

Neil Strava Analysis



Load Libraries

```
#install.packages("rgdal")
#install.packages("maptools")
#install.packages("httr")
#install.packages("httpuv")
#install.packages("jsonlite")

library(maptools)
library(rgdal)
library(httr)
library(httpuv)
library(tidyverse)
library(jsonlite)
```

Access data and enter credential

```
my_app <- oauth_app("strava",
  key = "21055",
  secret = "5017dd6afa6bfab93bf3cef07961193961a5cdf1"
)

my_endpoint <- oauth_endpoint(
  request = NULL,
  authorize = "https://www.strava.com/oauth/authorize",
  access = "https://www.strava.com/oauth/token"
)
```

Load the data convert from Javascript

```
#sig <- oauth2.0_token(my_endpoint, my_app, scope = "view_private", type = NULL, use_oob = FALSE, as_h
```

```
jsonData <- fromJSON("https://www.strava.com/api/v3/athlete/activities?access_token=5017dd6afa6bfab93bf")
```

View some of the data

```
nrow(jsonData) ##returns the number of records retrieved
```

```
## [1] 133
```

```
names(jsonData) ##returns the column names of list vector returned
```

```
## [1] "id" "resource_state"
## [3] "external_id" "upload_id"
## [5] "name" "distance"
## [7] "moving_time" "elapsed_time"
## [9] "total_elevation_gain" "type"
## [11] "start_date" "start_date_local"
## [13] "timezone" "utc_offset"
## [15] "start_latlng" "end_latlng"
## [17] "location_city" "location_state"
## [19] "location_country" "start_latitude"
## [21] "start_longitude" "achievement_count"
## [23] "kudos_count" "comment_count"
## [25] "athlete_count" "photo_count"
## [27] "trainer" "commute"
## [29] "manual" "private"
## [31] "flagged" "gear_id"
## [33] "from_accepted_tag" "average_speed"
## [35] "max_speed" "has_heartrate"
## [37] "elev_high" "elev_low"
## [39] "pr_count" "total_photo_count"
## [41] "has_kudoed" "workout_type"
## [43] "average_watts" "kilojoules"
## [45] "device_watts" "athlete.id"
## [47] "athlete.resource_state" "map.id"
## [49] "map.summary_polyline" "map.resource_state"
```

```
head(jsonData, n=3) ## returns the first three full records
```

```
##           id resource_state           external_id upload_id
## 1 1414712469                2 9e133c1a3797a6c20d02ff8772483c13 1526968691
## 2 1410993456                2 e59b2feb9c2f96f32ea3b74b9337f39d 1522960865
## 3 1406428205                2 223f30bd66ead5e76fba391575e3c6cf 1517973203
##                                     name distance moving_time
## 1 Nice error, Strava. I wish I was that fast.    9209.2      1973
## 2                                     Afternoon Run    5195.3      1535
## 3                                     Afternoon Run    6600.3      2014
##      elapsed_time total_elevation_gain type           start_date
## 1           2620             23.5 Run 2018-02-18T20:13:49Z
## 2           1998             21.7 Run 2018-02-17T00:11:36Z
## 3           2697             18.9 Run 2018-02-13T22:24:30Z
##           start_date_local           timezone utc_offset
## 1 2018-02-18T13:13:49Z (GMT-07:00) America/Denver      -25200
```

```

## 2 2018-02-16T17:11:36Z (GMT-07:00) America/Denver -25200
## 3 2018-02-13T15:24:30Z (GMT-07:00) America/Denver -25200
##      start_latlng      end_latlng location_city location_state
## 1 40.55, -105.03 40.55, -105.03      NA      NA
## 2 40.55, -105.03 40.55, -105.03      NA      NA
## 3 40.55, -105.03 40.55, -105.03      NA      NA
##      location_country start_latitude start_longitude achievement_count
## 1      40.55      -105.03      2
## 2      40.55      -105.03      0
## 3      40.55      -105.03      1
##      kudos_count comment_count athlete_count photo_count trainer commute
## 1      2      0      1      0 FALSE FALSE
## 2      0      0      1      0 FALSE FALSE
## 3      0      0      1      0 FALSE FALSE
##      manual private flagged gear_id from_accepted_tag average_speed
## 1 FALSE FALSE FALSE g1496276 FALSE 4.668
## 2 FALSE FALSE FALSE g1496276 FALSE 3.385
## 3 FALSE FALSE FALSE g1496276 FALSE 3.277
##      max_speed has_heartrate elev_high elev_low pr_count total_photo_count
## 1      39.2      FALSE 1512.7 1496.6      1      0
## 2      4.6      FALSE 1510.5 1487.1      0      0
## 3      4.4      FALSE 1497.6 1485.0      0      0
##      has_kudoed workout_type average_watts kilojoules device_watts athlete.id
## 1 FALSE      0      NA      NA      NA 15386069
## 2 FALSE      0      NA      NA      NA 15386069
## 3 FALSE      0      NA      NA      NA 15386069
##      athlete.resource_state      map.id
## 1      1 a1414712469
## 2      1 a1410993456
## 3      1 a1406428205
##
## 1      mlovF|t``ShFjA_ClGfGhKmApFa]wPhZ|Tne@hCiq@yIqCKQlBzJaXC1lAdjA`@ujAi@Ag
## 2      gnnvF|_``SoMlHaAvHsKBDtt
## 3 umnvFh_``SgIi]{JhJ_B\\mBcC]mLrA}Dqf@oA{EfEyA`Rn@p@pCwClDvHgJhLi0bD{CnEpKsIdHc@nIoLoC}GiFjA~B}SxDkC
##      map.resource_state
## 1      2
## 2      2
## 3      2

