not_holiday	No	772401
casual	not_holiday	Yes	104827
member	holiday	No	38696
member	holiday	Yes	1084
member	not_holiday	No	2881718
member	not_holiday	Yes	52368



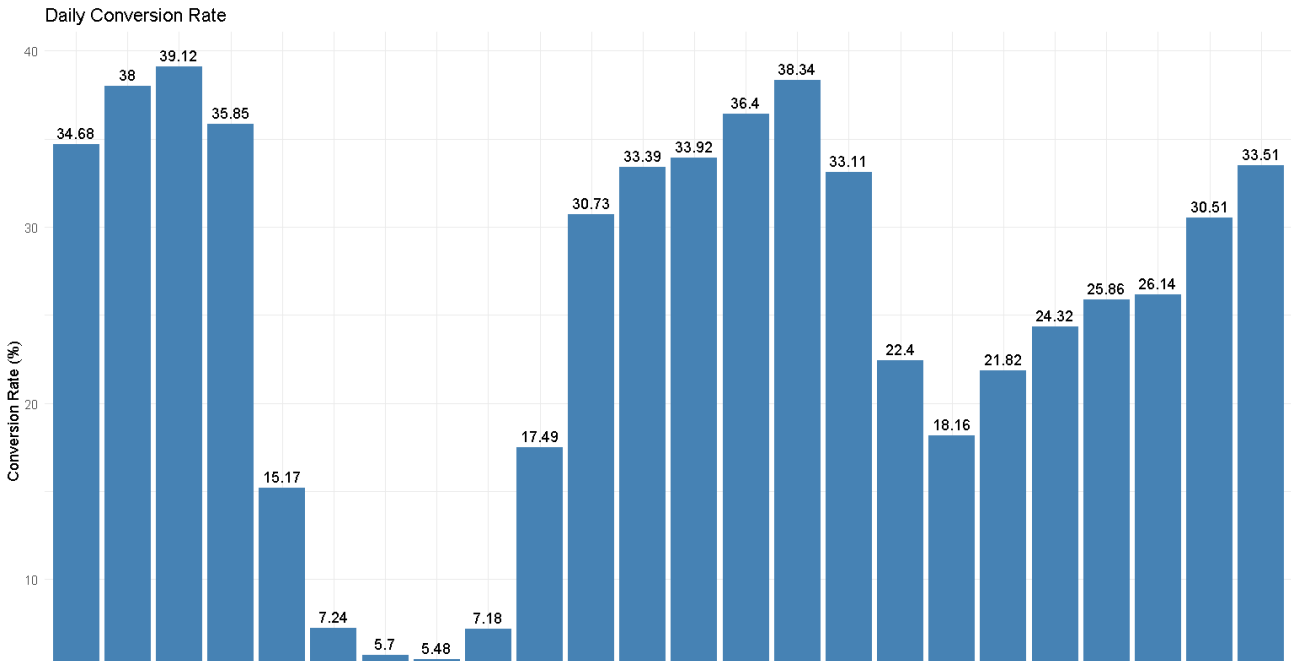


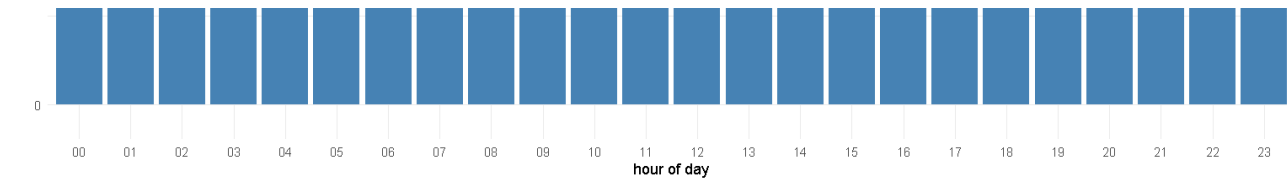
CONVERSION RATE:

