A
RStudio
addin

Master degree

Mutatis mutandis.
Custom project

>>> liftr
with custom french template

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Inspired by Nan Xiao liftr package
Please note that project is using RStudio software but is not a RStudio project

Contents

pdf_document customisation :

http://rmarkdown.rstudio.com/pdf_document_format.html

1 section

1.1 subsection

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1.1.1.1 paragraph

1.1.1.1.1 subparagraph

subsubparagraph (What ? You wanted more ?)

An ionocraft [1] or ion-propelled aircraft (commonly known as a lifter or hexalifter) is a device that uses an electrical electrohydrodynamic (EHD) phenomenon to produce thrust in the air without requiring any combustion or moving parts.

2 Images and footnotes

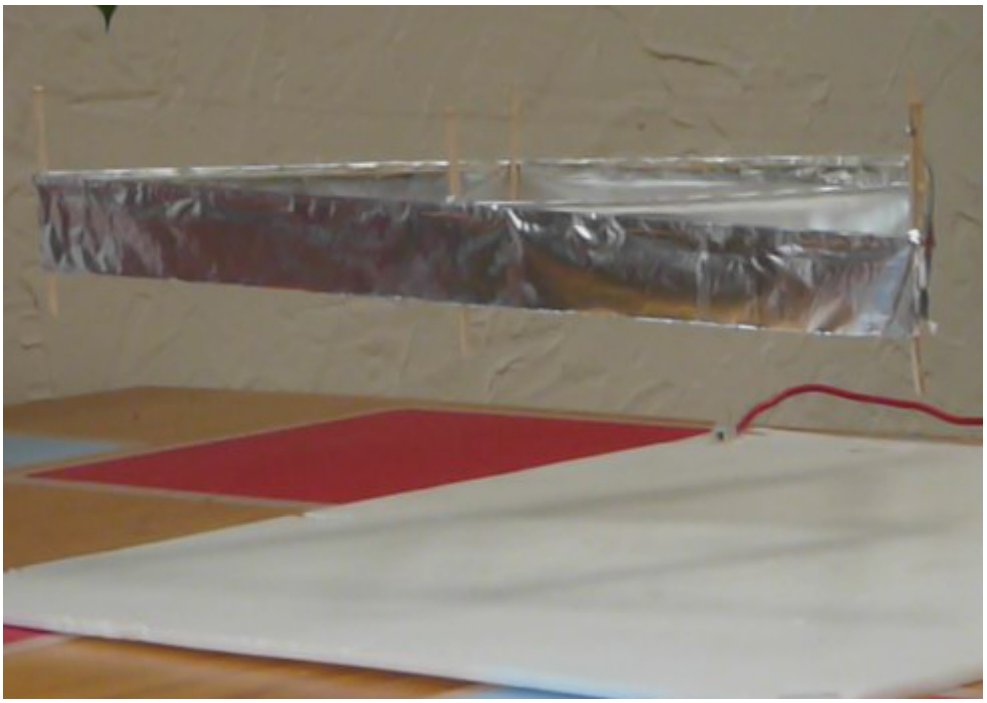

Figure 1. Flying Lifter v2 [2]

1. https://en.wikipedia.org/wiki/Ionocraft
2. Anonymous59 CC-BY-SA Creative Commons https://commons.wikimedia.org/wiki/File:FlyingLifterv2.png

3 Code

```
import sys

print sys.version
```

```
## 2.7.13 (default, Jan 19 2017, 14:48:08)
## [GCC 6.3.0 20170118]
```

