

Data Visualization of Student Marks Over Terms

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clearing the directory and loading all needed packages

```
#clearing everything
rm(list=ls())

library(dplyr)
library(ggplot2)
library(gganimate)
library(RColorBrewer)
library(png)
library(gifs)
library(knitr)
library(animation)
```

Loading the data(in long format)

```
#data<-read_excel("C:\\Users\\Dorcas\\Documents\\CCHUB Education\\relearn\\Raw Data\\longdata.xlsx")
data<-read_csv("C:\\Users\\Dorcas\\Documents\\CCHUB Education\\relearn\\Raw Data\\long.csv")
data$term<-as.integer(data$term)
str(data)

## 'data.frame':   318 obs. of  8 variables:
## $ X             : int  1 2 3 4 5 6 7 8 9 10 ...
## $ subject       : Factor w/ 106 levels "per1","per10",...: 1 19 30 41 52 63 74 85 96 2 ...
## $ term          : int  1 1 1 1 1 1 1 1 1 1 ...
## $ marks         : int  49 48 41 41 40 39 38 35 32 31 ...
## $ group         : Factor w/ 2 levels "control","treatment": 2 2 2 2 2 2 2 2 2 2 ...
## $ city          : Factor w/ 3 levels "jigawa","kano",...: 1 1 1 1 1 1 1 1 1 1 ...
## $ modules       : Factor w/ 2 levels "chemistry","physics": 2 2 2 2 2 2 2 2 2 2 ...
## $ subject_taught: int  2 2 2 2 2 2 2 2 2 2 ...
```

generating colors

```
n=21 #no specific reason for choosing 21. it is purely random. This is the number of palettes you would
colors_pal<-brewer.pal.info[brewer.pal.info$category=='qual',] #choosing the type of color pallete (nam
col_vector = unlist(apply(brewer.pal, colors_pal$maxcolors, rownames(colors_pal))) #creating the colors
```

Checking for missing values

```
sapply(data, function(x) sum(is.na(x)))
```

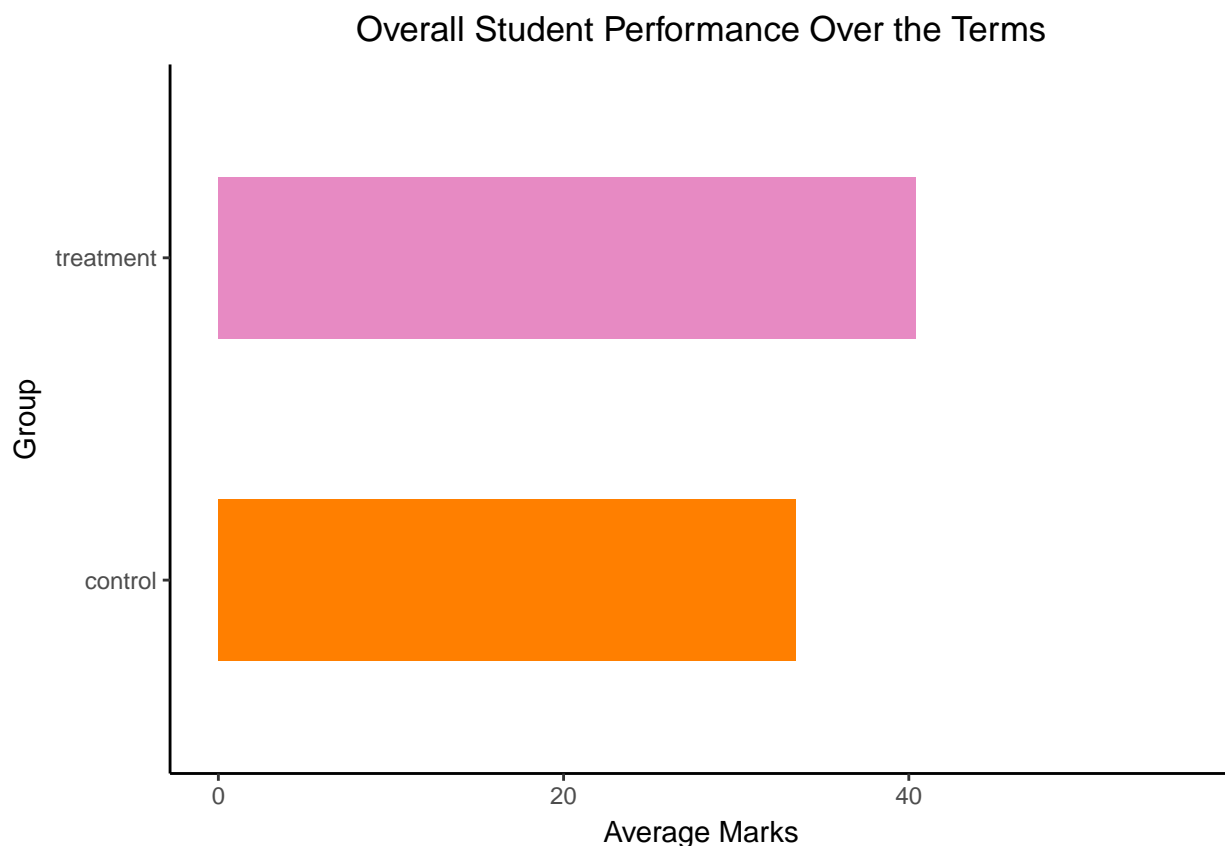
```
##           X           subject           term           marks           group
##           0             0             0             3             0
##      city      modules subject_taught
##           0             0             0
```

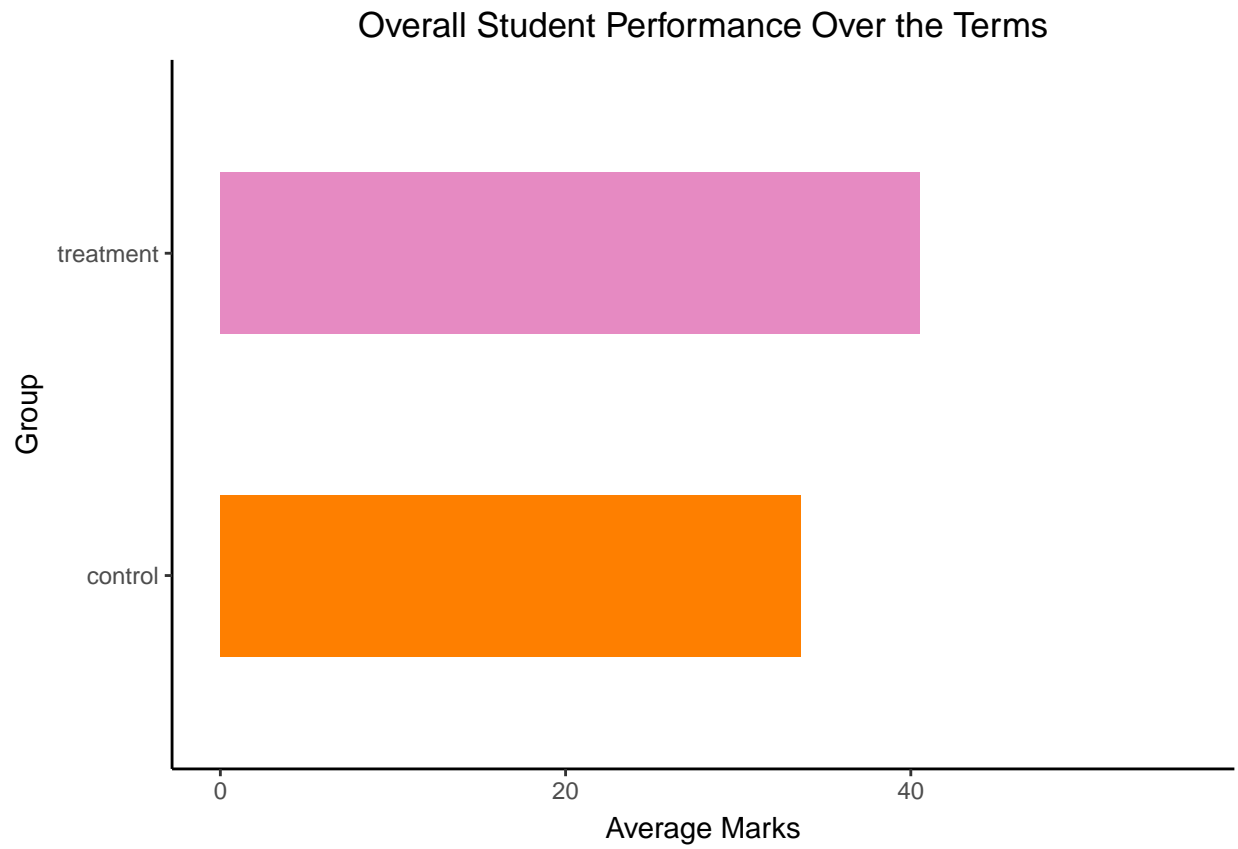
calculating average marks for each term first overall, then for each treatment and each subject

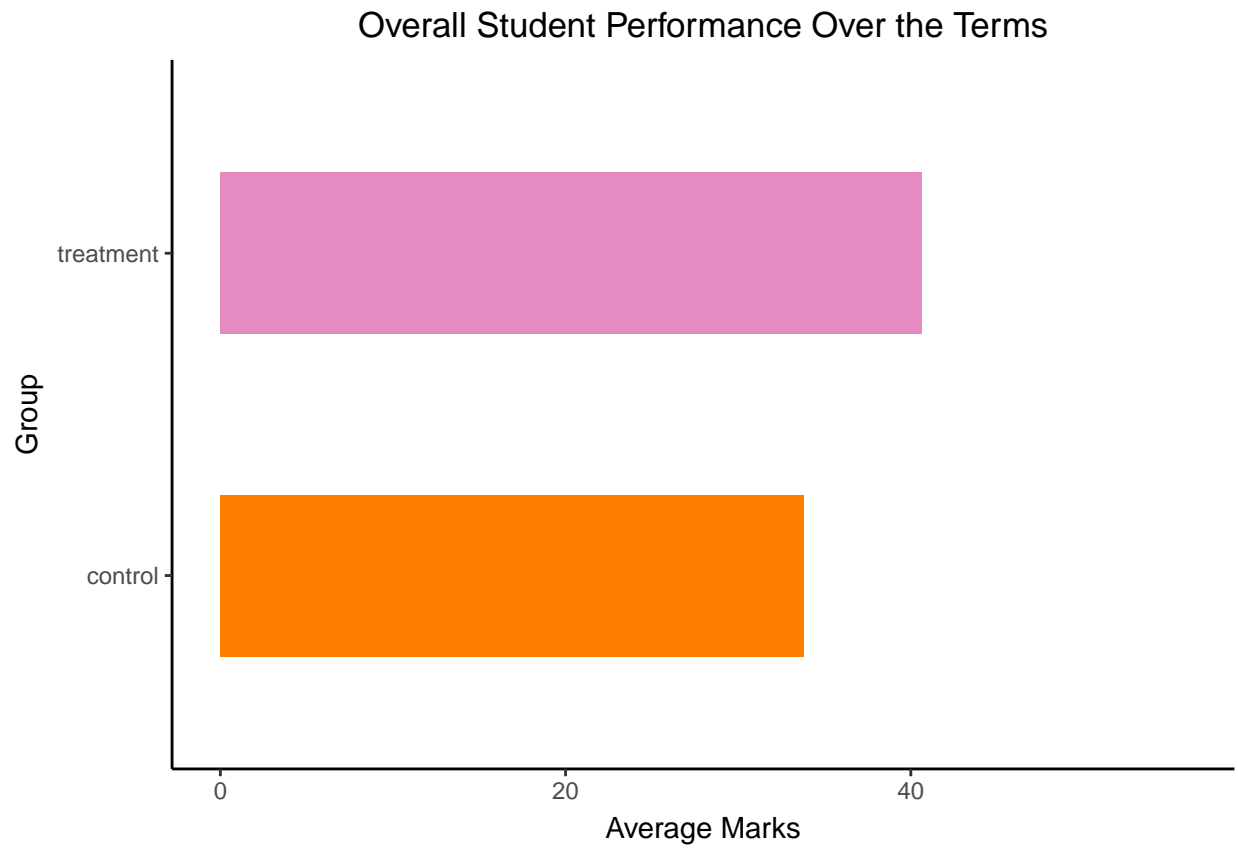
```
average_marks_overall<-data %>% group_by(term) %>% summarise(Performance = mean(marks, na.rm = T)) %>%  
average_marks_group<-data %>% group_by(term, group) %>% summarise(Performance = mean(marks, na.rm = T))  
average_marks_control<-data %>% subset(group=="control") %>% group_by(term, group) %>% summarise(Performance = mean(marks, na.rm = T))  
average_marks_treatment<-data %>% subset(group=="treatment") %>% group_by(term, group) %>% summarise(Performance = mean(marks, na.rm = T))  
average_marks_by_subject<-data %>% group_by(term,modules) %>% summarise(Performance = mean(marks, na.rm = T))
```

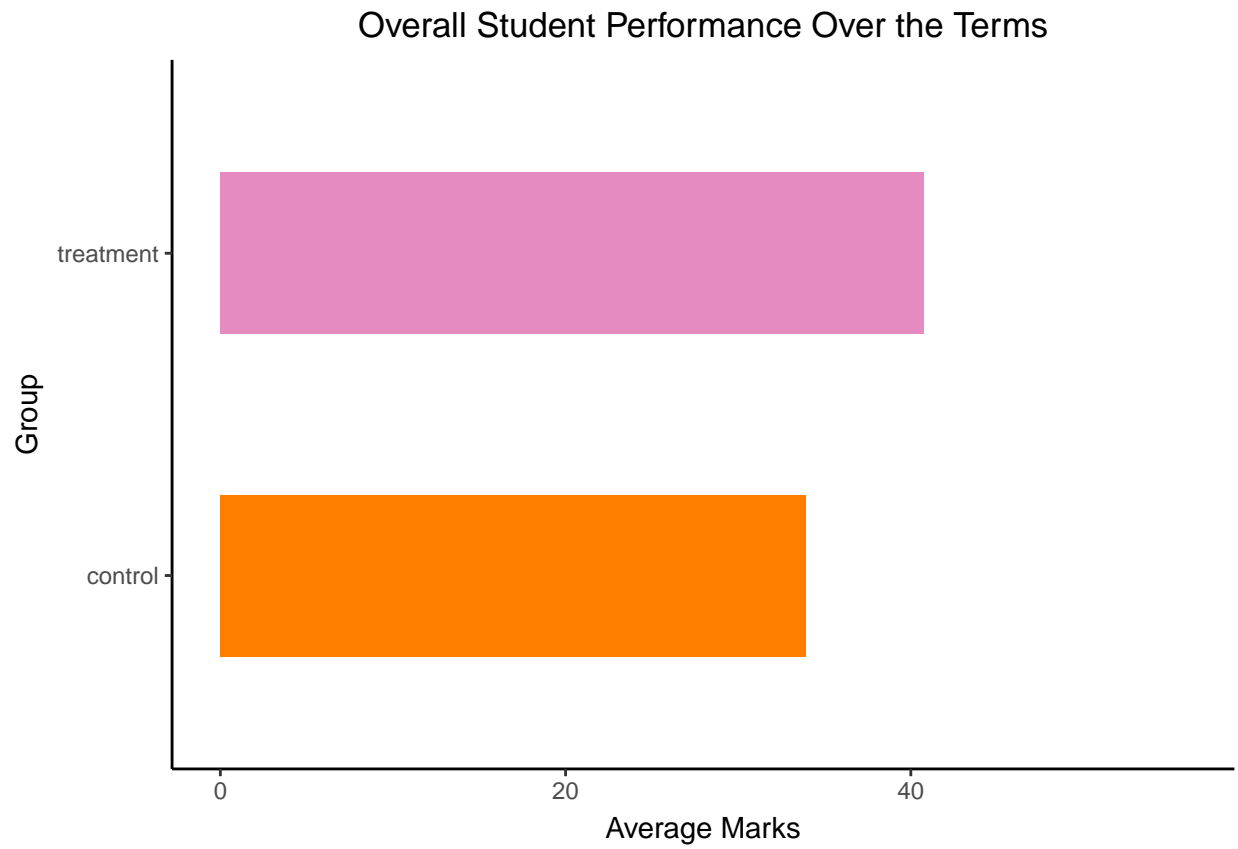
Plotting term-wise performance for treatment