Conversion rate by hour:

```
> kable(conversion_rate_by_hour)
```

hour_of_day	total_rides	casual_rides	conversion_rate
:-----	-----	-----	-----
00	24112	8363	34.683975
01	14475	5501	38.003454
02	8591	3361	39.122337
03	5528	1982	35.853835
04	7882	1196	15.173814
05	37133	2690	7.244230
06	110385	6291	5.699144
07	242904	13302	5.476237
08	310468	22304	7.183993
09	166126	29057	17.490941
10	147662	45374	30.728285
11	183654	61323	33.390506
12	211175	71626	33.917841
13	212642	77406	36.402028
14	211638	81143	38.340468
15	249029	82461	33.113011
16	381232	85398	22.400533
17	478086	86809	18.157612
18	317530	69297	21.823765
19	210437	51181	24.321293
20	135057	34930	25.863154
21	97296	25433	26.139821
22	70221	21421	30.505120
23	42791	14339	33.509383

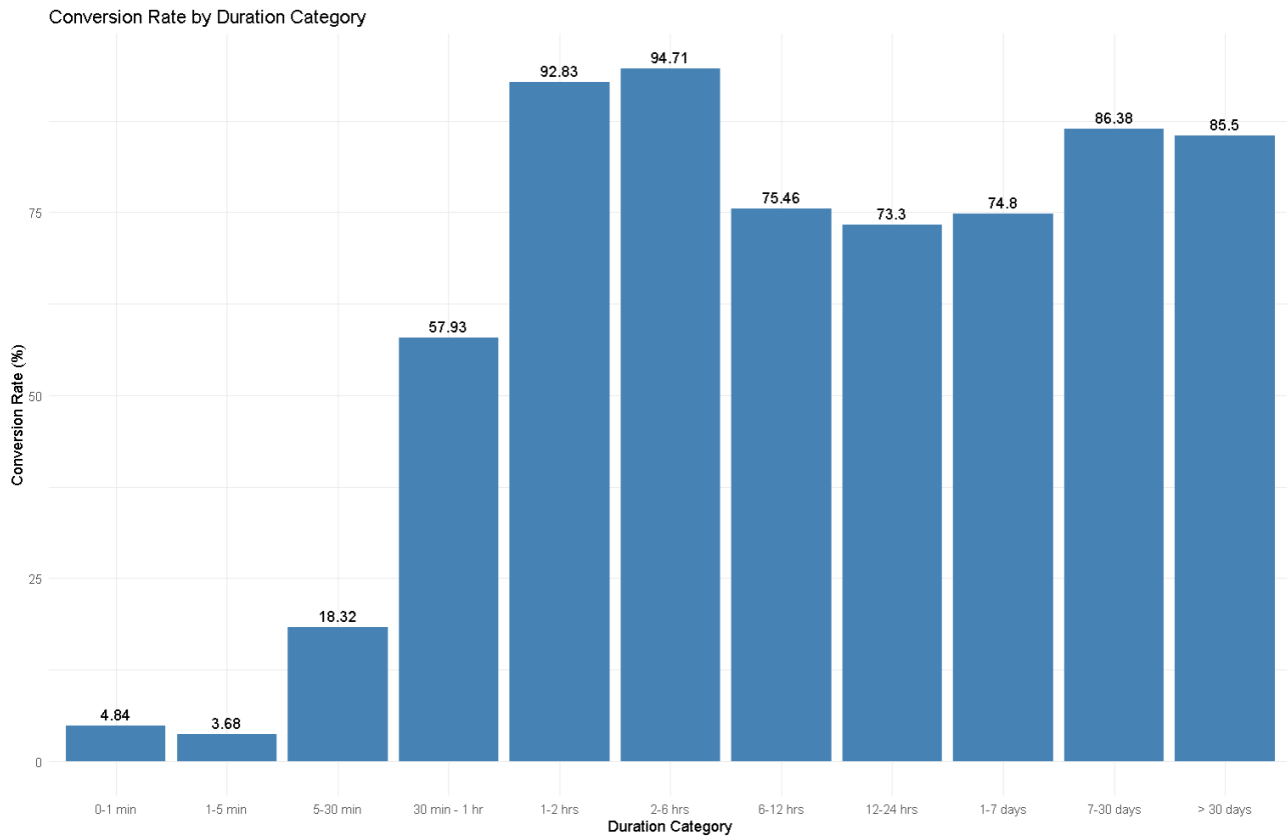




## Conversion rate by ride duration:

```
> kable(conversion_rate_by_duration)
```

duration_category	total_rides	casual_rides	conversion_rate
:-----:	:-----:	:-----:	:-----:
0-1 min	3908	189	4.836233
1-5 min	529182	19456	3.676618
5-30 min	2801977	513399	18.322741
30 min - 1 hr	379979	220127	57.931359
1-2 hrs	117454	109038	92.834642
2-6 hrs	37003	35045	94.708537
6-12 hrs	2380	1796	75.462185
12-24 hrs	2225	1631	73.303371
1-7 days	1492	1116	74.798928
7-30 days	323	279	86.377709
> 30 days	131	112	85.496183