4 R code

4.1 tibble

The examples are from : https://github.com/tidyverse/tibble.

```
library("tibble")
as_tibble(iris)
```

```
## # A tibble: 150 x 5
##    Sepal.Length Sepal.Width Petal.Length Petal.Width Species
##           <dbl>       <dbl>        <dbl>       <dbl>  <fctr>
##  1          5.1         3.5          1.4         0.2  setosa
##  2          4.9         3.0          1.4         0.2  setosa
##  3          4.7         3.2          1.3         0.2  setosa
##  4          4.6         3.1          1.5         0.2  setosa
##  5          5.0         3.6          1.4         0.2  setosa
##  6          5.4         3.9          1.7         0.4  setosa
##  7          4.6         3.4          1.4         0.3  setosa
##  8          5.0         3.4          1.5         0.2  setosa
##  9          4.4         2.9          1.4         0.2  setosa
## 10          4.9         3.1          1.5         0.1  setosa
## # ... with 140 more rows
```

```
tibble(x = 1:5, y = 1, z = x ^ 2 + y)
```

```
## # A tibble: 5 x 3
##       x     y     z
##   <int> <dbl> <dbl>
## 1     1     1     2
## 2     2     1     5
## 3     3     1    10
## 4     4     1    17
## 5     5     1    26
```

```
tribble(
  ~x, ~y,  ~z,
  "a", 2,  3.6,
  "b", 1,  8.5)
```

```
## # A tibble: 2 x 3
##       x     y     z
##   <chr> <dbl> <dbl>
```

```
## 1     a     2   3.6
## 2     b     1   8.5
```

4.2 ggplot2

The example is from : https://github.com/tidyverse/ggplot2.

```
library("ggplot2")

ggplot(mpg, aes(displ, hwy, colour = class)) +
  geom_point()
```