```

Strava only loads 200 records at a time... if you have more than 200 records, use this

```

#jsonData[c(6,7,12,29,31)]
#
#
#jsonData_p2 <- fromJSON("https://www.strava.com/api/v3/athlete/activities?access_token=5017dd6afa6bfbab")
#
#jsonData_p2[c(6,7,12,29,31)]
#
#jsonData_p3 <- fromJSON("https://www.strava.com/api/v3/athlete/activities?access_token=5017dd6afa6bfbab")
#
#jsonData_p3[c(6,7,12,29,31)]

```

```

#
#
alltimeData <- jsonData      #rbind.pages(list(jsonData, jsonData_p2, jsonData_p3)) ##combines the thre
#
#nrow(alltimeData) ##show your full strava activity count for all time
#
alltimeData[c(6,7,12,29,31)] ##display the summary data for ALL records

```

##	distance	moving_time	start_date_local	manual	flagged
## 1	9209.2	1973	2018-02-18T13:13:49Z	FALSE	FALSE
## 2	5195.3	1535	2018-02-16T17:11:36Z	FALSE	FALSE
## 3	6600.3	2014	2018-02-13T15:24:30Z	FALSE	FALSE
## 4	5932.4	1858	2018-02-06T14:44:29Z	FALSE	FALSE
## 5	12941.0	4672	2018-02-03T12:49:37Z	FALSE	FALSE
## 6	8264.0	2538	2018-01-30T15:11:57Z	FALSE	FALSE
## 7	4274.0	1326	2018-01-28T12:55:12Z	FALSE	FALSE
## 8	9703.6	2927	2018-01-20T15:01:20Z	FALSE	FALSE
## 9	5995.1	1946	2018-01-18T15:32:34Z	FALSE	FALSE
## 10	7064.1	2174	2018-01-15T15:33:06Z	FALSE	FALSE
## 11	9234.2	2856	2018-01-13T15:28:25Z	FALSE	FALSE
## 12	8887.5	2744	2018-01-11T15:17:10Z	FALSE	FALSE
## 13	7013.3	2281	2018-01-07T14:17:25Z	FALSE	FALSE
## 14	20284.7	6458	2017-12-17T14:19:52Z	FALSE	FALSE
## 15	6832.7	2016	2017-12-14T15:52:40Z	FALSE	FALSE
## 16	12785.2	3912	2017-12-12T15:40:18Z	FALSE	FALSE
## 17	9938.3	3307	2017-12-10T14:48:13Z	FALSE	FALSE
## 18	8932.5	2851	2017-12-07T14:26:18Z	FALSE	FALSE
## 19	11449.6	3807	2017-12-03T15:19:15Z	FALSE	FALSE
## 20	5550.0	1698	2017-12-01T16:06:45Z	FALSE	FALSE
## 21	9518.3	2931	2017-11-26T15:46:45Z	FALSE	FALSE
## 22	5128.9	1567	2017-11-14T16:19:00Z	FALSE	FALSE
## 23	9299.5	2926	2017-11-12T14:30:02Z	FALSE	FALSE
## 24	8907.9	2774	2017-11-11T15:55:39Z	FALSE	FALSE
## 25	8905.2	2748	2017-11-05T14:11:19Z	FALSE	FALSE
## 26	9520.5	3055	2017-10-29T16:38:17Z	FALSE	FALSE
## 27	8951.4	2797	2017-10-27T16:53:48Z	FALSE	FALSE
## 28	10577.4	3401	2017-10-25T17:15:06Z	FALSE	FALSE
## 29	5915.3	1766	2017-10-23T17:26:38Z	FALSE	FALSE
## 30	6534.2	2029	2017-10-20T16:15:36Z	FALSE	FALSE
## 31	8930.6	2756	2017-10-15T17:48:40Z	FALSE	FALSE
## 32	17712.2	5724	2017-10-10T17:25:52Z	FALSE	FALSE
## 33	5787.9	1829	2017-10-06T16:56:08Z	FALSE	FALSE
## 34	8906.2	2718	2017-09-25T17:11:51Z	FALSE	FALSE
## 35	12585.9	4043	2017-09-18T16:28:18Z	FALSE	FALSE
## 36	5651.5	1668	2017-09-13T18:18:53Z	FALSE	FALSE
## 37	11677.6	3470	2017-09-11T18:02:55Z	FALSE	FALSE
## 38	10963.0	3412	2017-09-07T18:10:25Z	FALSE	FALSE
## 39	3165.9	815	2017-09-05T19:05:01Z	FALSE	FALSE
## 40	12075.4	3702	2017-08-30T17:36:34Z	FALSE	FALSE
## 41	3213.3	927	2017-08-28T19:37:30Z	FALSE	FALSE
## 42	10342.3	3154	2017-08-25T16:39:28Z	FALSE	FALSE
## 43	11797.9	3466	2017-08-23T16:57:40Z	FALSE	FALSE
## 44	14643.2	4635	2017-08-21T18:03:23Z	FALSE	FALSE
## 45	9248.1	2815	2017-08-20T18:35:33Z	FALSE	FALSE