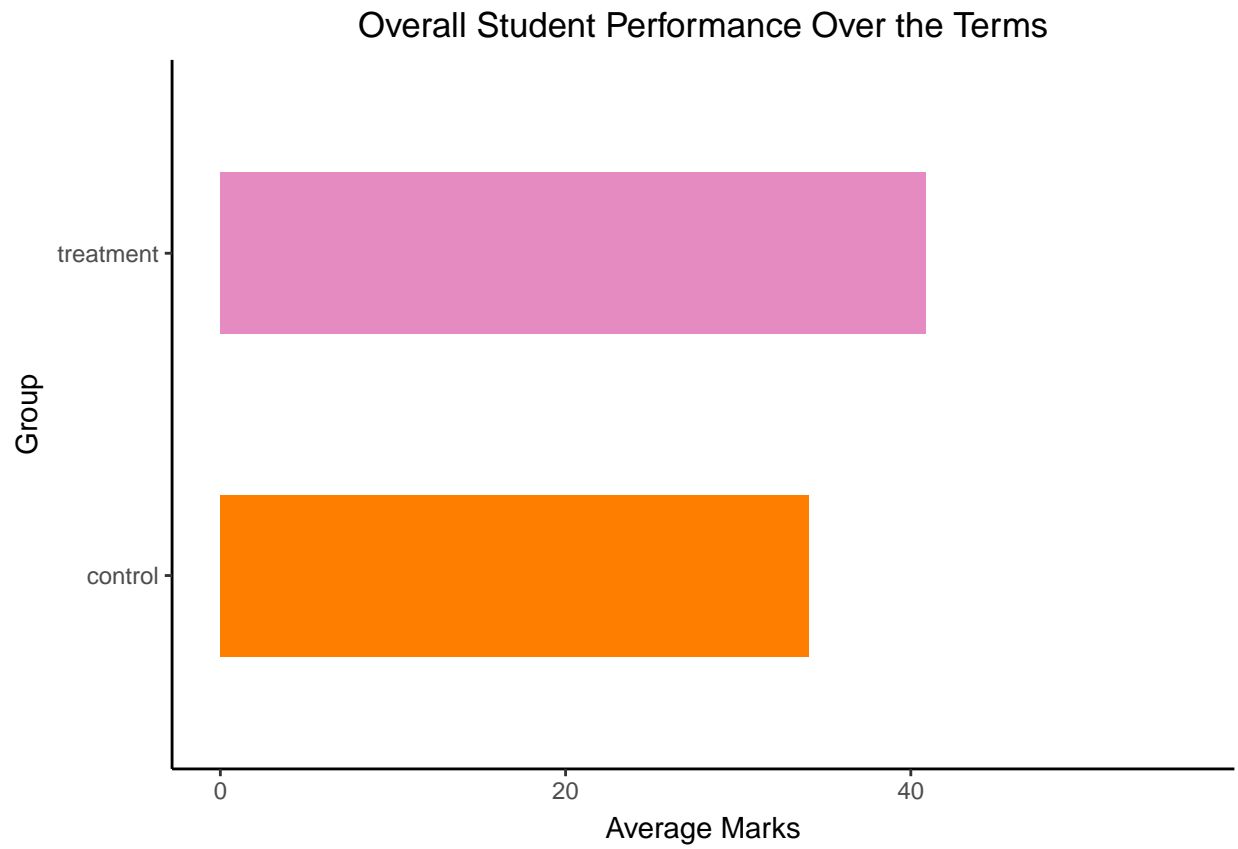
```
#treatment_plot  
ggplot(average_marks_group, aes(group,Performance,fill = group)) +  
  geom_bar(stat = "identity", width = 0.5) + theme_classic() + coord_flip() +  
  labs(title = 'Term: {frame_time}', x = 'Group', y = 'Average Marks') + transition_time(term) +  
  ggtitle("Overall Student Performance Over the Terms") +  
  theme(legend.position = "none", plot.title = element_text(hjust = 0.5)) +  
  scale_fill_manual(values = sample(col_vector, n))
```