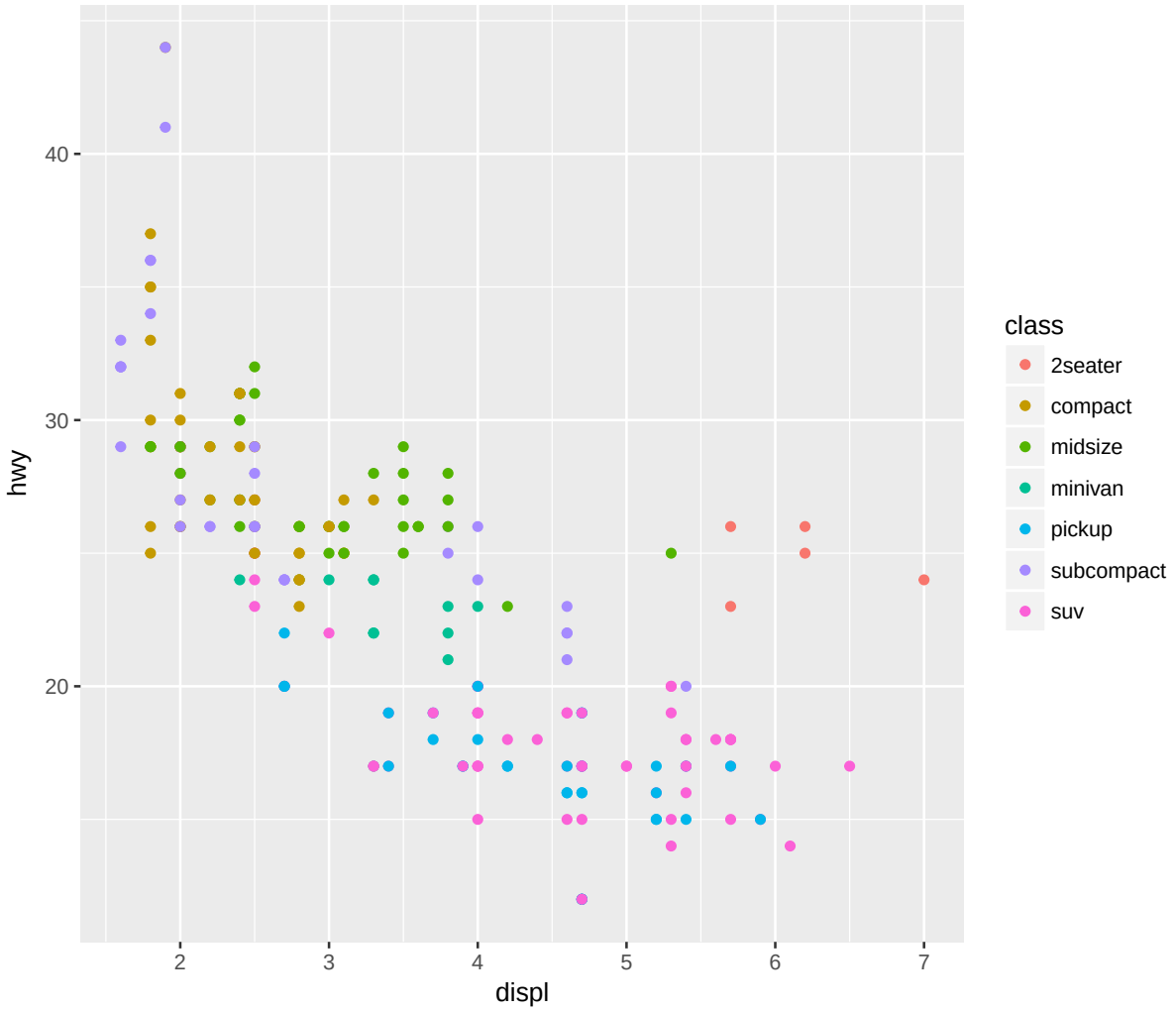

Figure 2. Engine displacement and fuel consumption

4.3 purrr

The example is from : https://github.com/tidyverse/purrr.

```
library("purrr")

mtcars %>%
```

```
  split(.$cyl) %>% # from base R
  map(~ lm(mpg ~ wt, data = .)) %>%
  map(summary) %>%
  map_dbl("r.squared")
```

```
##         4         6         8
## 0.5086326 0.4645102 0.4229655
```

4.4 dplyr

The examples are from : https://cran.rstudio.com/web/packages/dplyr/vignettes/introduction.html.

```
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("nycflights13")

filter(flights, month == 1, day == 1)
```

```
## # A tibble: 842 x 19
##     year month   day dep_time sched_dep_time dep_delay arr_time
##    <int> <int> <int>    <int>          <int>     <dbl>    <int>
##  1  2013     1     1      517            515         2      830
##  2  2013     1     1      533            529         4      850
##  3  2013     1     1      542            540         2      923
##  4  2013     1     1      544            545        -1     1004
##  5  2013     1     1      554            600        -6      812
##  6  2013     1     1      554            558        -4      740
##  7  2013     1     1      555            600        -5      913
##  8  2013     1     1      557            600        -3      709
##  9  2013     1     1      557            600        -3      838
## 10  2013     1     1      558            600        -2      753
## # ... with 832 more rows, and 12 more variables: sched_arr_time <int>,
## #   arr_delay <dbl>, carrier <chr>, flight <int>, tailnum <chr>,
## #   origin <chr>, dest <chr>, air_time <dbl>, distance <dbl>, hour <dbl>,
## #   minute <dbl>, time_hour <dttm>
```

```
slice(flights, 1:10)
```

```
## # A tibble: 10 x 19
##     year month   day dep_time sched_dep_time dep_delay arr_time
##    <int> <int> <int>    <int>          <int>     <dbl>    <int>
##  1  2013     1     1      517            515         2      830
##  2  2013     1     1      533            529         4      850
```

```
##  3  2013     1     1      542            540         2      923
##  4  2013     1     1      544            545        -1     1004
##  5  2013     1     1      554            600        -6      812
##  6  2013     1     1      554            558        -4      740
##  7  2013     1     1      555            600        -5      913
##  8  2013     1     1      557            600        -3      709
##  9  2013     1     1      557            600        -3      838
## 10  2013     1     1      558            600        -2      753
## # ... with 12 more variables: sched_arr_time <int>, arr_delay <dbl>,
## #   carrier <chr>, flight <int>, tailnum <chr>, origin <chr>, dest <chr>,
## #   air_time <dbl>, distance <dbl>, hour <dbl>, minute <dbl>,
## #   time_hour <dttm>
```

```
arrange(flights, year, month, day)
```

```
## # A tibble: 336,776 x 19
##     year month   day dep_time sched_dep_time dep_delay arr_time
##    <int> <int> <int>    <int>          <int>     <dbl>    <int>
##  1  2013     1     1      517            515         2      830
##  2  2013     1     1      533            529         4      850
##  3  2013     1     1      542            540         2      923
##  4  2013     1     1      544            545        -1     1004
##  5  2013     1     1      554            600        -6      812
##  6  2013     1     1      554            558        -4      740
##  7  2013     1     1      555            600        -5      913
##  8  2013     1     1      557            600        -3      709
##  9  2013     1     1      557            600        -3      838
## 10  2013     1     1      558            600        -2      753
## # ... with 336,766 more rows, and 12 more variables: sched_arr_time <int>,
## #   arr_delay <dbl>, carrier <chr>, flight <int>, tailnum <chr>,
## #   origin <chr>, dest <chr>, air_time <dbl>, distance <dbl>, hour <dbl>,
## #   minute <dbl>, time_hour <dttm>
```

```
select(flights, year, month, day)
```

```
## # A tibble: 336,776 x 3
##     year month   day
##    <int> <int> <int>
##  1  2013     1     1
##  2  2013     1     1
##  3  2013     1     1
##  4  2013     1     1
##  5  2013     1     1
##  6  2013     1     1
##  7  2013     1     1
##  8  2013     1     1
##  9  2013     1     1
## 10  2013     1     1
## # ... with 336,766 more rows
```

```
mutate(flights,
  gain = arr_delay - dep_delay,
  speed = distance / air_time * 60)
```

```
## # A tibble: 336,776 x 21
##     year month   day dep_time sched_dep_time dep_delay arr_time
##    <int> <int> <int>    <int>          <int>     <dbl>    <int>
##  1  2013     1     1      517            515         2      830
##  2  2013     1     1      533            529         4      850
##  3  2013     1     1      542            540         2      923
##  4  2013     1     1      544            545        -1     1004
##  5  2013     1     1      554            600        -6      812
##  6  2013     1     1      554            558        -4      740
##  7  2013     1     1      555            600        -5      913
##  8  2013     1     1      557            600        -3      709
##  9  2013     1     1      557            600        -3      838
## 10  2013     1     1      558            600        -2      753
## # ... with 336,766 more rows, and 14 more variables: sched_arr_time <int>,
## #   arr_delay <dbl>, carrier <chr>, flight <int>, tailnum <chr>,
## #   origin <chr>, dest <chr>, air_time <dbl>, distance <dbl>, hour <dbl>,
## #   minute <dbl>, time_hour <dttm>, gain <dbl>, speed <dbl>
```

```
summarise(flights,
  delay = mean(dep_delay, na.rm = TRUE))
```

```
## # A tibble: 1 x 1
##      delay
##      <dbl>
## 1 12.63907
```

