Untitled

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```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.1     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- 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
```

```
library(ggplot2)
library(readxl)
library(ggplot2)
```

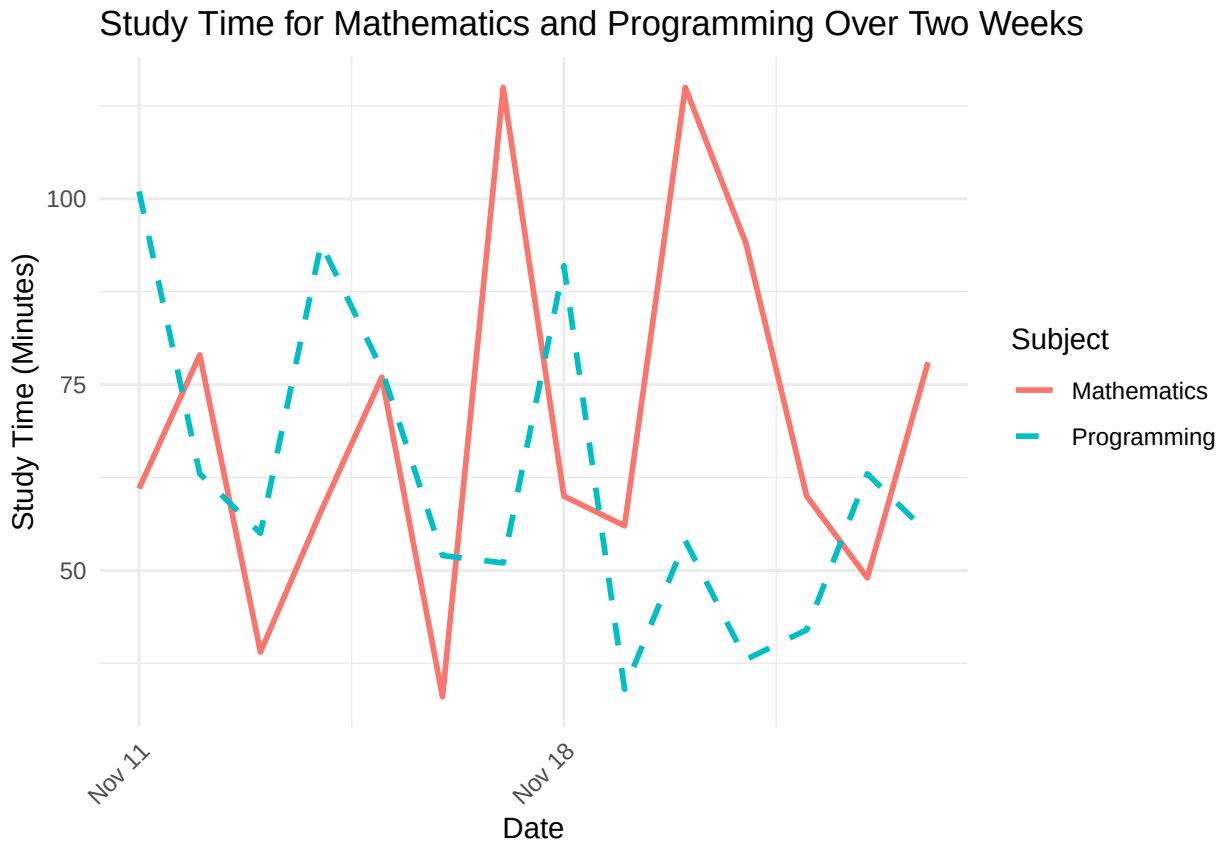
```
final_data_001 <- read_excel("final data.001.xlsx")
```

```
Mathematics <- final_data_001$Mathematics
Programming <- final_data_001$Programming

t_test_result <- t.test(Programming, Mathematics, alternative = "greater", var.equal = FALSE)