## 46	10929.3	3494	2017-08-17T15:45:17Z	FALSE	FALSE
## 47	14790.3	4695	2017-08-15T17:26:39Z	FALSE	FALSE
## 48	746.6	1951	2017-08-08T19:21:04Z	FALSE	FALSE
## 49	18713.9	6080	2017-08-08T17:33:27Z	FALSE	FALSE
## 50	7871.3	2328	2017-08-07T16:47:30Z	FALSE	FALSE
## 51	17033.0	5344	2017-08-03T18:46:22Z	FALSE	FALSE
## 52	11149.3	3412	2017-08-02T19:26:21Z	FALSE	FALSE
## 53	11235.0	3683	2017-08-01T18:17:19Z	FALSE	FALSE
## 54	8211.9	2424	2017-07-31T19:35:10Z	FALSE	FALSE
## 55	7644.4	2058	2017-07-30T19:38:11Z	FALSE	FALSE
## 56	8796.8	1398	2017-07-28T15:27:20Z	FALSE	FALSE
## 57	5691.5	1756	2017-07-27T18:44:44Z	FALSE	FALSE
## 58	7091.3	1801	2017-07-26T19:54:03Z	FALSE	FALSE
## 59	5773.4	2101	2017-07-24T19:37:58Z	FALSE	FALSE
## 60	5400.0	2445	2017-07-23T11:09:40Z	FALSE	FALSE
## 61	8814.3	2724	2017-07-18T19:19:12Z	FALSE	FALSE
## 62	6795.8	1955	2017-07-12T19:00:54Z	FALSE	FALSE
## 63	8996.9	3111	2017-06-30T19:47:00Z	FALSE	FALSE
## 64	1295.3	751	2017-06-24T09:12:26Z	FALSE	FALSE
## 65	6074.1	1786	2017-06-23T08:13:33Z	FALSE	FALSE
## 66	4561.8	2936	2017-06-22T08:39:20Z	FALSE	FALSE
## 67	7845.4	2563	2017-06-18T18:53:28Z	FALSE	FALSE
## 68	13768.9	4526	2017-06-10T18:40:56Z	FALSE	FALSE
## 69	7006.6	2237	2017-06-09T18:24:57Z	FALSE	FALSE
## 70	9371.4	2921	2017-06-08T16:17:04Z	FALSE	FALSE
## 71	11381.1	3642	2017-06-05T16:06:07Z	FALSE	FALSE
## 72	3731.6	1257	2017-06-04T19:54:19Z	FALSE	FALSE
## 73	5698.3	1783	2017-06-04T17:00:13Z	FALSE	FALSE
## 74	5305.4	1503	2017-06-03T13:09:18Z	FALSE	FALSE
## 75	9908.9	3093	2017-06-02T13:27:07Z	FALSE	FALSE
## 76	5339.2	1663	2017-05-30T19:16:02Z	FALSE	FALSE
## 77	8172.5	2389	2017-05-27T16:03:33Z	FALSE	FALSE
## 78	5639.8	1846	2017-05-25T18:11:50Z	FALSE	FALSE
## 79	16537.1	5416	2017-05-23T18:28:07Z	FALSE	FALSE
## 80	11305.5	3610	2017-05-19T18:11:19Z	FALSE	FALSE
## 81	12047.5	3964	2017-05-14T16:06:30Z	FALSE	FALSE
## 82	4982.4	1502	2017-05-09T17:01:00Z	FALSE	FALSE
## 83	11145.5	3519	2017-05-07T18:58:23Z	FALSE	FALSE
## 84	8409.5	2651	2017-04-26T16:35:27Z	FALSE	FALSE
## 85	6722.8	2015	2017-04-23T17:51:24Z	FALSE	FALSE
## 86	5004.2	1405	2017-04-22T19:13:14Z	FALSE	FALSE
## 87	12742.7	4066	2017-04-18T18:24:14Z	FALSE	FALSE
## 88	7946.4	2452	2017-04-17T17:26:04Z	FALSE	FALSE
## 89	5311.5	1552	2017-04-15T15:51:58Z	FALSE	FALSE
## 90	12943.9	4104	2017-04-11T17:38:35Z	FALSE	FALSE
## 91	10309.3	3240	2017-04-09T16:35:33Z	FALSE	FALSE
## 92	6706.6	2088	2017-04-08T17:04:58Z	FALSE	FALSE
## 93	5095.2	1577	2017-04-07T16:10:44Z	FALSE	FALSE
## 94	8577.2	2747	2017-03-29T17:38:13Z	FALSE	FALSE
## 95	6309.4	2731	2017-02-19T15:54:58Z	FALSE	FALSE
## 96	4986.7	1518	2017-02-12T15:36:08Z	FALSE	FALSE
## 97	5235.9	1675	2017-02-04T15:43:31Z	FALSE	FALSE
## 98	6640.6	2027	2017-01-29T14:02:13Z	FALSE	FALSE
## 99	4970.5	1542	2017-01-28T15:43:40Z	FALSE	FALSE

```