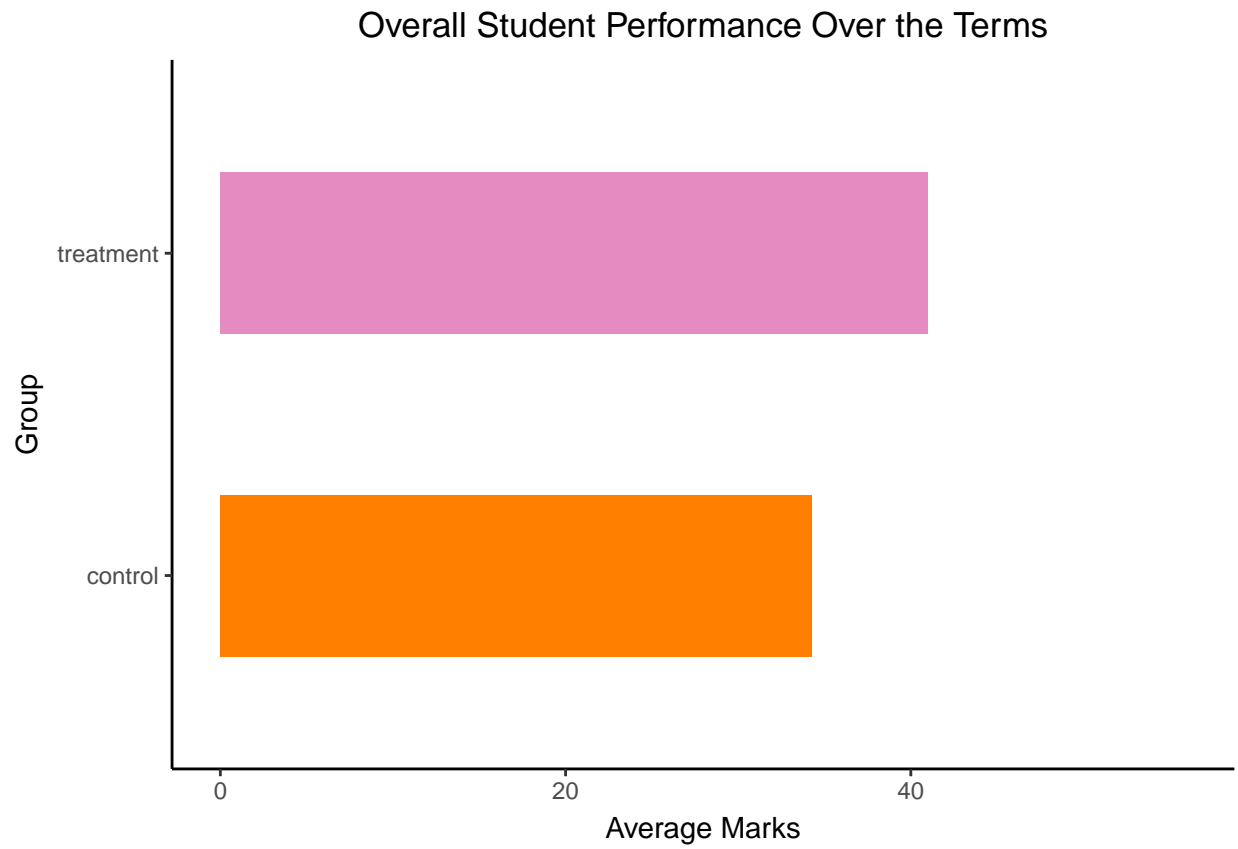


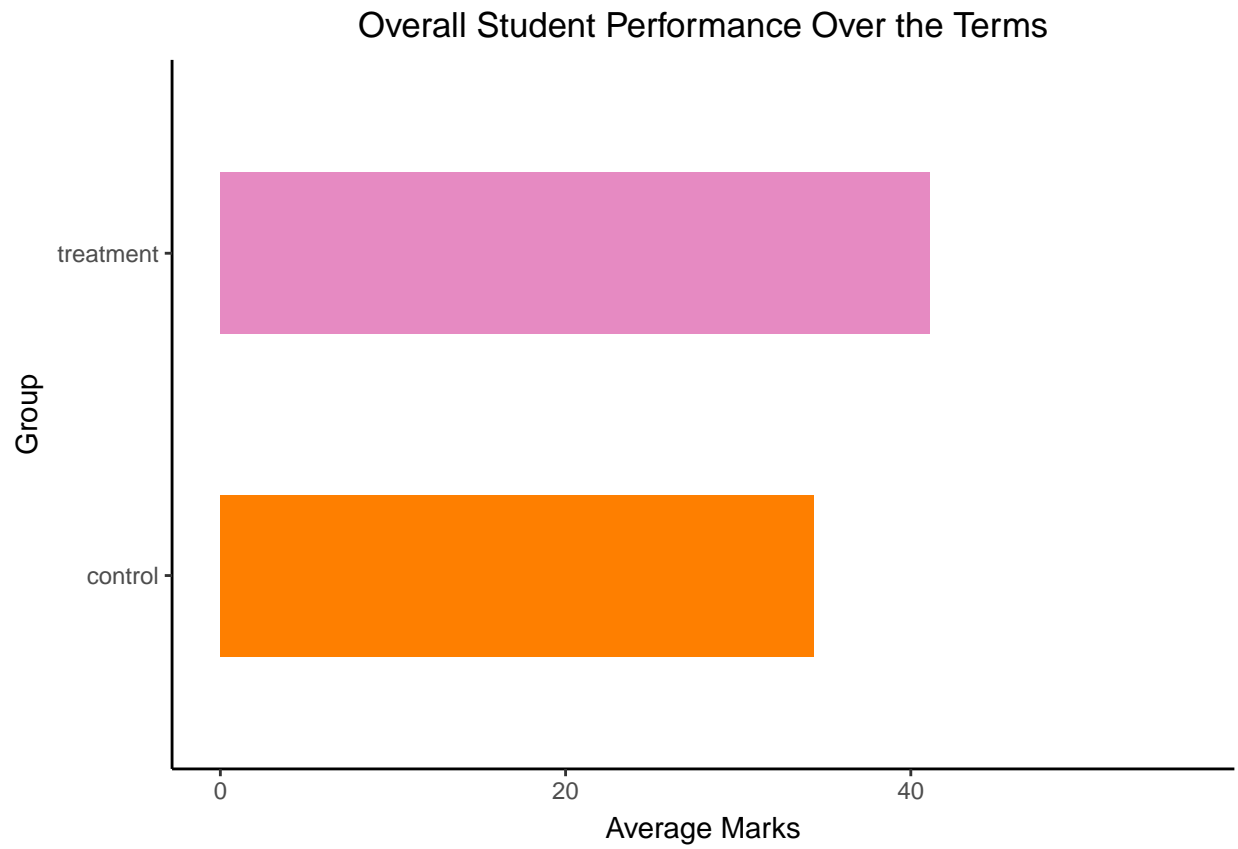


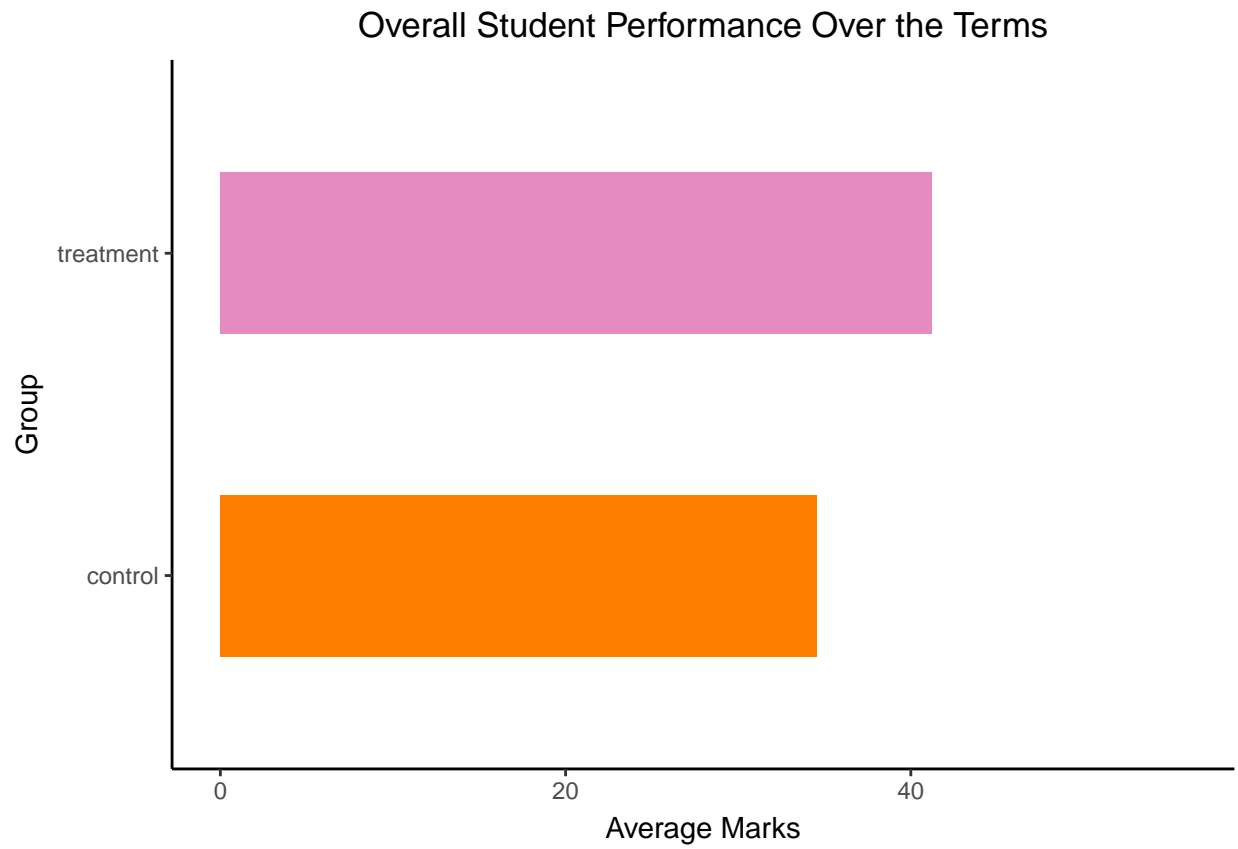


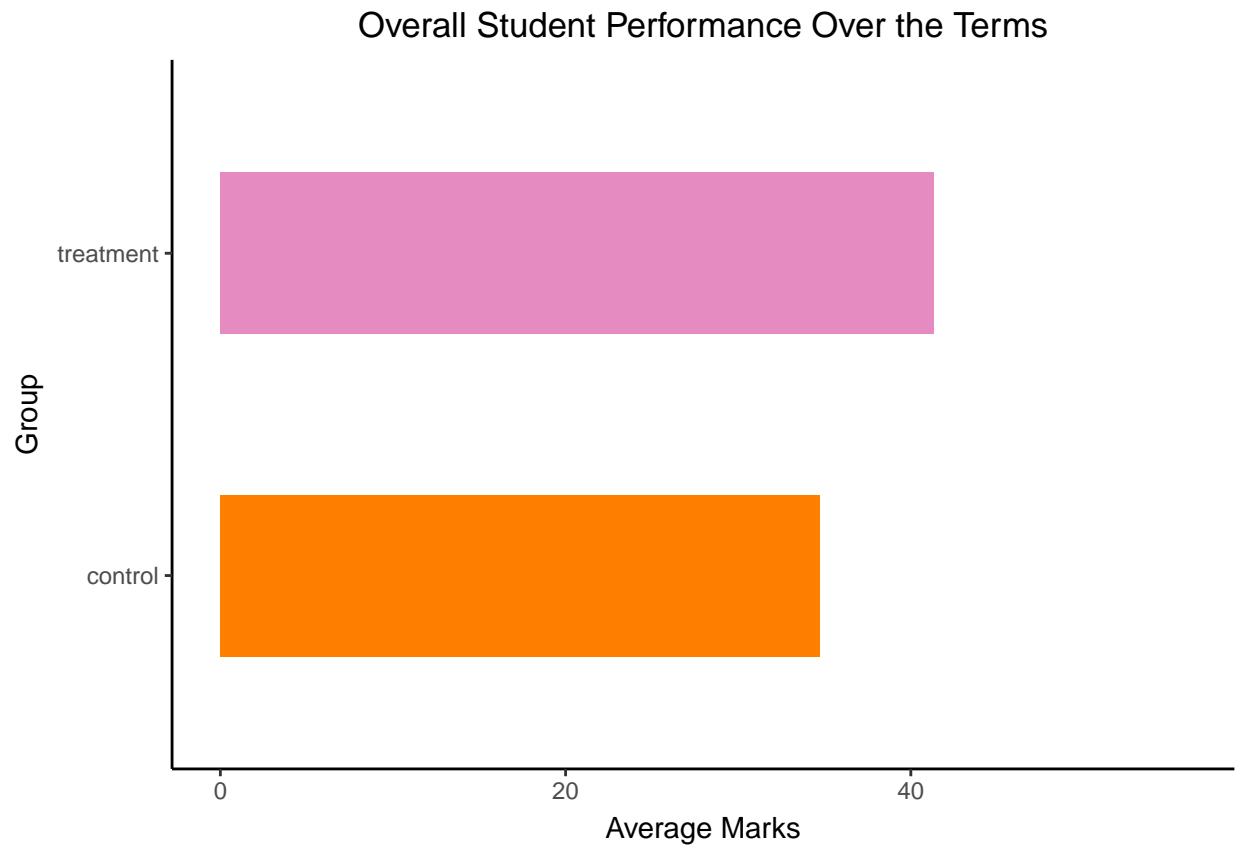


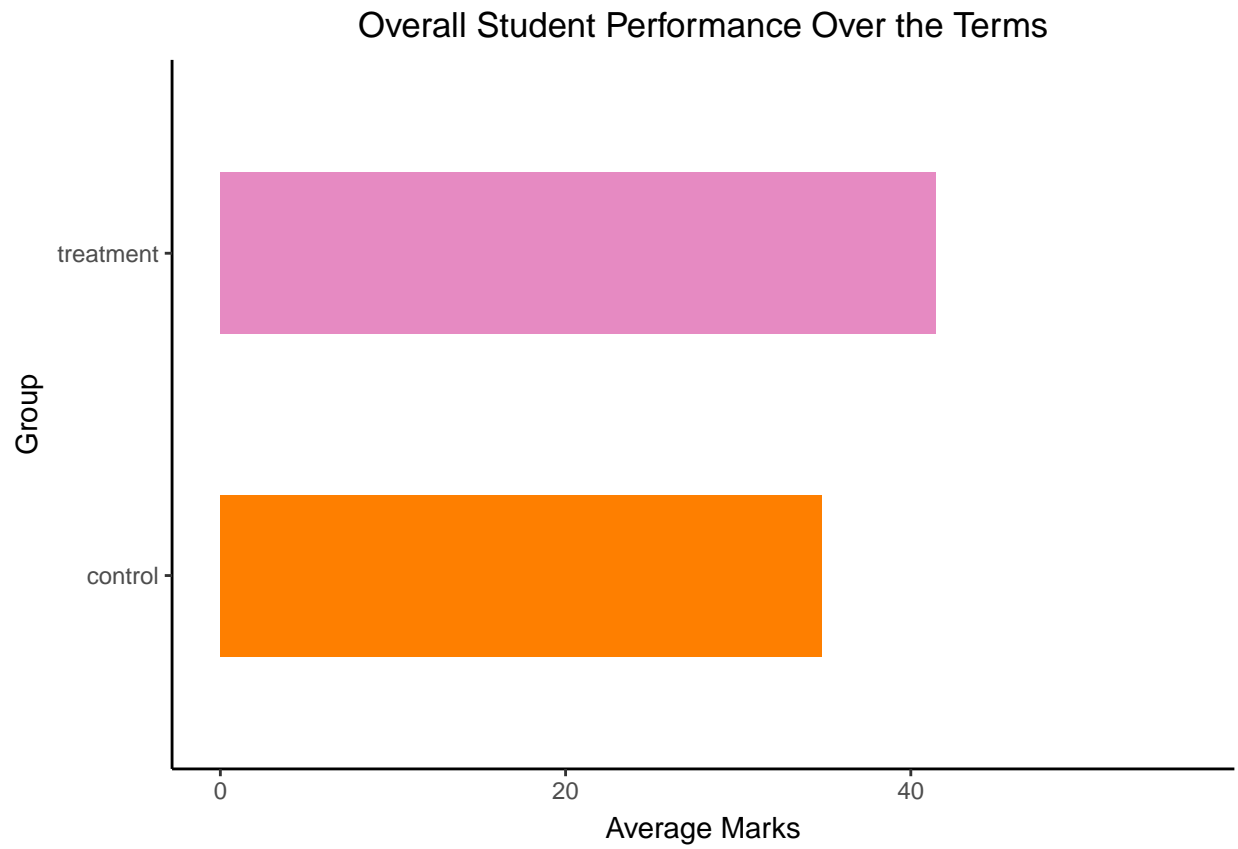