print(t_test_result)
```

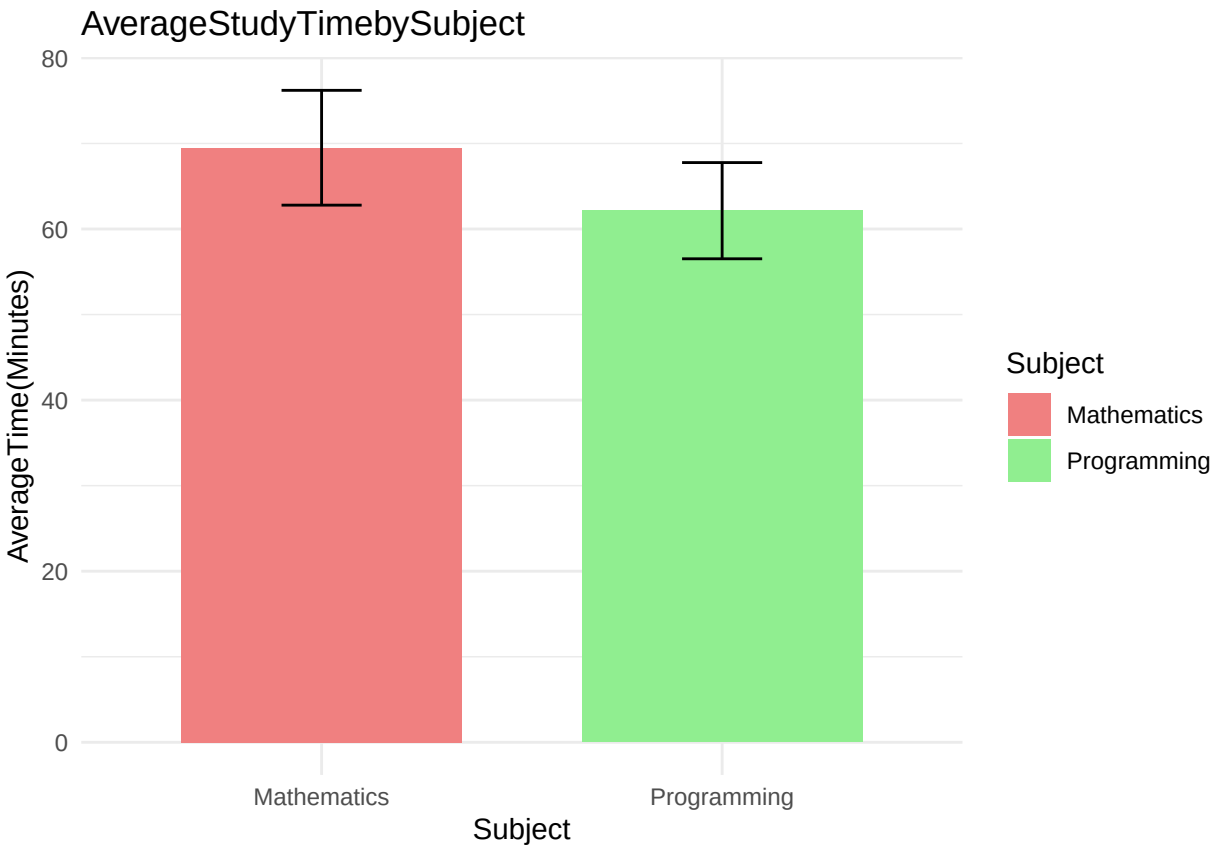
```
##
##  Welch Two Sample t-test
##
## data:  Programming and Mathematics
## t = -0.84031, df = 25.228, p-value = 0.7957
## alternative hypothesis: true difference in means is greater than 0
## 95 percent confidence interval:
##  -22.3072      Inf
## sample estimates:
## mean of x mean of y
##  62.14286  69.50000
```

```
ggplot(final_data_001, aes(x = Date)) +
  geom_line(aes(y = Mathematics, color = "Mathematics"), size = 1) +
  geom_line(aes(y = Programming, color = "Programming"), size = 1, linetype = "dashed") +
  labs(title = "Study Time for Mathematics and Programming Over Two Weeks",
       x = "Date", y = "Study Time (Minutes)", color = "Subject") +
  theme_minimal() +
  theme(axis.text.x = element_text(angle = 45, hjust = 1))
```

```
## Warning: Using 'size' aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use 'linewidth' instead.
## This warning is displayed once every 8 hours.
## Call 'lifecycle::last_lifecycle_warnings()' to see where this warning was
## generated.
```




```
means<-c(mean(Programming),mean(Mathematics))
std_errors<-c(sd(Programming)/sqrt(length(Programming)), sd(Mathematics) /sqrt(length(Mathematics)))
plot_data<-data.frame(Subject=c("Programming","Mathematics"),Mean=means,SE=std_errors)
ggplot(plot_data, aes(x=Subject,y=Mean,fill=Subject)) +
  geom_bar(stat="identity",position="dodge",width=0.7)+
  geom_errorbar(aes(ymin=Mean-SE,ymax=Mean +SE),width=0.2) +
  labs(title="AverageStudyTimebySubject",y="AverageTime(Minutes)",x="Subject") +
  theme_minimal()+
  scale_fill_manual(values= c("lightcoral","lightgreen"))
```


AverageStudyTimebySubject
80
60
40
20
0
AverageTime(Minutes)
Mathematics
Programming
Subject
Subject
Mathematics
Programming