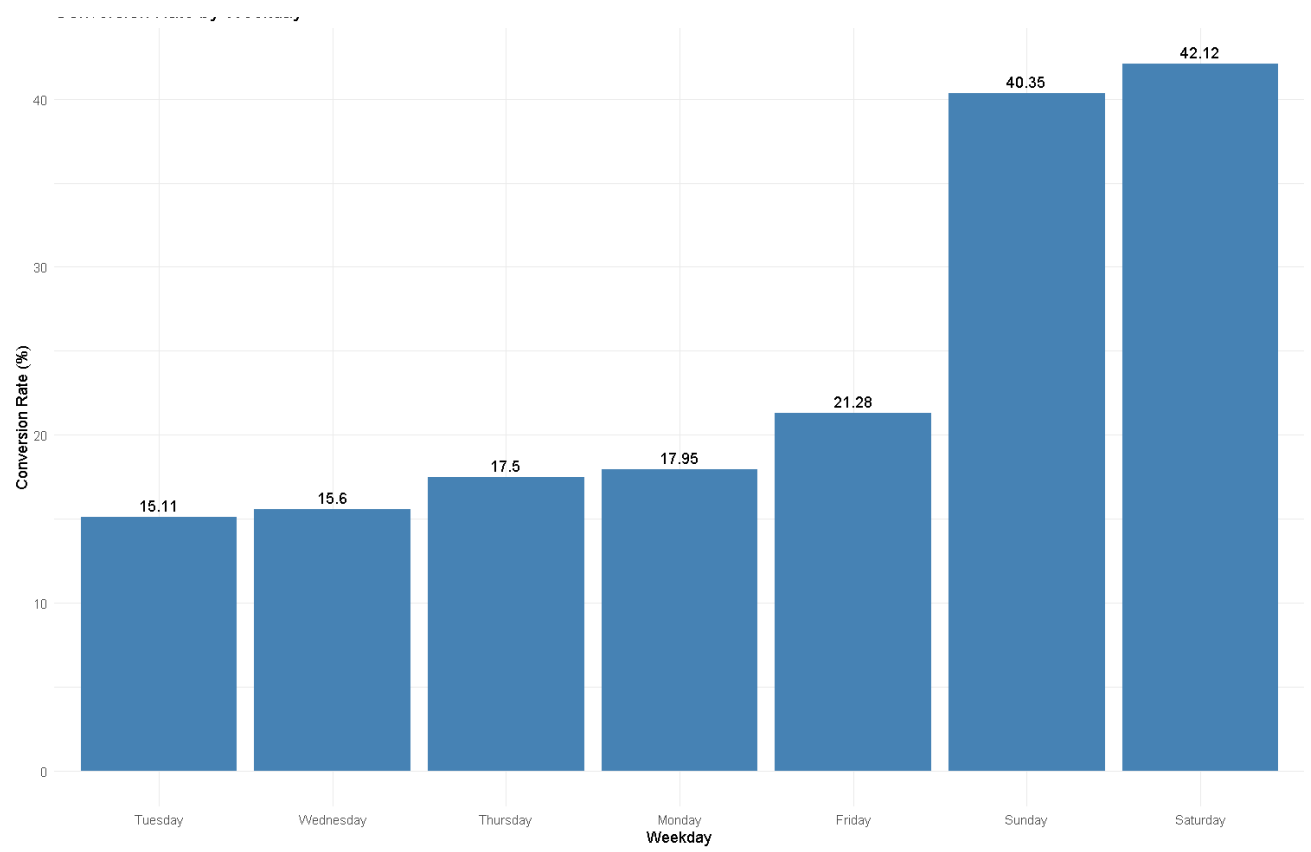


## Conversion rate by weekdays:

```
> kable(conversion_rate_by_weekday)
```

weekday_name	total_rides	casual_rides	conversion_rate
:-----:	:-----:	:-----:	:-----:
Friday	575194	122404	21.28047
Monday	575492	103296	17.94916
Saturday	497501	209543	42.11911
Sunday	449270	181299	40.35413
Thursday	586856	102679	17.49646
Tuesday	598955	90510	15.11132
Wednesday	592786	92457	15.59703