## 100    6761.6      2161 2017-01-22T13:22:20Z FALSE FALSE
## 101    6238.1      1999 2017-01-14T15:26:12Z FALSE FALSE
## 102    5036.4      1644 2017-01-08T14:38:31Z FALSE FALSE
## 103    7255.0      2382 2016-10-26T08:19:18Z FALSE FALSE
## 104    5046.5      1505 2016-10-24T17:58:56Z FALSE FALSE
## 105   13715.3      5473 2016-10-23T17:09:38Z FALSE FALSE
## 106   31643.4      9600 2016-10-15T10:01:44Z FALSE FALSE
## 107    6041.9      2483 2016-09-25T08:00:58Z FALSE FALSE
## 108    8485.3      2739 2016-08-31T17:06:51Z FALSE FALSE
## 109    6970.8      2319 2016-08-21T12:59:24Z FALSE FALSE
## 110    4682.8      1356 2016-08-15T17:09:21Z FALSE FALSE
## 111    8977.9      4062 2016-08-10T08:54:54Z FALSE FALSE
## 112    9732.8      3564 2016-08-09T16:15:33Z FALSE FALSE
## 113    6707.5      2054 2016-08-08T17:51:42Z FALSE FALSE
## 114    3259.4        919 2016-08-05T16:58:04Z FALSE FALSE
## 115    7441.1      2477 2016-07-21T17:19:01Z FALSE FALSE
## 116   20598.0      6328 2016-07-13T17:15:11Z FALSE FALSE
## 117    7798.7      2344 2016-07-05T17:39:24Z FALSE FALSE
## 118   11517.6      3664 2016-07-04T18:45:56Z FALSE FALSE
## 119   18639.7      6336 2016-06-29T17:41:31Z FALSE FALSE
## 120   22331.3      7794 2016-06-26T07:07:05Z FALSE FALSE
## 121   11714.5      3819 2016-06-25T17:22:23Z FALSE FALSE
## 122   13223.9      7203 2016-06-23T07:28:37Z FALSE FALSE
## 123   11072.8      5287 2016-06-18T09:03:03Z FALSE FALSE
## 124    6810.1      2568 2016-06-14T19:24:35Z FALSE FALSE
## 125    5239.1      1570 2016-06-14T18:31:53Z FALSE FALSE
## 126    6849.9      2276 2016-06-07T18:28:51Z FALSE FALSE
## 127   11692.8      4284 2016-06-06T09:39:41Z FALSE FALSE
## 128    8464.3      2400 2016-06-04T18:49:20Z FALSE FALSE
## 129   16327.6      8078 2016-06-01T09:29:36Z FALSE FALSE
## 130   11162.5      3520 2016-05-31T14:43:14Z FALSE FALSE
## 131   11662.4      4281 2016-05-29T08:37:54Z FALSE FALSE
## 132    9277.1      3293 2016-05-28T11:04:48Z FALSE FALSE
## 133   12574.8      3585 2016-05-27T15:32:27Z FALSE FALSE
```

```
#alltimeData <- as.POSIXct(alltimeData$start_date_local, format = "%Y-%m-%dT%TZ") #convert from charact
```

