FinalProject

Abraham Carter

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Libraries

```
library(readxl)
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.1     v stringr   1.5.2
## v ggplot2   4.0.0     v tibble    3.3.0
## v lubridate 1.9.4     v tidyr     1.3.1
## v purrr     1.1.0
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

Read the data set

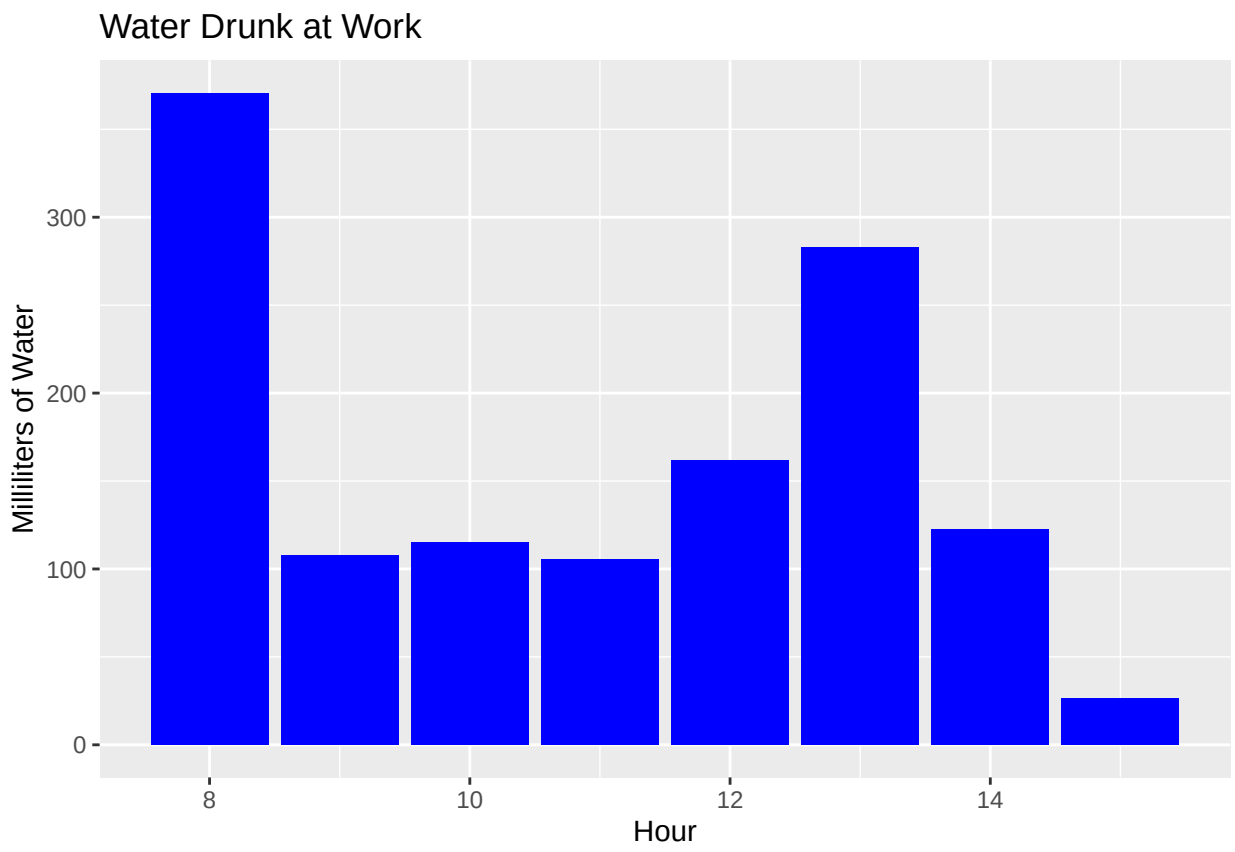
```
projectData <- read_excel("ProjectData.xlsx")
```

Create the true and false graphs per hour

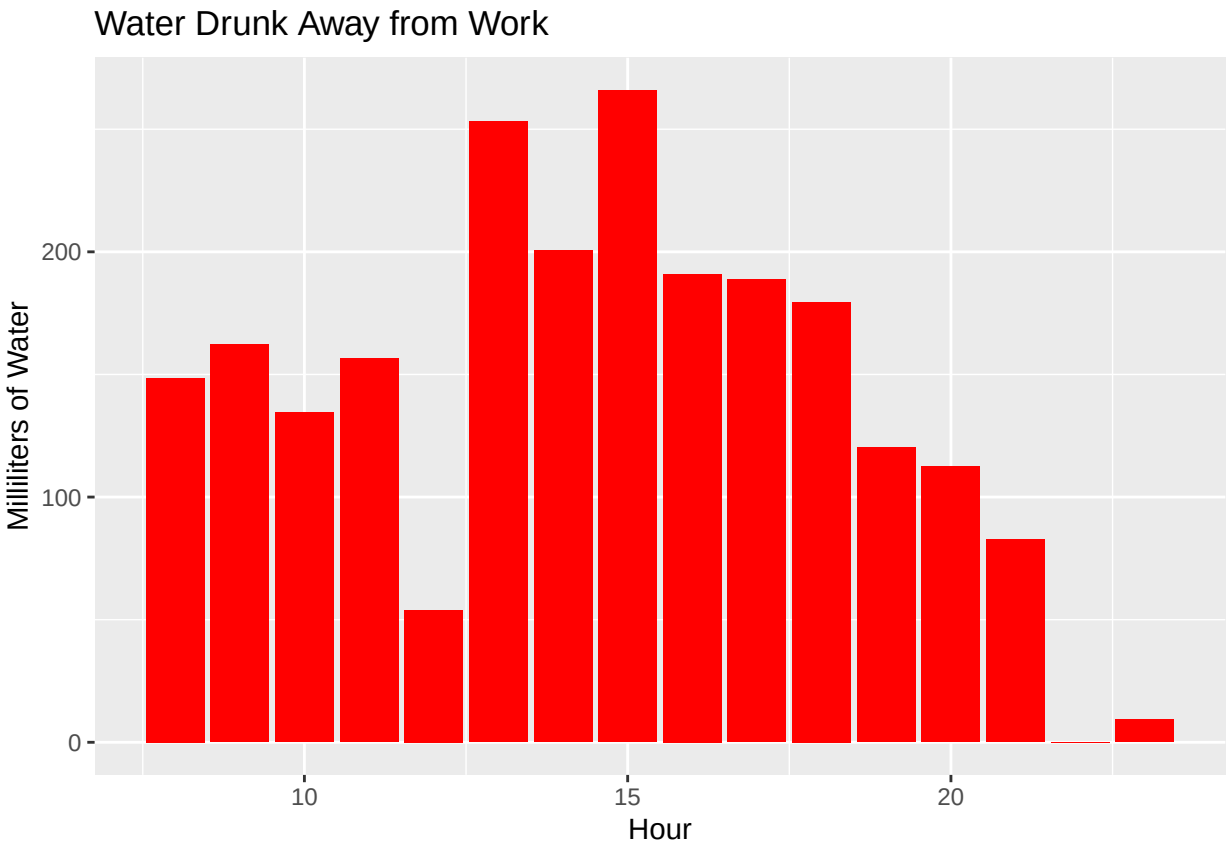
```
trueData <- projectData %>%
  filter(AtWork == "TRUE") %>%
  group_by(Hour) %>%
  summarise(mean_drank = mean(Drank))