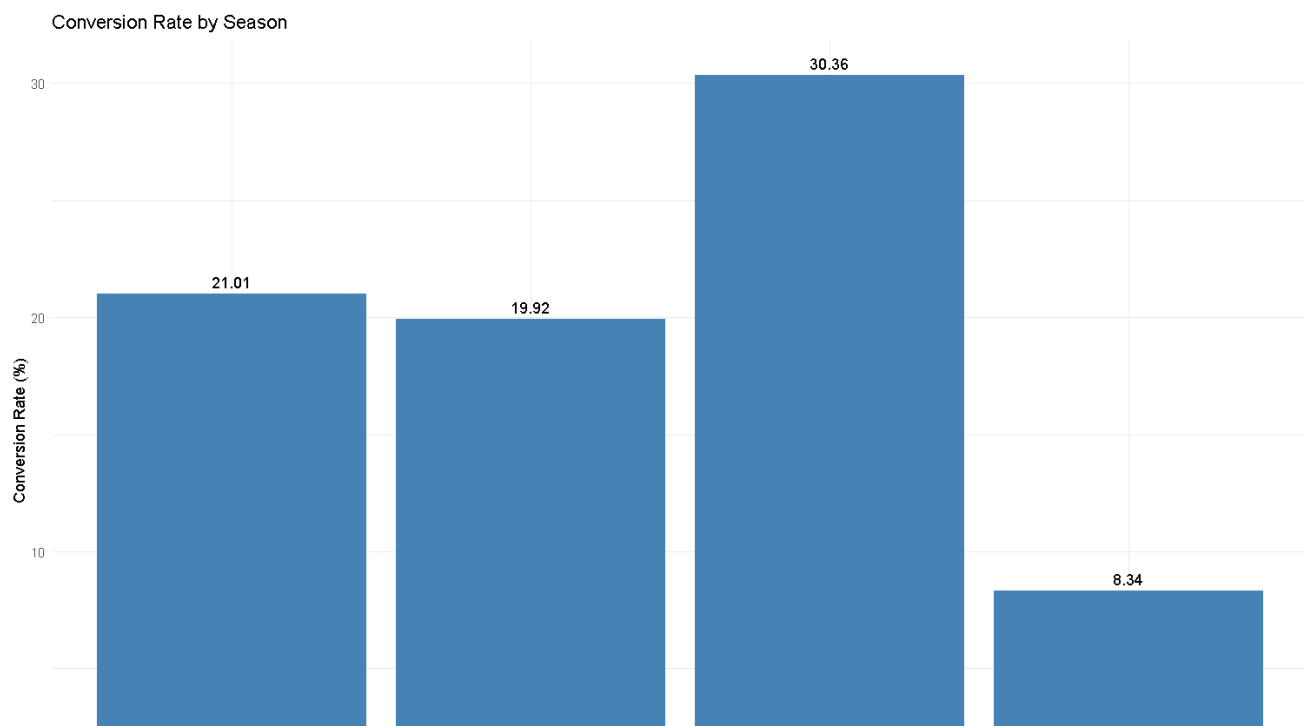
Conversion Rate by Weekday

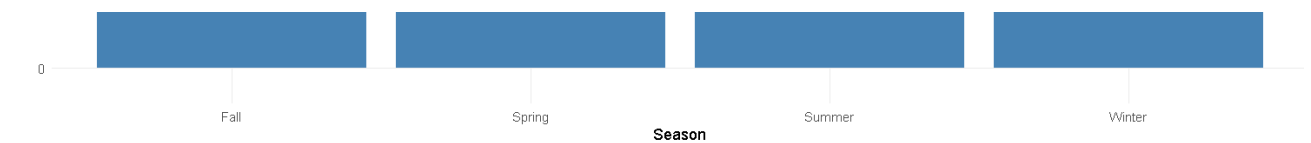


## Conversion rate by Season:

```
> kable(conversion_rate_by_season)
```

season	total_rides	casual_rides	conversion_rate
Fall	1042181	218937	21.007579
Spring	772975	153983	19.920825
Summer	1622894	492739	30.361749
Winter	438004	36529	8.339878