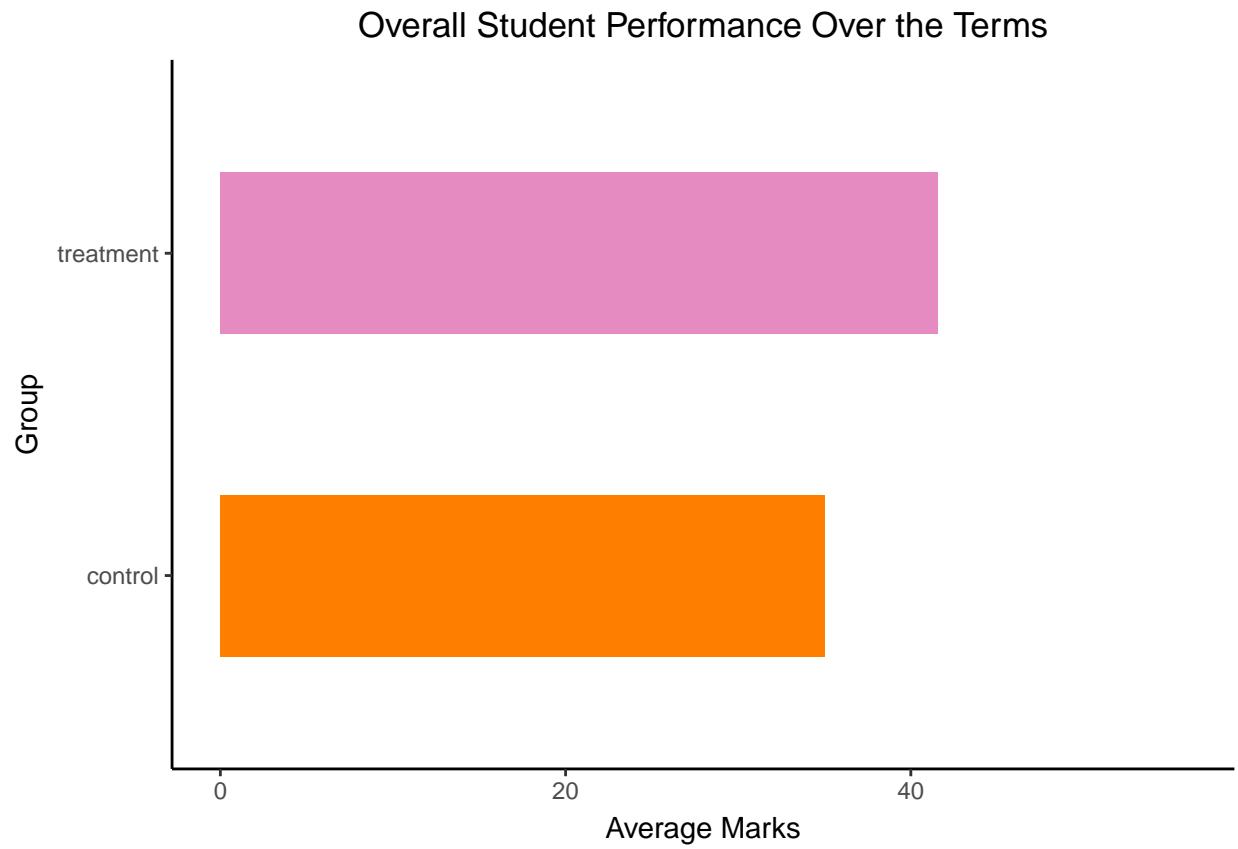


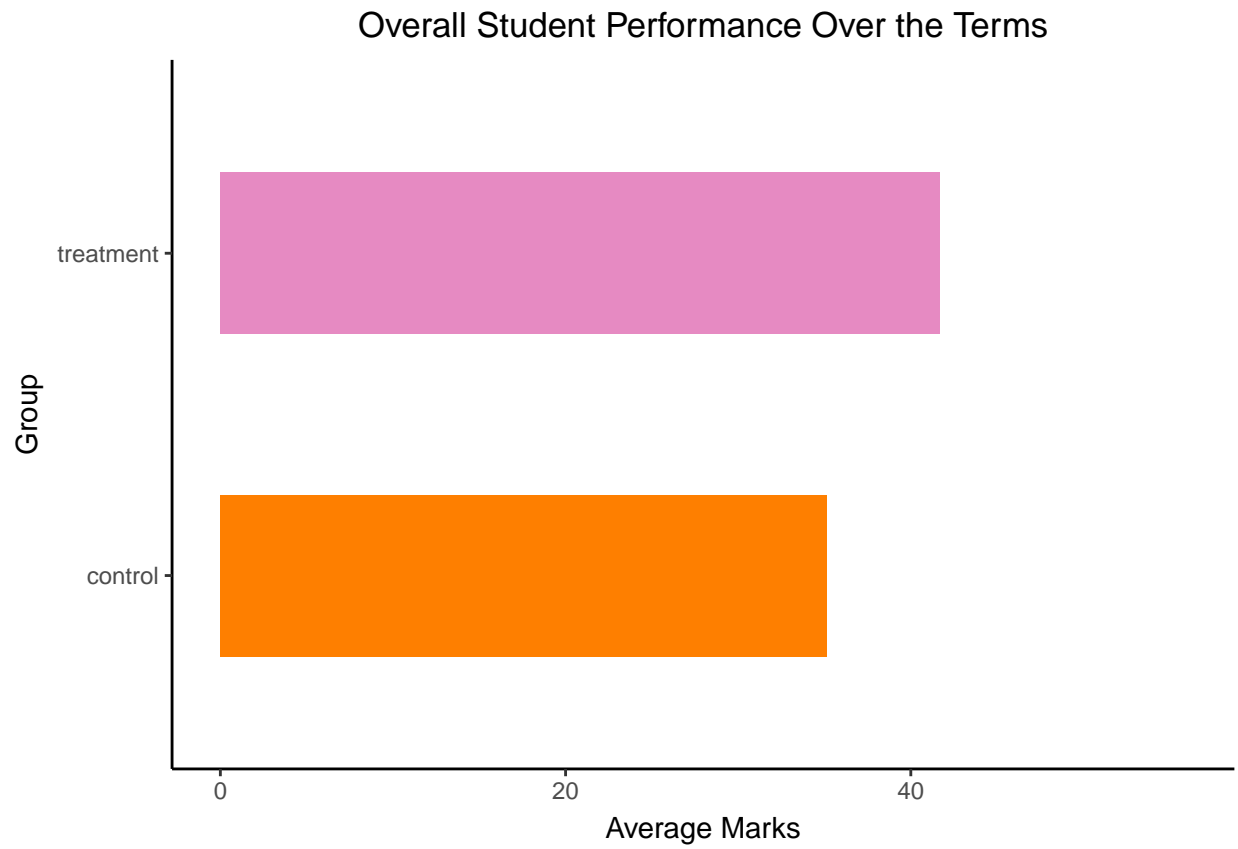


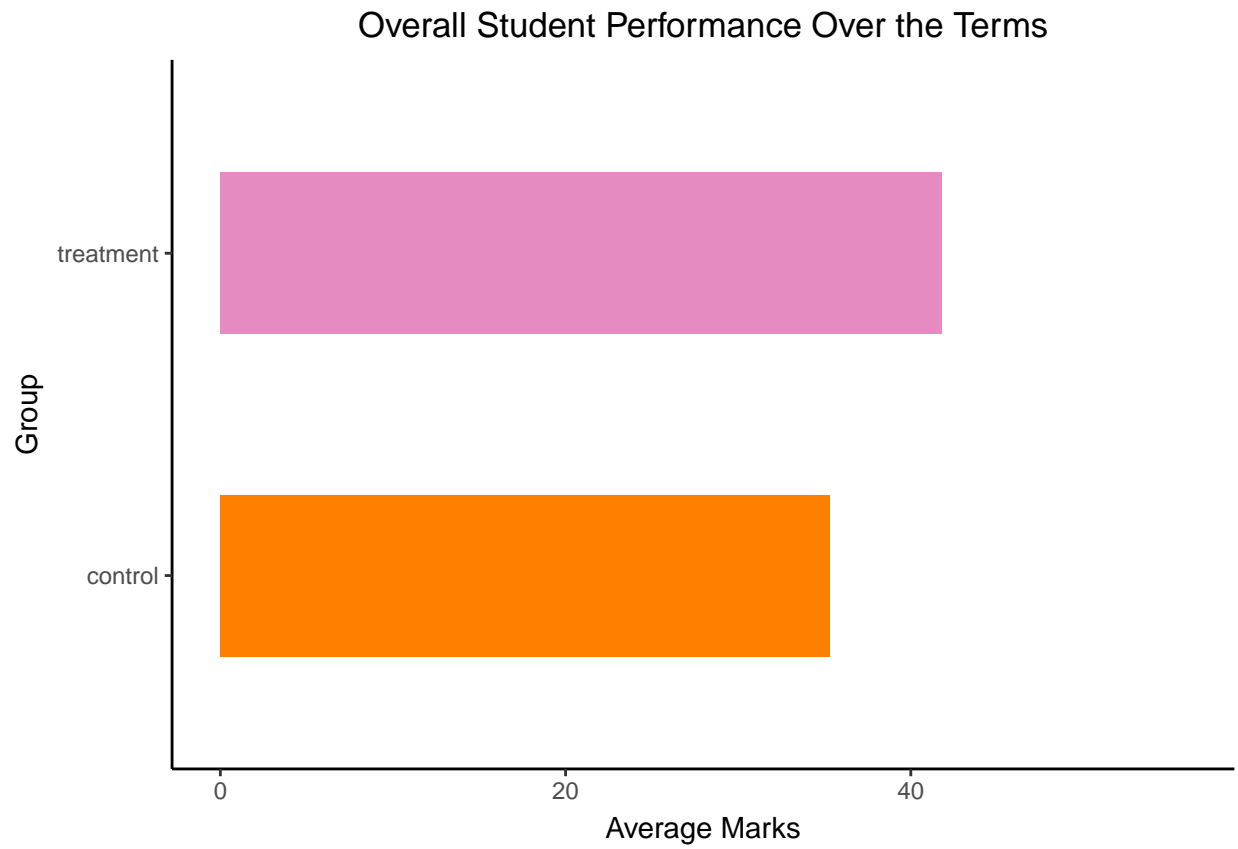


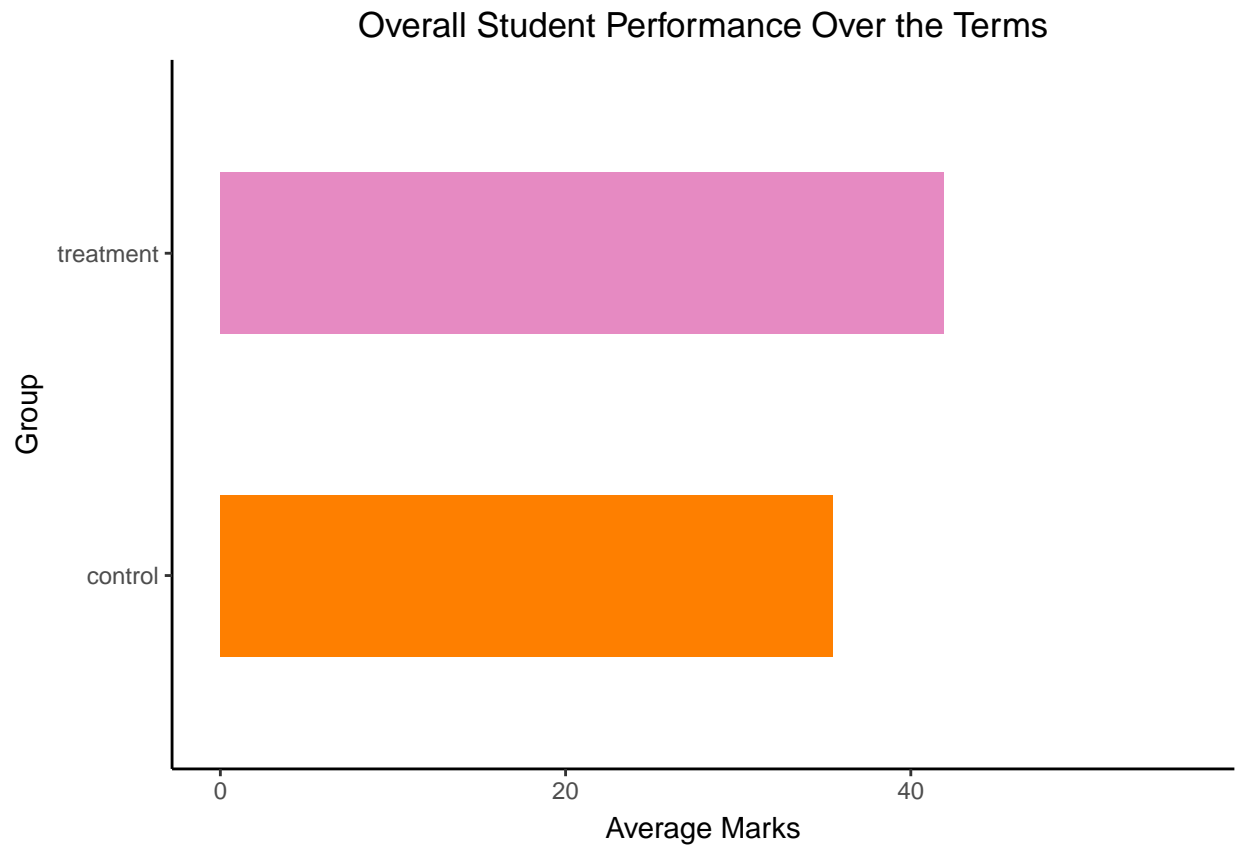


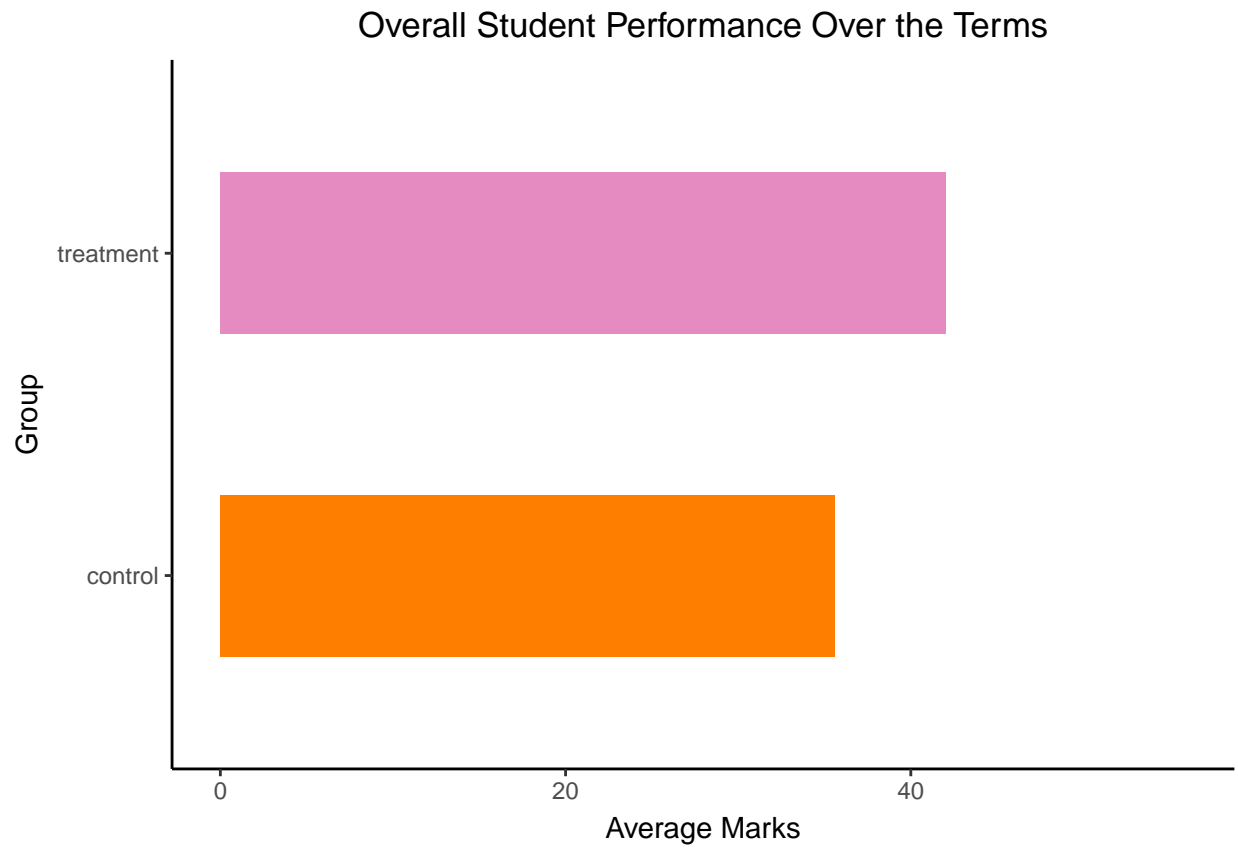


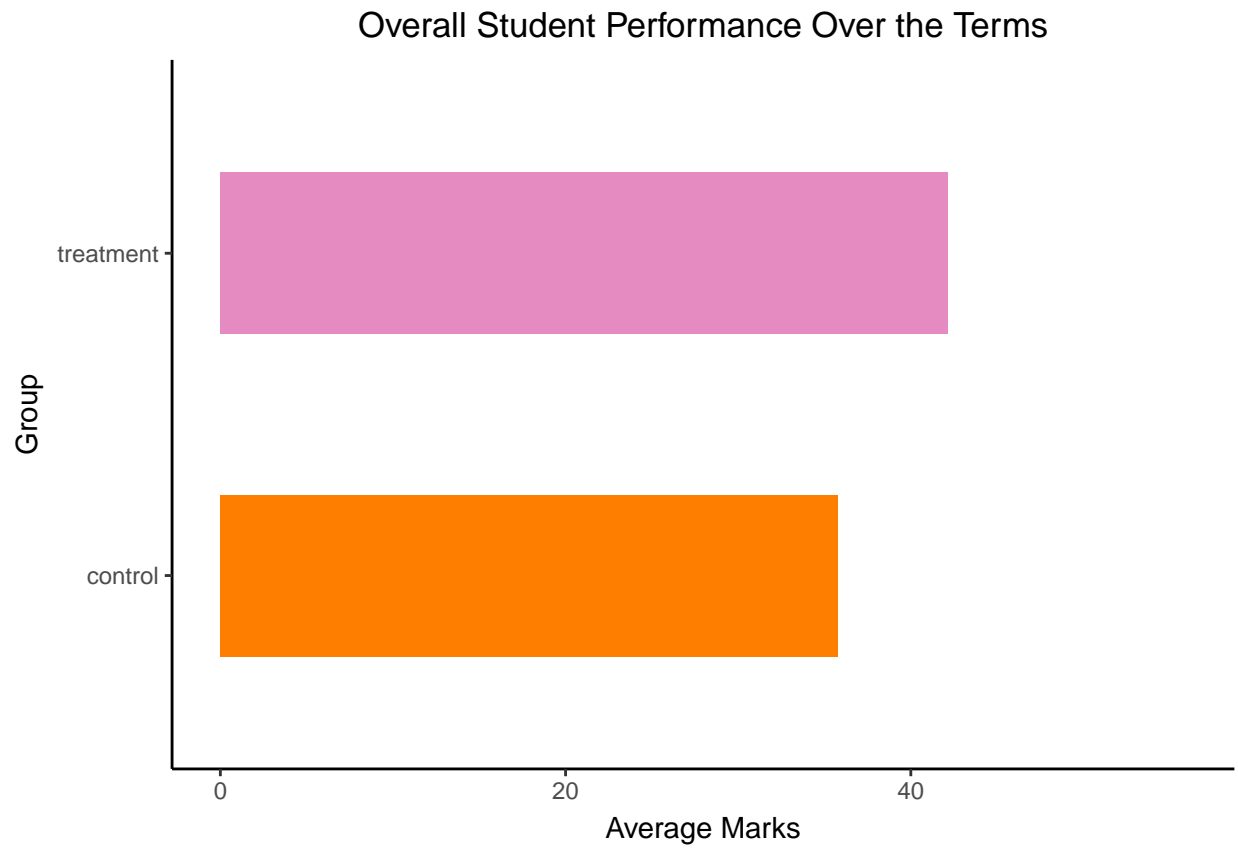