falseData <- projectData %>%
  filter(AtWork == "FALSE") %>%
  group_by(Hour) %>%
  summarise(mean_drank = mean(Drank))
```

```
ggplot(data = trueData, aes(x = Hour, y = mean_drank))+
  geom_col(fill = "blue")+
  labs(title = "Water Drunk at Work", x = "Hour", y = "Milliliters of Water")
```




```
ggplot(data = falseData, aes(x = Hour, y = mean_drank))+
  geom_col(fill = "red") +
  labs(title = "Water Drunk Away from Work", x = "Hour", y = "Milliliters of Water")
```



Run the t-test

```
t.test(Drank~AtWork, data = projectData, alternative = "less")
```

```
##
##  Welch Two Sample t-test
##
## data:  Drank by AtWork
## t = -0.98698, df = 128.5, p-value = 0.1628
## alternative hypothesis: true difference in means between group FALSE and group TRUE is less than 0
## 95 percent confidence interval:
##      -Inf 20.80424
## sample estimates:
## mean in group FALSE  mean in group TRUE
##            130.9881            161.6429
```

Creating the direct comparison graph

```
finalData <- data.frame(xaxis = c("At Work", "Away From Work"),
           yaxis = c(161.6429, 130.9881))
```

```
ggplot(data = finalData, aes(x = xaxis, y = yaxis))+
  geom_col(fill = "brown") +
  labs(title = "Mean water drunk at and away from work", x="Where Water was Drunk", y = "Milliliters pe
```