Filter by year and convert to American Units

```
##STATISTICS FOR 2016

#filter just 2017 runs

alltimeData <- alltimeData %>%
  mutate(year = ifelse((grepl("2016-", start_date) == TRUE), 2016, NA),
         year = ifelse((grepl("2017-", start_date) == TRUE), 2017, year),
         year = ifelse((grepl("2018-", start_date) == TRUE), 2018, year)) %>%
  filter(type == "Run")

alltimeData <- alltimeData %>%
  mutate(distance_miles = distance/1609.34,
```

```

moving_minutes = moving_time/60,
elev_gain_feet = total_elevation_gain*3.28,
avg_sp_minmi   = average_speed/0.3926239,
elv_gain_ft    = total_elevation_gain*3.28084)

```

2017

```
###STATISTICS FOR 2017
```

```

#filter just 2017 runs
data2017 <- alltimeData %>%
  filter(grepl("2017-", start_date)) %>%
  filter(type == "Run")

```

```
nrow(data2017) ##count the number of records from 2017
```

```
## [1] 84
```

```

data2017 <- data2017 %>%
  mutate(distance_miles = distance/1609.34)

```

```
data2017[c(51,11,27,29)] ## display the summary data of these 2017 rides
```

```

##   year      start_date trainer manual
## 1  2017 2017-12-17T21:19:52Z   FALSE   FALSE
## 2  2017 2017-12-14T22:52:40Z   FALSE   FALSE
## 3  2017 2017-12-12T22:40:18Z   FALSE   FALSE
## 4  2017 2017-12-10T21:48:13Z   FALSE   FALSE
## 5  2017 2017-12-07T21:26:18Z   FALSE   FALSE
## 6  2017 2017-12-03T22:19:15Z   FALSE   FALSE
## 7  2017 2017-12-01T23:06:45Z   FALSE   FALSE
## 8  2017 2017-11-26T22:46:45Z   FALSE   FALSE
## 9  2017 2017-11-14T23:19:00Z   FALSE   FALSE
## 10 2017 2017-11-12T21:30:02Z   FALSE   FALSE
## 11 2017 2017-11-11T22:55:39Z   FALSE   FALSE
## 12 2017 2017-11-05T21:11:19Z   FALSE   FALSE
## 13 2017 2017-10-29T22:38:17Z   FALSE   FALSE
## 14 2017 2017-10-27T22:53:48Z   FALSE   FALSE
## 15 2017 2017-10-25T23:15:06Z   FALSE   FALSE
## 16 2017 2017-10-23T23:26:38Z   FALSE   FALSE
## 17 2017 2017-10-20T22:15:36Z   FALSE   FALSE
## 18 2017 2017-10-15T23:48:40Z   FALSE   FALSE
## 19 2017 2017-10-10T23:25:52Z   FALSE   FALSE
## 20 2017 2017-10-06T22:56:08Z   FALSE   FALSE
## 21 2017 2017-09-25T23:11:51Z   FALSE   FALSE
## 22 2017 2017-09-18T22:28:18Z   FALSE   FALSE
## 23 2017 2017-09-14T00:18:53Z   FALSE   FALSE
## 24 2017 2017-09-12T00:02:55Z   FALSE   FALSE
## 25 2017 2017-09-08T00:10:25Z   FALSE   FALSE
## 26 2017 2017-09-06T01:05:01Z   FALSE   FALSE

```