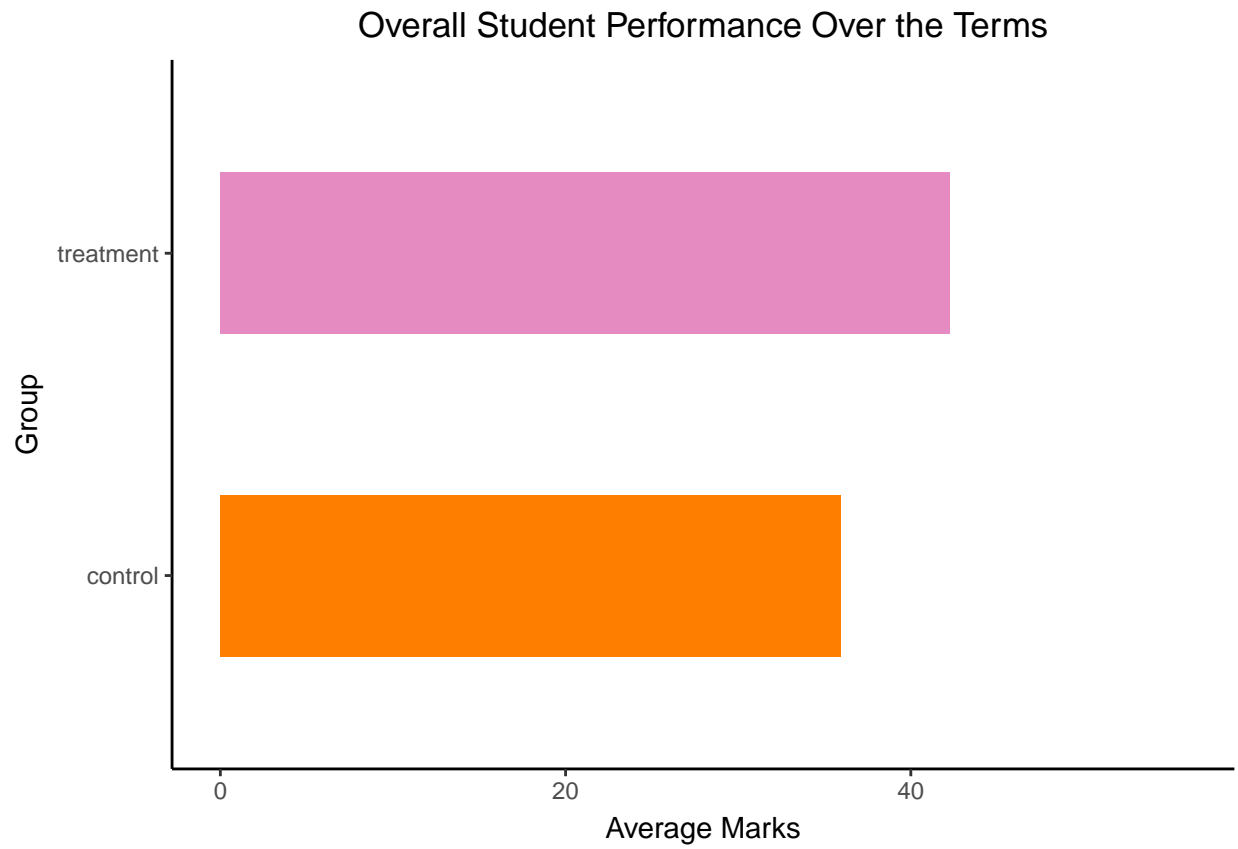


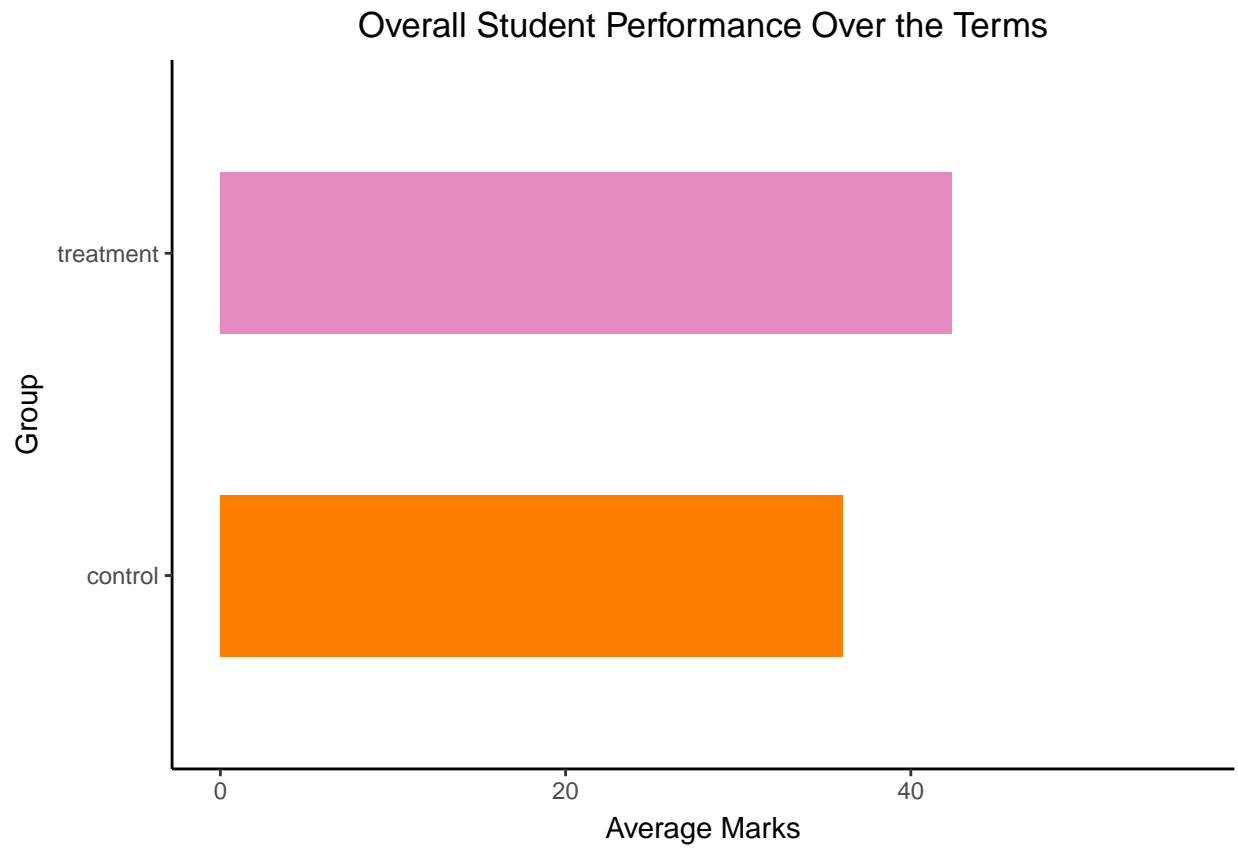


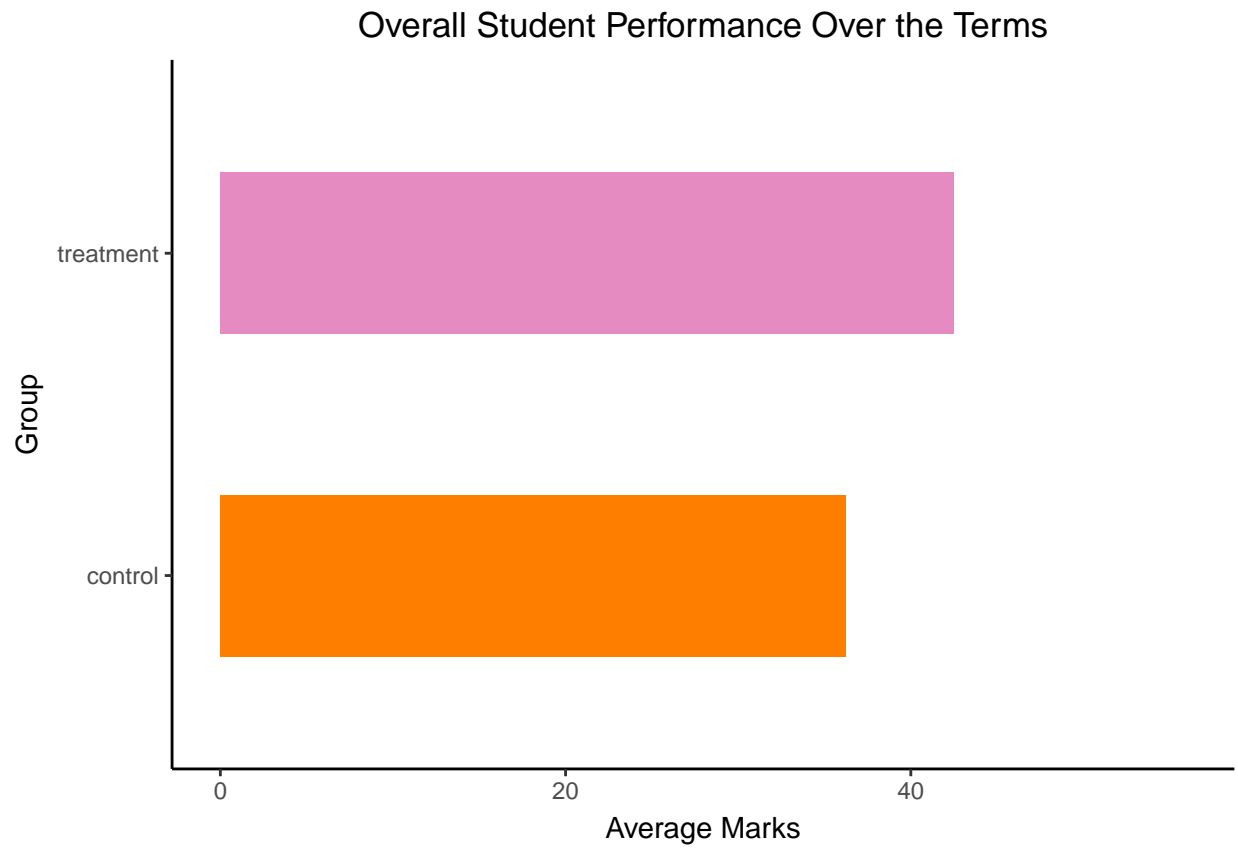


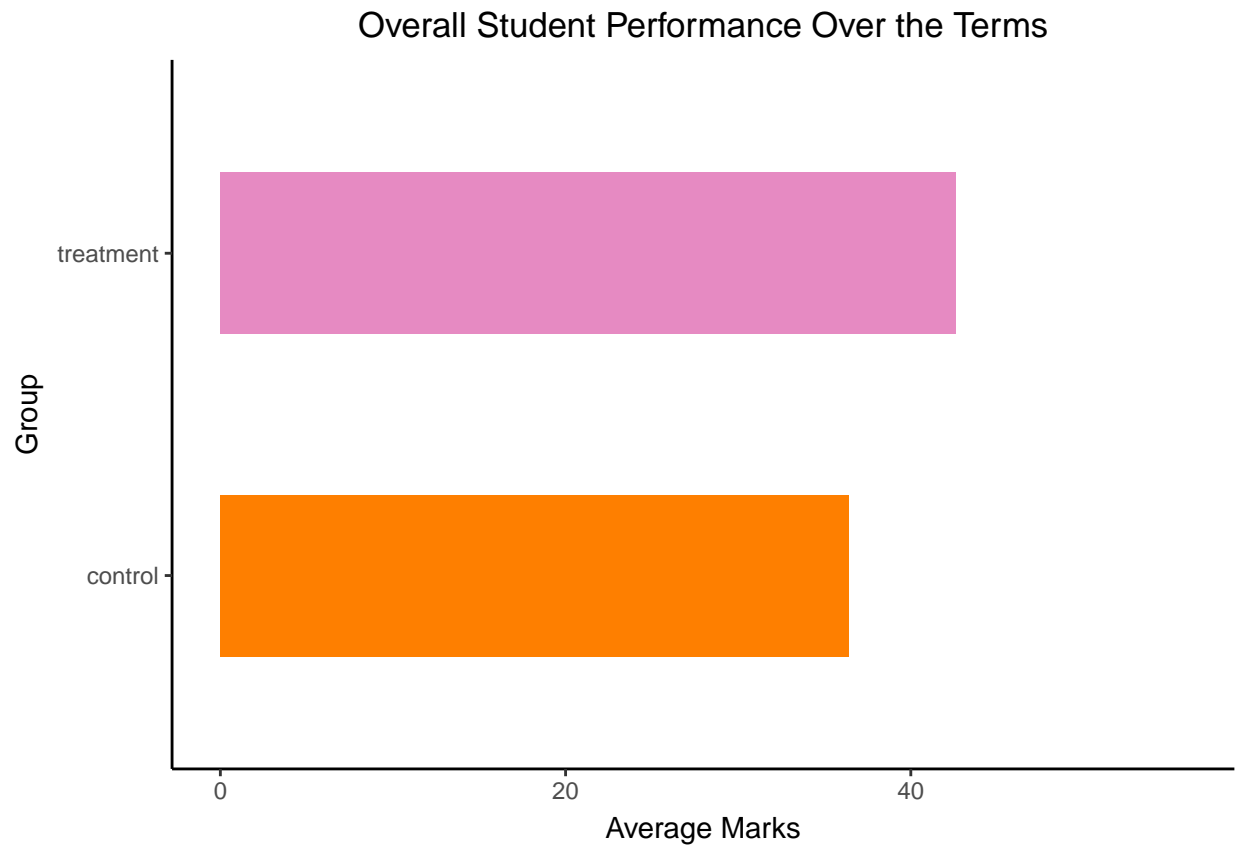


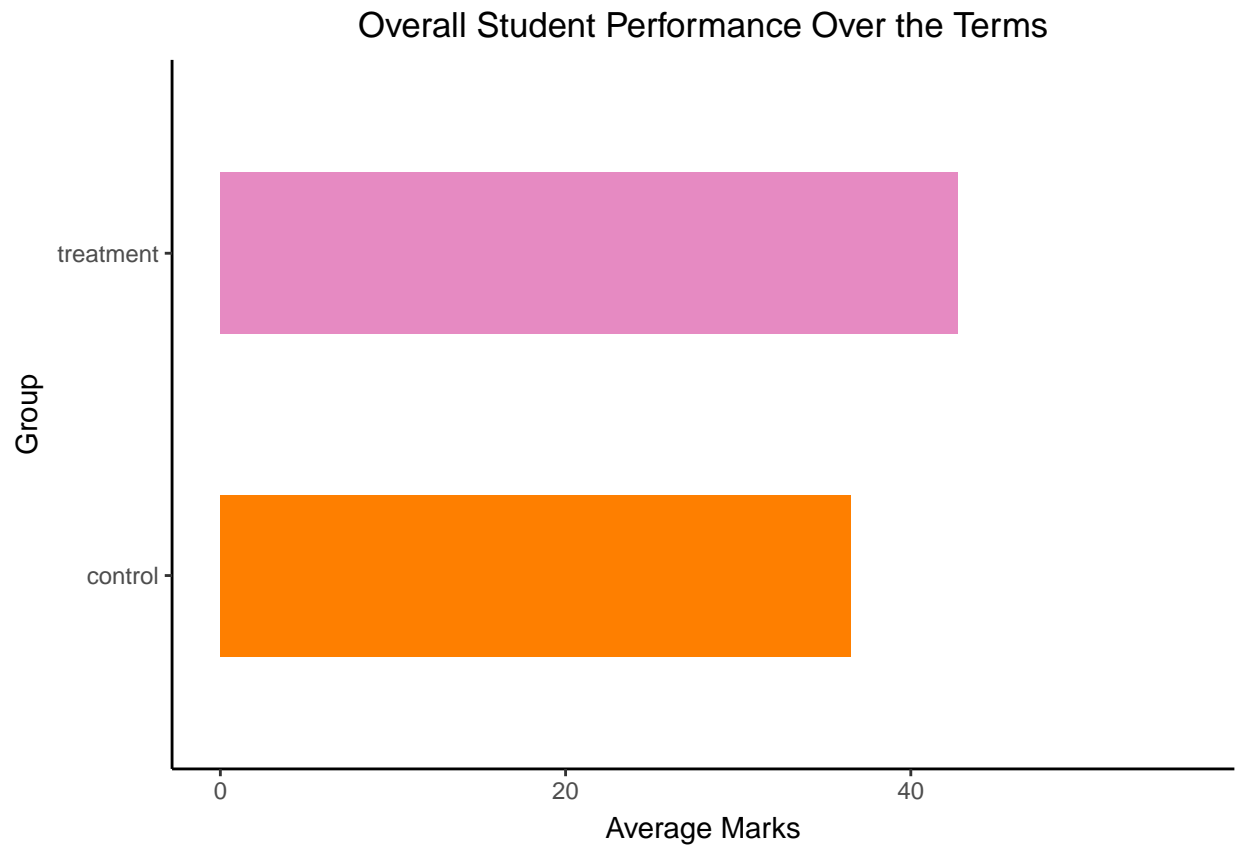


