https://goo.gl/PekGGJ

```
library(dplyr)
```

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

```
## The following object is masked from 'package:GGally':
##
##     nasa
```

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

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

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

```
library(ggplot2)
library(oilabs)
```

```
data("atheism")
```

sample code for EX4

```
atheism %>%
  group_by(response) %>%
  summarise(n = n()) %>%
  mutate(prop = n / sum(n))
```

```
## # A tibble: 2 x 3
##   response        n   prop
##   <fctr>      <int>  <dbl>
## 1 atheist      5498 0.0625
## 2 non-atheist 82534 0.938
```

sample code for ex13

```
spain = atheism %>% filter(nationality =="Spain")
inference(y = response, x= factor(year) , data = spain, null = 0, statistic = "proportion", type = "ht"
          alternative = "twosided")
```

```
## Response variable: categorical (2 levels, success: atheist)
## Explanatory variable: categorical (2 levels)
## n_2005 = 1146, p_hat_2005 = 0.1003
## n_2012 = 1145, p_hat_2012 = 0.09
## H0: p_2005 =  p_2012
```

```
## HA: p_2005 != p_2012
## z = 0.8476
## p_value = 0.3966
```