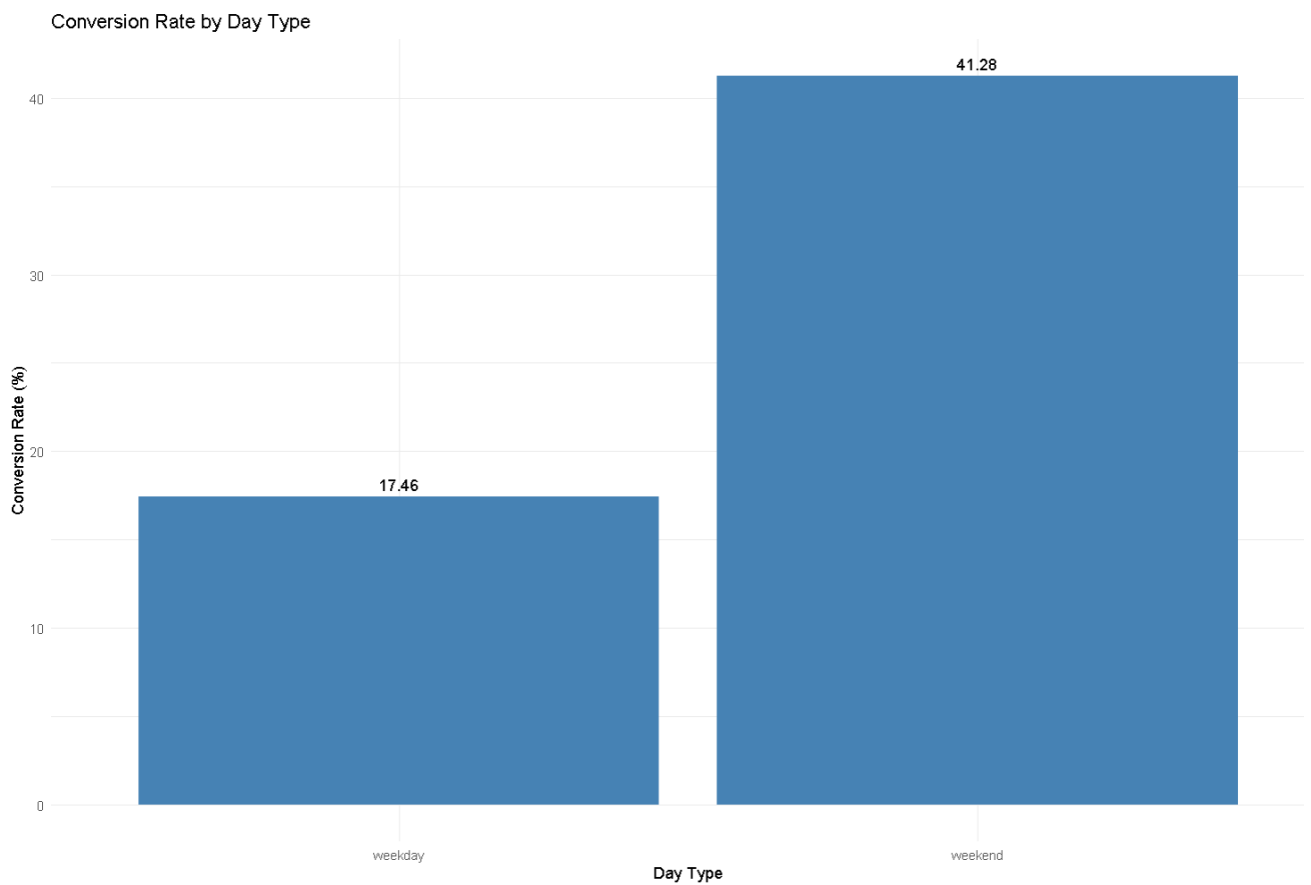




## Conversion rate by day type:

```
> kable(conversion_rate_by_day_type)
```

weekend_or	total_rides	casual_rides	conversion_rate
weekday	2929283	511346	17.45635
weekend	946771	390842	41.28158



## Conversion rate by holiday:

```
> kable(conversion_rate_by_holiday)
```

holiday_or	total_rides	casual_rides	conversion_rate
holiday	64740	24960	38.55422
not_holiday	3811314	877228	23.01642

```
> scale_y_continuous(labels = scales::comma)
```