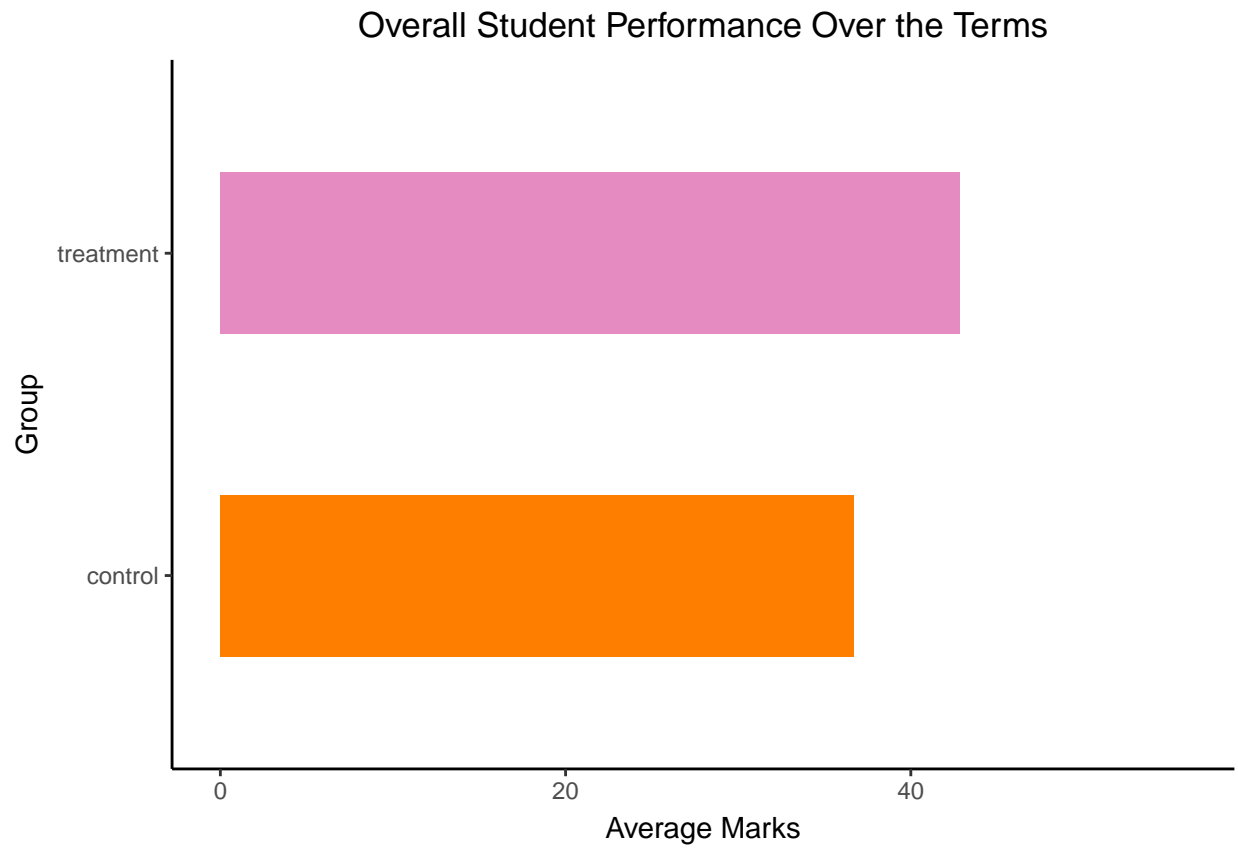


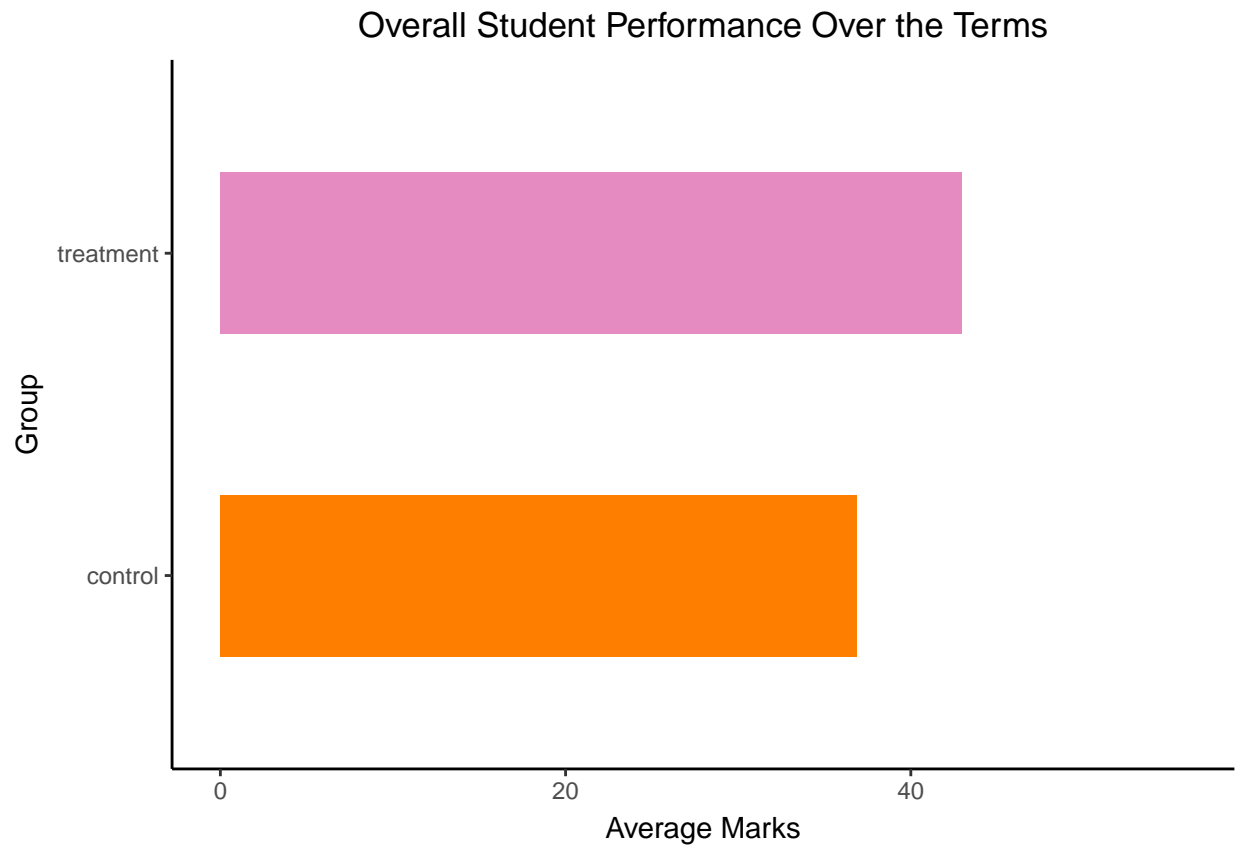


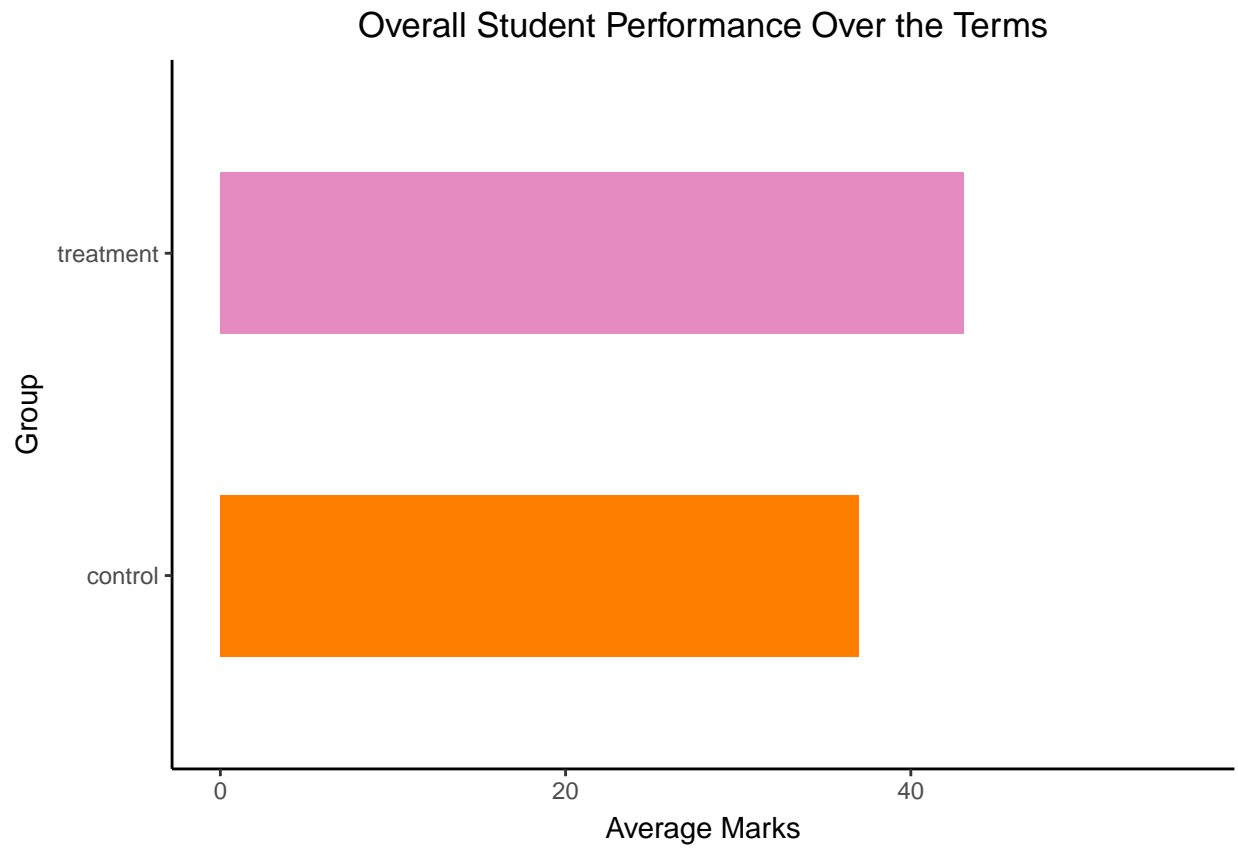


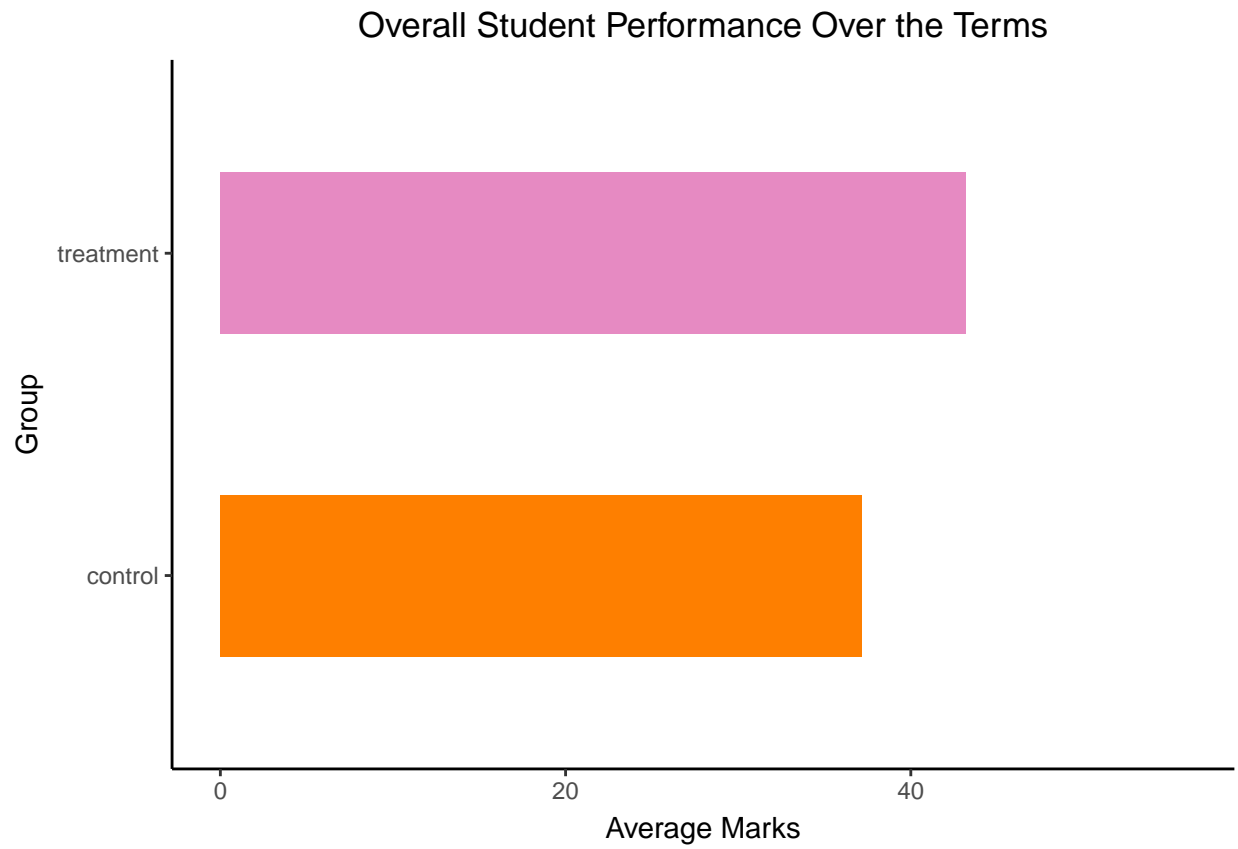


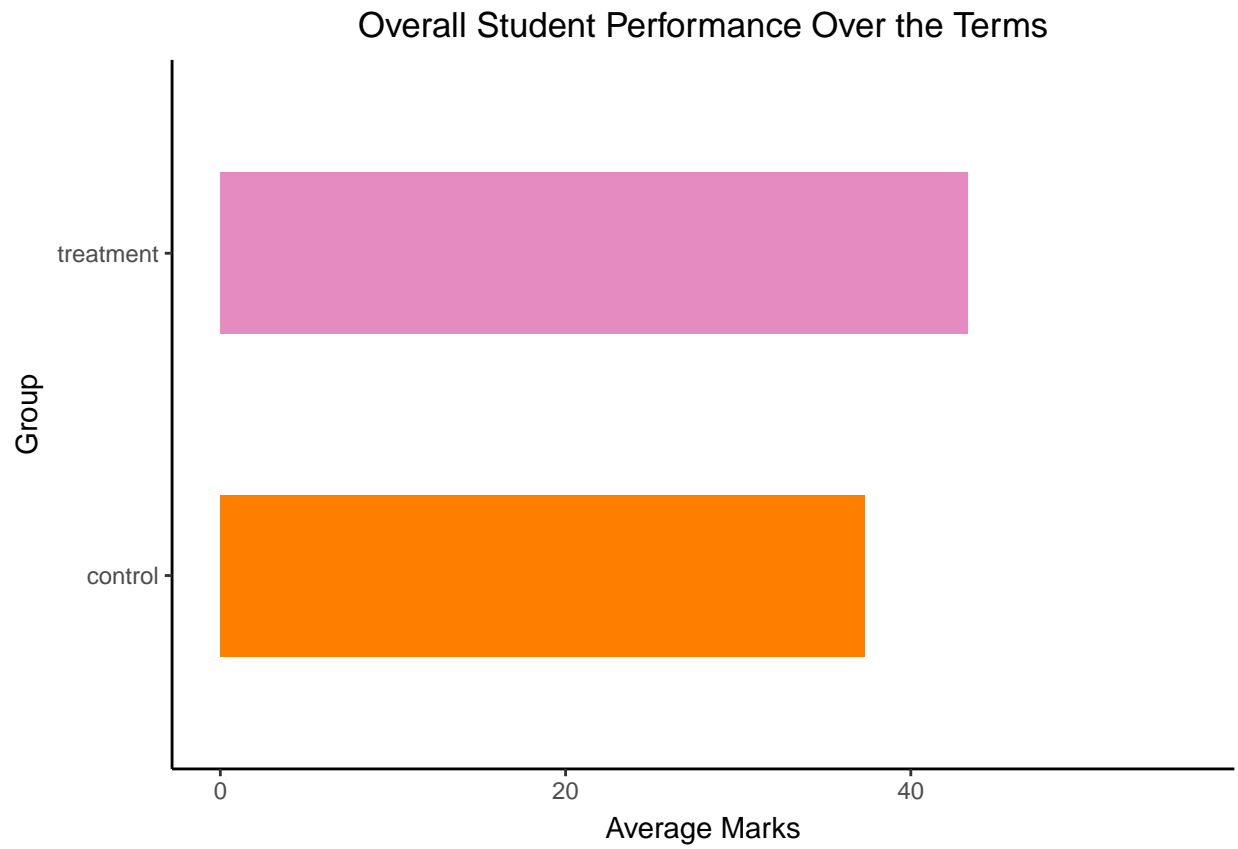


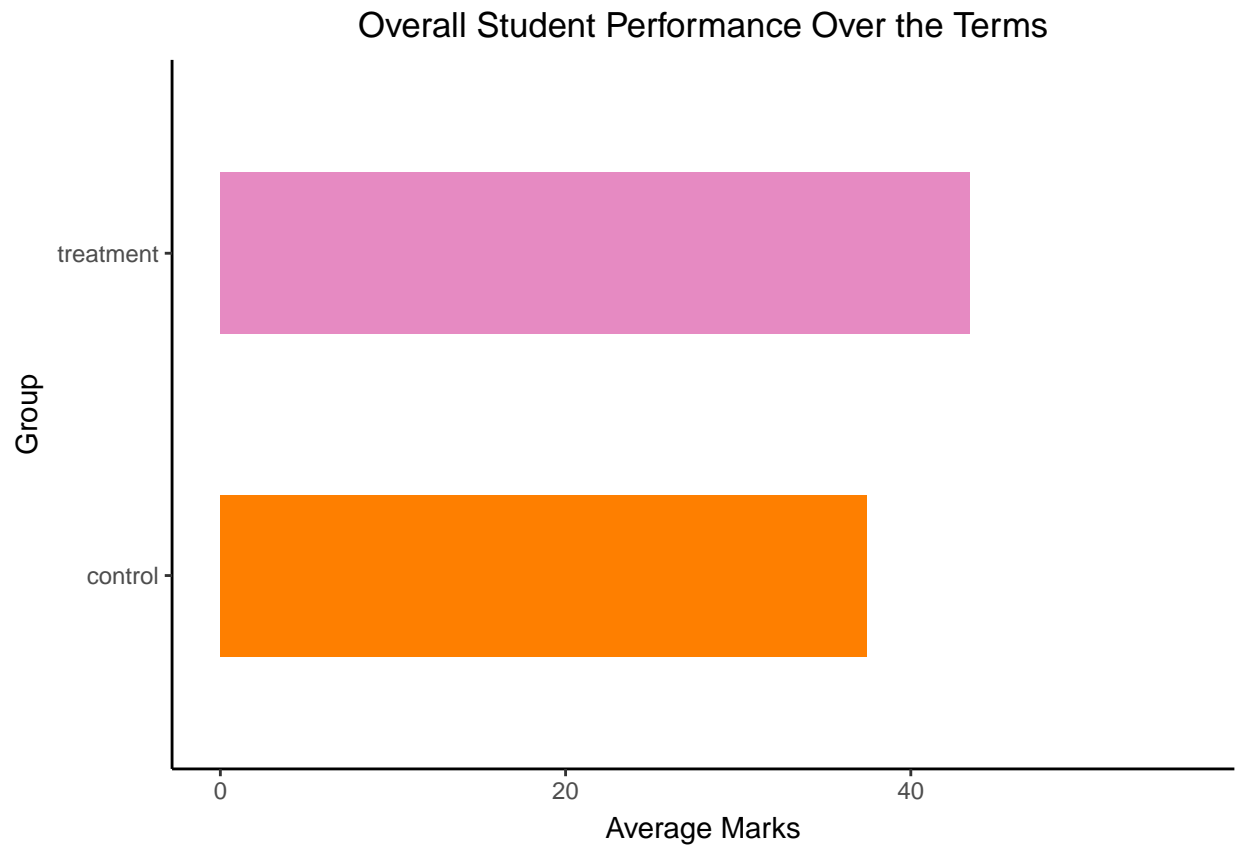