##	27	2017	2017-08-30T23:36:34Z	FALSE	FALSE
##	28	2017	2017-08-29T01:37:30Z	FALSE	FALSE
##	29	2017	2017-08-25T22:39:28Z	FALSE	FALSE
##	30	2017	2017-08-23T22:57:40Z	FALSE	FALSE
##	31	2017	2017-08-22T00:03:23Z	FALSE	FALSE
##	32	2017	2017-08-21T00:35:33Z	FALSE	FALSE
##	33	2017	2017-08-17T21:45:17Z	FALSE	FALSE
##	34	2017	2017-08-15T23:26:39Z	FALSE	FALSE
##	35	2017	2017-08-09T01:21:04Z	FALSE	FALSE
##	36	2017	2017-08-08T23:33:27Z	FALSE	FALSE
##	37	2017	2017-08-07T22:47:30Z	FALSE	FALSE
##	38	2017	2017-08-04T00:46:22Z	FALSE	FALSE
##	39	2017	2017-08-03T01:26:21Z	FALSE	FALSE
##	40	2017	2017-08-01T01:35:10Z	FALSE	FALSE
##	41	2017	2017-07-31T01:38:11Z	FALSE	FALSE
##	42	2017	2017-07-28T00:44:44Z	FALSE	FALSE
##	43	2017	2017-07-27T01:54:03Z	FALSE	FALSE
##	44	2017	2017-07-23T17:09:40Z	FALSE	FALSE
##	45	2017	2017-07-19T01:19:12Z	FALSE	FALSE
##	46	2017	2017-07-13T01:00:54Z	FALSE	FALSE
##	47	2017	2017-07-01T01:47:00Z	FALSE	FALSE
##	48	2017	2017-06-24T15:12:26Z	FALSE	FALSE
##	49	2017	2017-06-23T14:13:33Z	FALSE	FALSE
##	50	2017	2017-06-22T14:39:20Z	FALSE	FALSE
##	51	2017	2017-06-19T01:53:28Z	FALSE	FALSE
##	52	2017	2017-06-11T00:40:56Z	FALSE	FALSE
##	53	2017	2017-06-08T22:17:04Z	FALSE	FALSE
##	54	2017	2017-06-05T22:06:07Z	FALSE	FALSE
##	55	2017	2017-06-05T01:54:19Z	FALSE	FALSE
##	56	2017	2017-06-04T23:00:13Z	FALSE	FALSE
##	57	2017	2017-06-03T19:09:18Z	FALSE	FALSE
##	58	2017	2017-06-02T19:27:07Z	FALSE	FALSE
##	59	2017	2017-05-31T01:16:02Z	FALSE	FALSE
##	60	2017	2017-05-27T22:03:33Z	FALSE	FALSE
##	61	2017	2017-05-26T00:11:50Z	FALSE	FALSE
##	62	2017	2017-05-24T00:28:07Z	FALSE	FALSE
##	63	2017	2017-05-20T00:11:19Z	FALSE	FALSE
##	64	2017	2017-05-14T22:06:30Z	FALSE	FALSE
##	65	2017	2017-05-09T23:01:00Z	FALSE	FALSE
##	66	2017	2017-05-08T00:58:23Z	FALSE	FALSE
##	67	2017	2017-04-26T22:35:27Z	FALSE	FALSE
##	68	2017	2017-04-23T23:51:24Z	FALSE	FALSE
##	69	2017	2017-04-23T01:13:14Z	FALSE	FALSE
##	70	2017	2017-04-19T00:24:14Z	FALSE	FALSE
##	71	2017	2017-04-17T23:26:04Z	FALSE	FALSE
##	72	2017	2017-04-15T21:51:58Z	FALSE	FALSE
##	73	2017	2017-04-11T23:38:35Z	FALSE	FALSE
##	74	2017	2017-04-09T22:35:33Z	FALSE	FALSE
##	75	2017	2017-04-08T23:04:58Z	FALSE	FALSE
##	76	2017	2017-04-07T22:10:44Z	FALSE	FALSE
##	77	2017	2017-03-29T23:38:13Z	FALSE	FALSE
##	78	2017	2017-02-12T22:36:08Z	FALSE	FALSE
##	79	2017	2017-02-04T22:43:31Z	FALSE	FALSE
##	80	2017	2017-01-29T21:02:13Z	FALSE	FALSE


```
## 81 2017 2017-01-28T22:43:40Z FALSE FALSE
## 82 2017 2017-01-22T20:22:20Z FALSE FALSE
## 83 2017 2017-01-14T22:26:12Z FALSE FALSE
## 84 2017 2017-01-08T21:38:31Z FALSE FALSE

sum(data2017$distance)/1609.34 ##total 2016 distance, converted from meters to miles

## [1] 453.2064

sum(data2017[which(data2017[,27]==TRUE),6])/1609.34 ##total distance where Commute = True, also convert

## [1] 0

sum(data2017[which(data2017[,27]==FALSE),6])/1609.34 ##total distance where Commute = False, again convert

## [1] 453.2064
```