5 Session information

The R session information for compiling this document is shown below.

```
sessionInfo()
```

```
## R version 3.4.2 (2017-09-28)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Debian GNU/Linux 9 (stretch)
##
## Matrix products: default
## BLAS/LAPACK: /usr/lib/libopenblasp-r0.2.19.so
##
## locale:
##  [1] LC_CTYPE=en_US.UTF-8       LC_NUMERIC=C
##  [3] LC_TIME=en_US.UTF-8        LC_COLLATE=en_US.UTF-8
##  [5] LC_MONETARY=en_US.UTF-8    LC_MESSAGES=C
##  [7] LC_PAPER=en_US.UTF-8       LC_NAME=C
##  [9] LC_ADDRESS=C               LC_TELEPHONE=C
## [11] LC_MEASUREMENT=en_US.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] methods   stats     graphics  grDevices utils     datasets  base
##
## other attached packages:
## [1] bindrcpp_0.2       nycflights13_0.2.2 dplyr_0.7.4
```

```
## [4] purrr_0.2.4        ggplot2_2.2.1      tibble_1.3.4
## [7] shiny_1.0.5        rmarkdown_1.6      knitr_1.17
##
## loaded via a namespace (and not attached):
##  [1] Rcpp_0.12.13     compiler_3.4.2   plyr_1.8.4       highr_0.6
##  [5] bindr_0.1        tools_3.4.2      digest_0.6.12    evaluate_0.10.1
##  [9] gtable_0.2.0     pkgconfig_2.0.1  rlang_0.1.2      yaml_2.1.14
## [13] stringr_1.2.0    rprojroot_1.2    grid_3.4.2       glue_1.1.1
## [17] R6_2.2.2         magrittr_1.5     backports_1.1.1  scales_0.5.0
## [21] htmltools_0.3.6  assertthat_0.2.0 mime_0.5         xtable_1.8-2
## [25] colorspace_1.3-2 httpuv_1.3.5     labeling_0.3     stringi_1.1.5
## [29] lazyeval_0.2.0   munsell_0.4.3
```

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