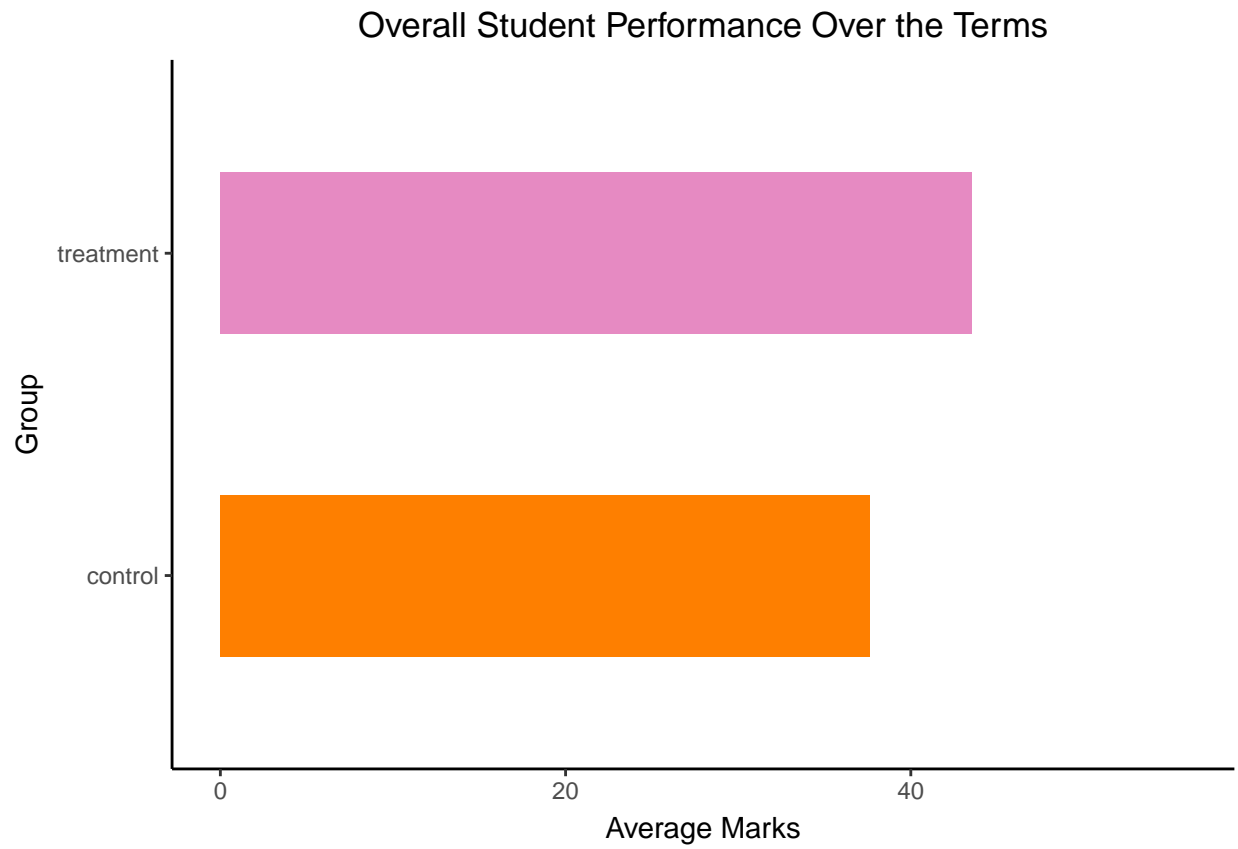


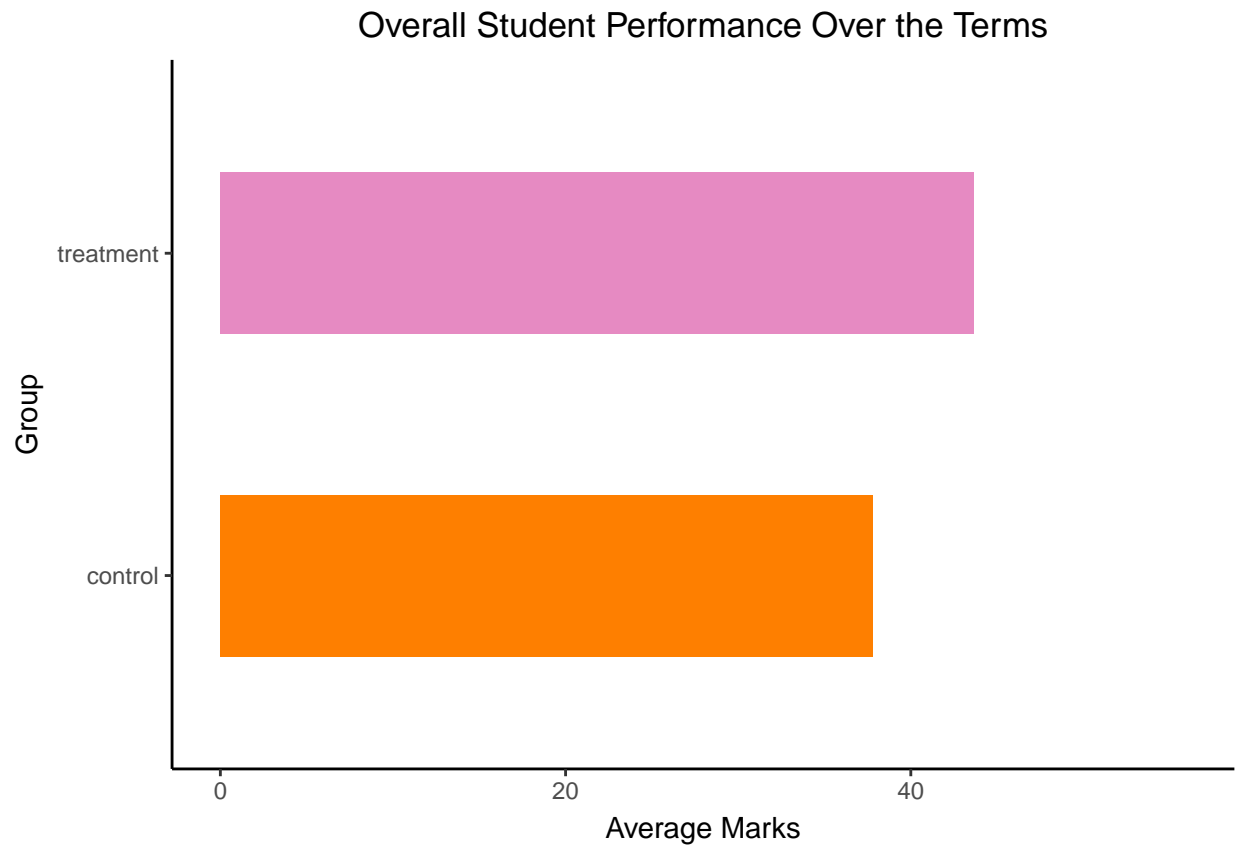


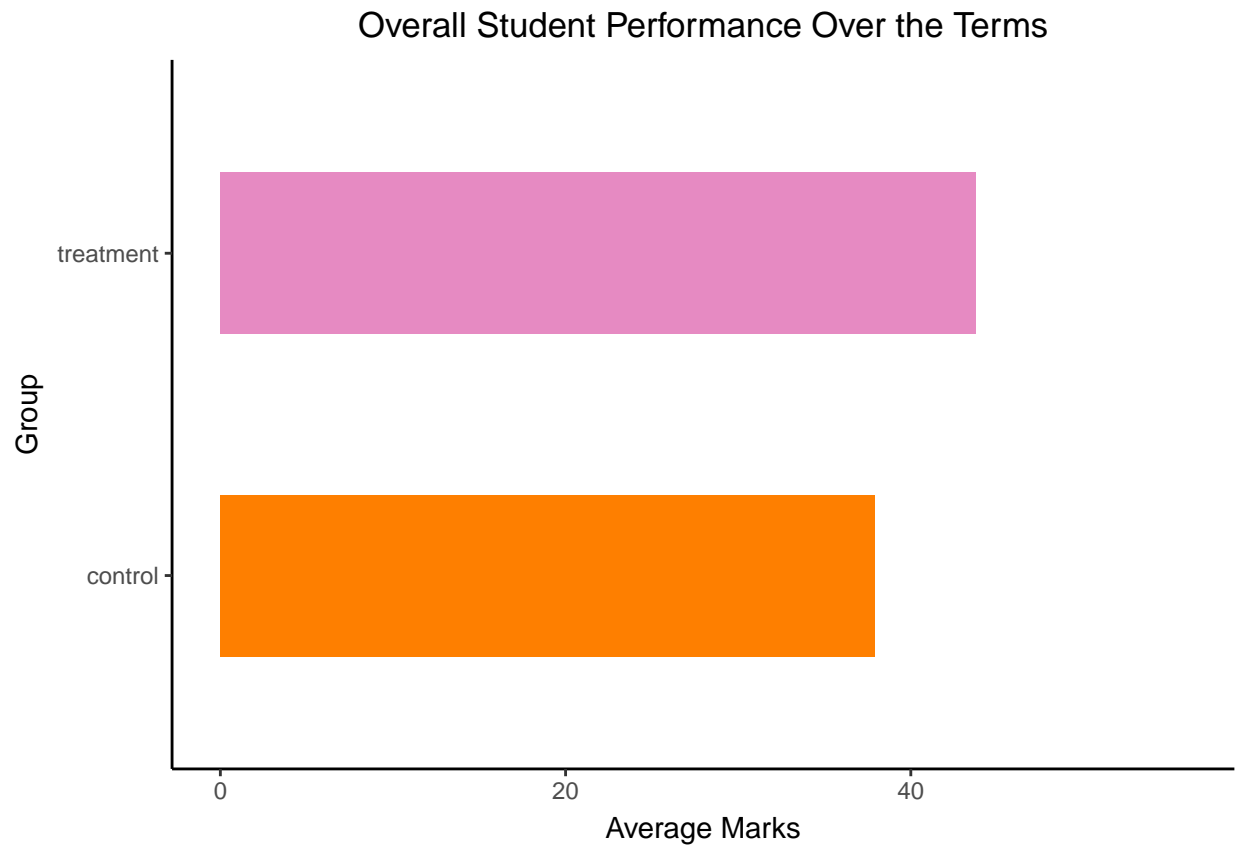


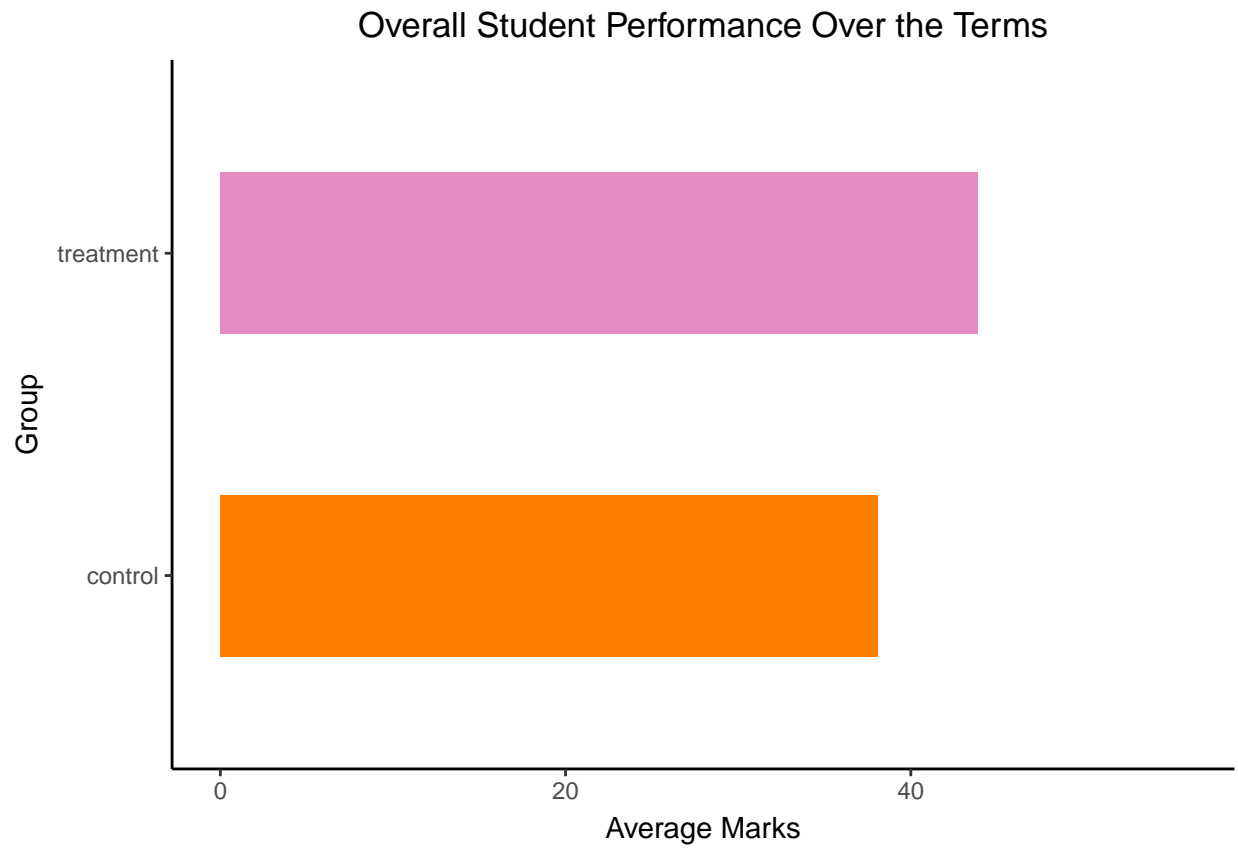


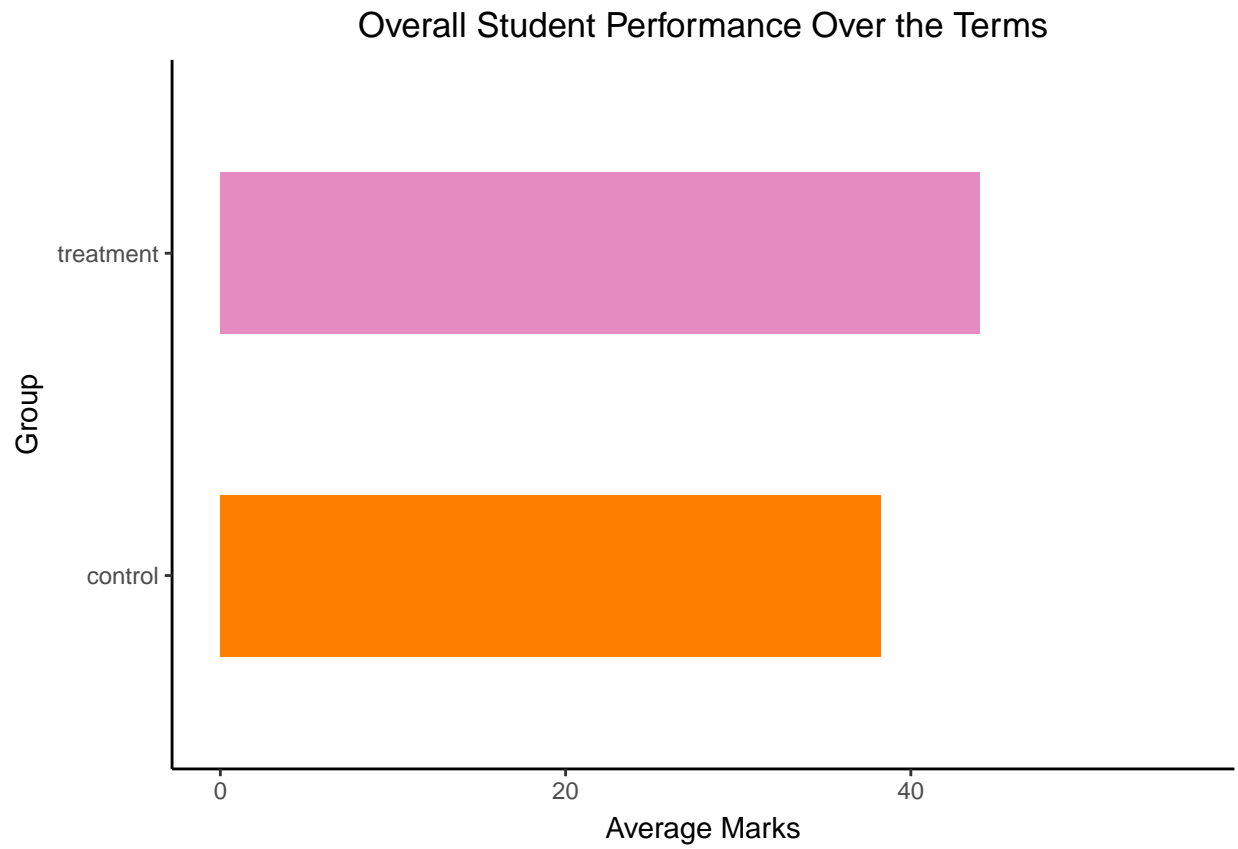