2018

```
###STATISTICS FOR 2018

#filter just 2018 runs
data2018 <- alltimeData %>%
  filter(grepl("2018-", start_date)) %>%
  filter(type == "Run")

nrow(data2018) ##count the number of records from 2017

## [1] 13

data2018 <- data2018 %>%
  mutate(distance_miles = distance/1609.34)

data2018[c(51,11,27,29)] ## display the summary data of these 2017 rides

##   year      start_date trainer manual
## 1 2018 2018-02-18T20:13:49Z  FALSE  FALSE
## 2 2018 2018-02-17T00:11:36Z  FALSE  FALSE
## 3 2018 2018-02-13T22:24:30Z  FALSE  FALSE
## 4 2018 2018-02-06T21:44:29Z  FALSE  FALSE
## 5 2018 2018-02-03T19:49:37Z  FALSE  FALSE
## 6 2018 2018-01-30T22:11:57Z  FALSE  FALSE
## 7 2018 2018-01-28T19:55:12Z  FALSE  FALSE
## 8 2018 2018-01-20T22:01:20Z  FALSE  FALSE
## 9 2018 2018-01-18T22:32:34Z  FALSE  FALSE
## 10 2018 2018-01-15T22:33:06Z  FALSE  FALSE
## 11 2018 2018-01-13T22:28:25Z  FALSE  FALSE
## 12 2018 2018-01-11T22:17:10Z  FALSE  FALSE
## 13 2018 2018-01-07T21:17:25Z  FALSE  FALSE

sum(data2018$distance)/1609.34 ##total 2016 distance, converted from meters to miles

## [1] 62.33238
```

```
sum(data2018[which(data2018[,27]==TRUE),6])/1609.34 ##total distance where Commute = True, also convert  
## [1] 0  
sum(data2018[which(data2018[,27]==FALSE),6])/1609.34 ##total distance where Commute = False, again conv  
## [1] 62.33238
```