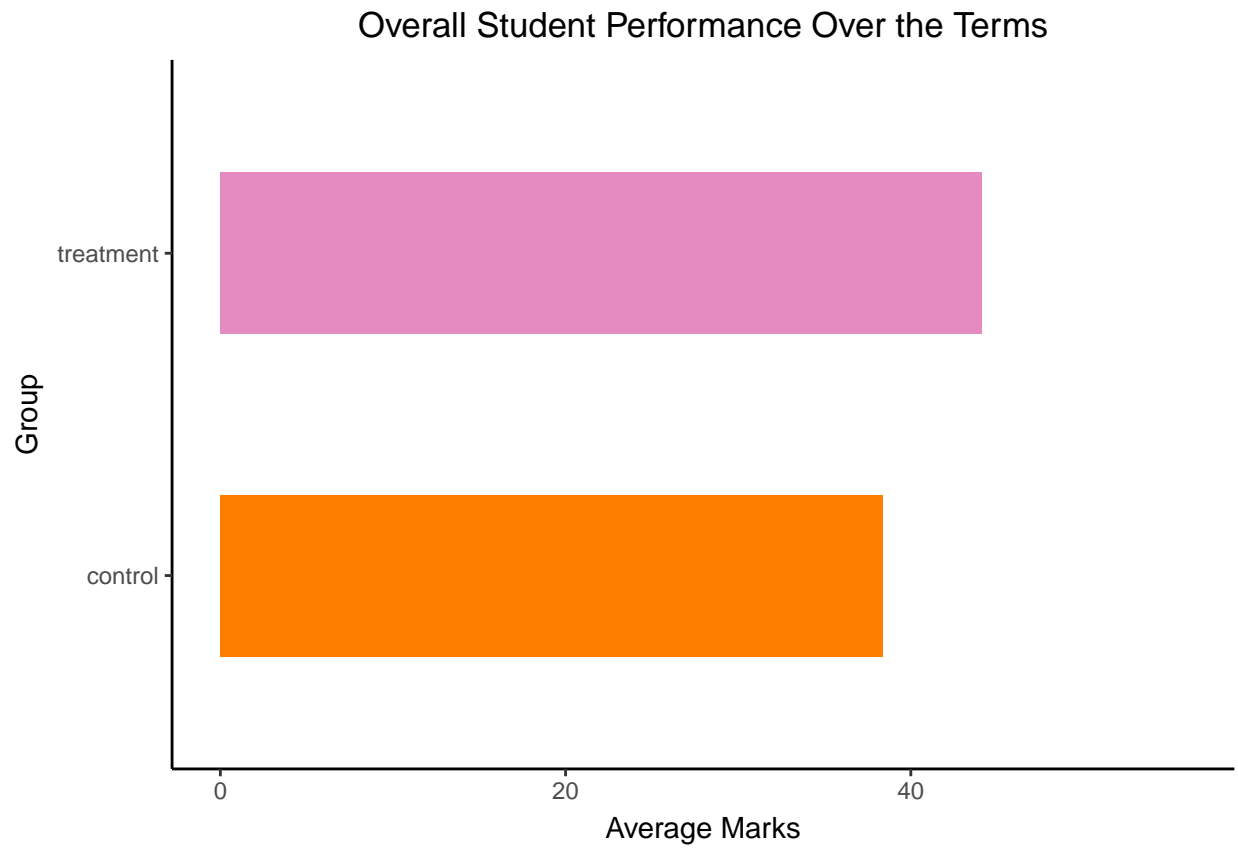


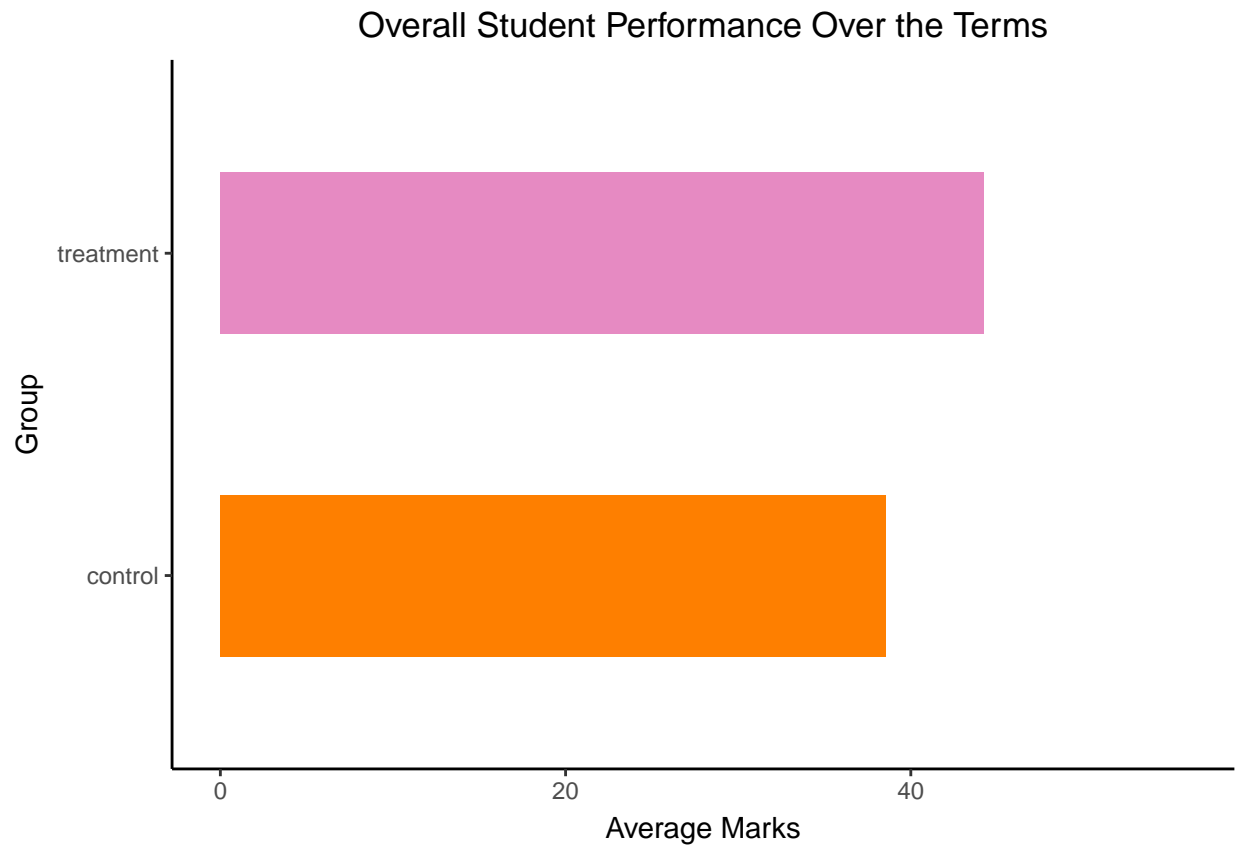


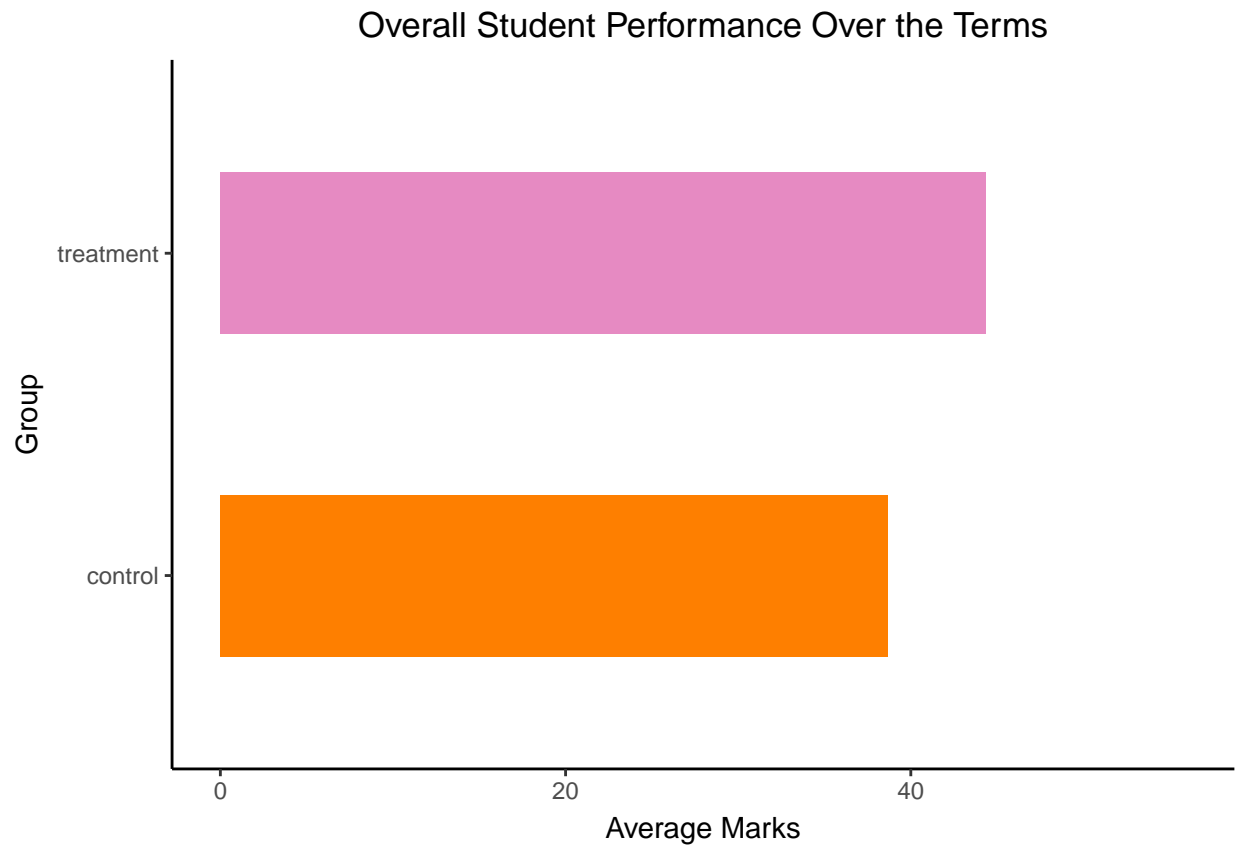


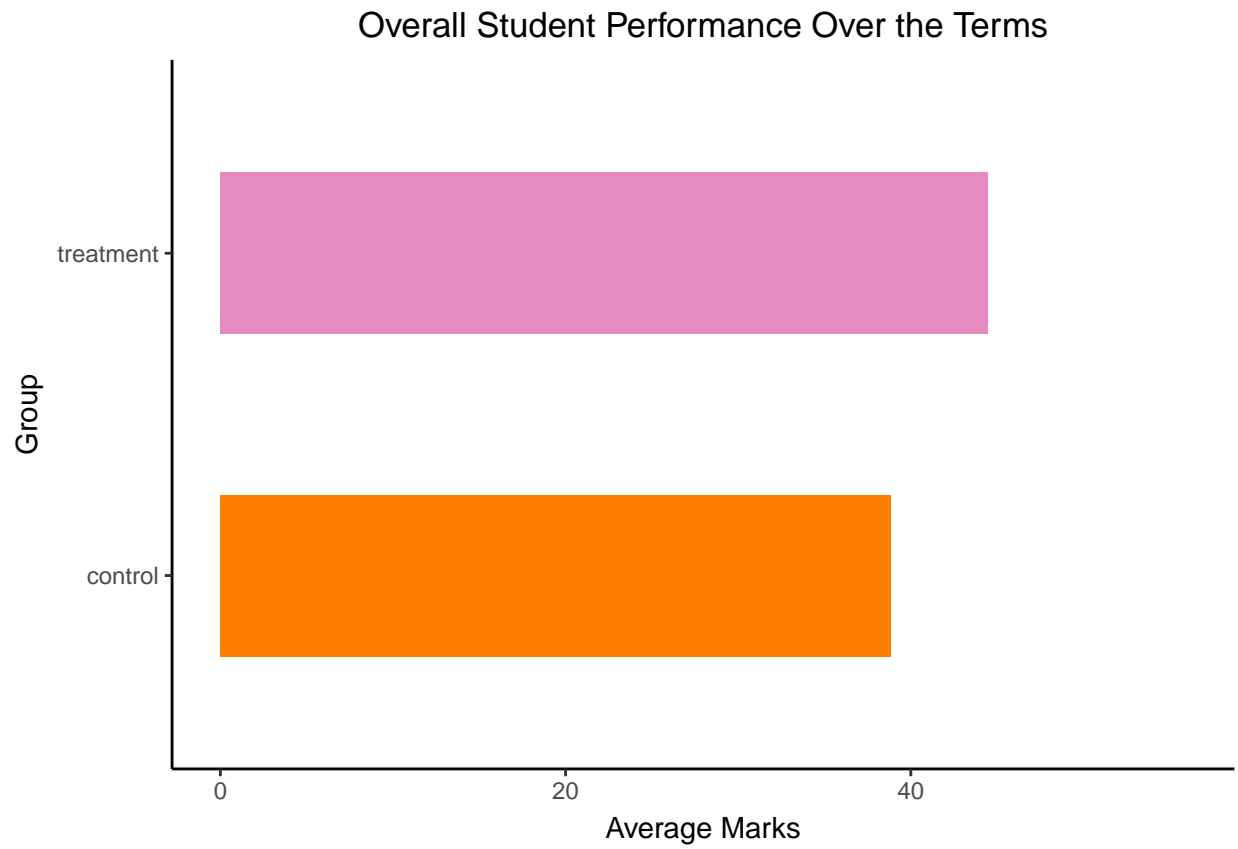


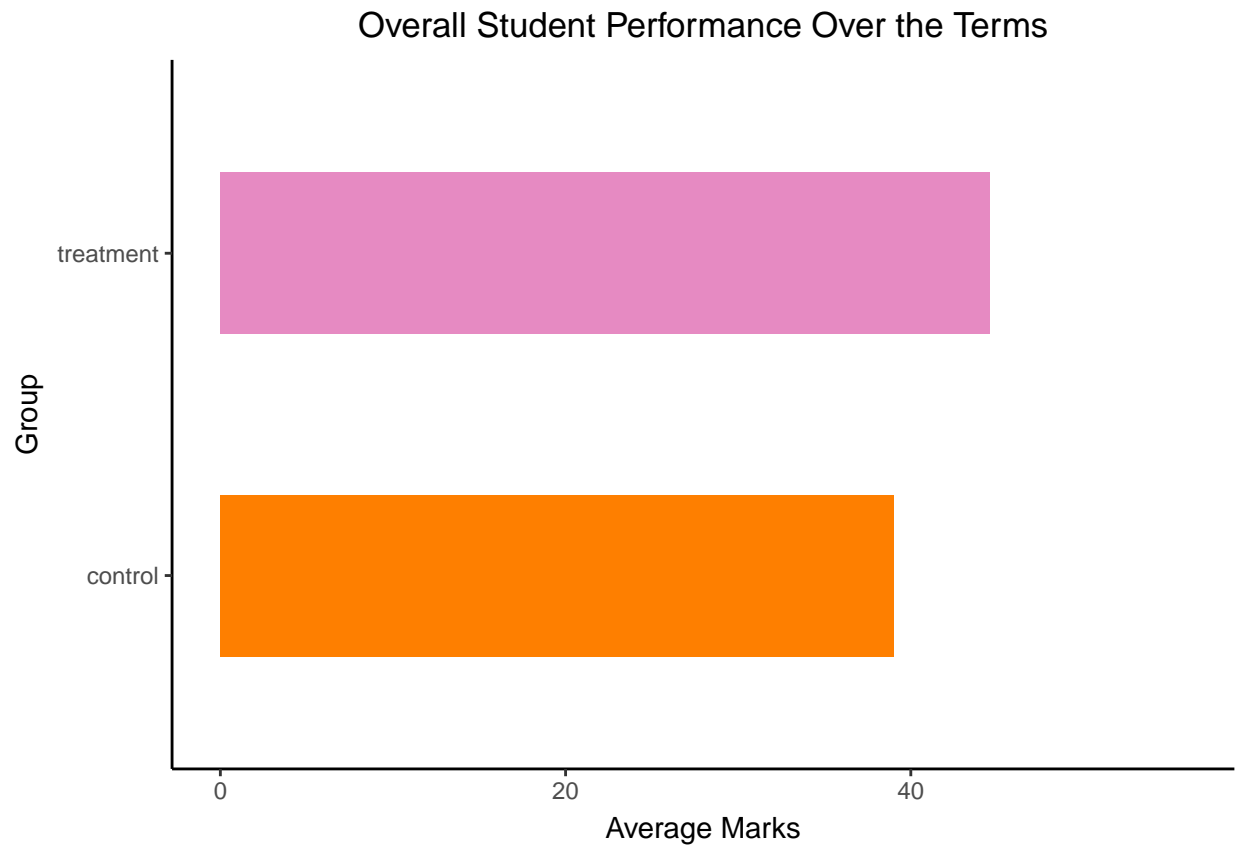


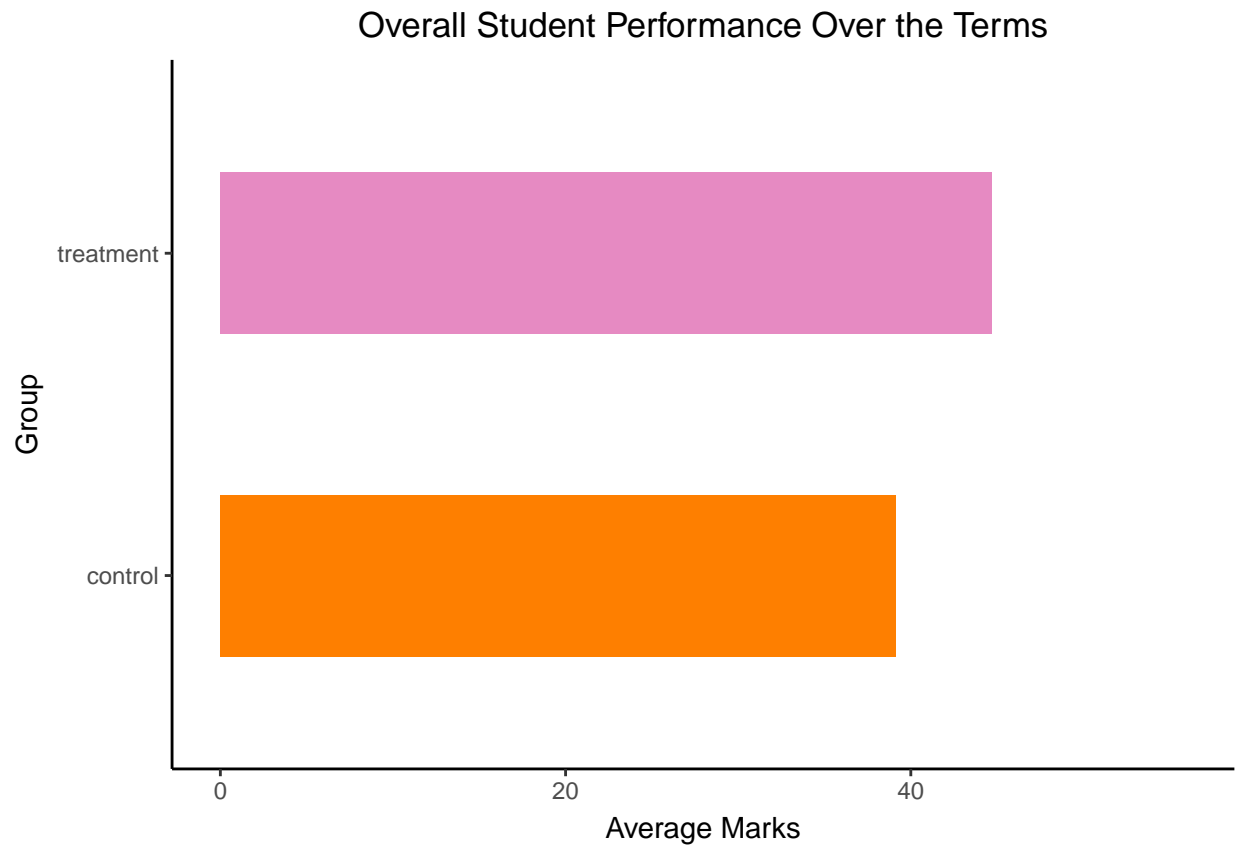


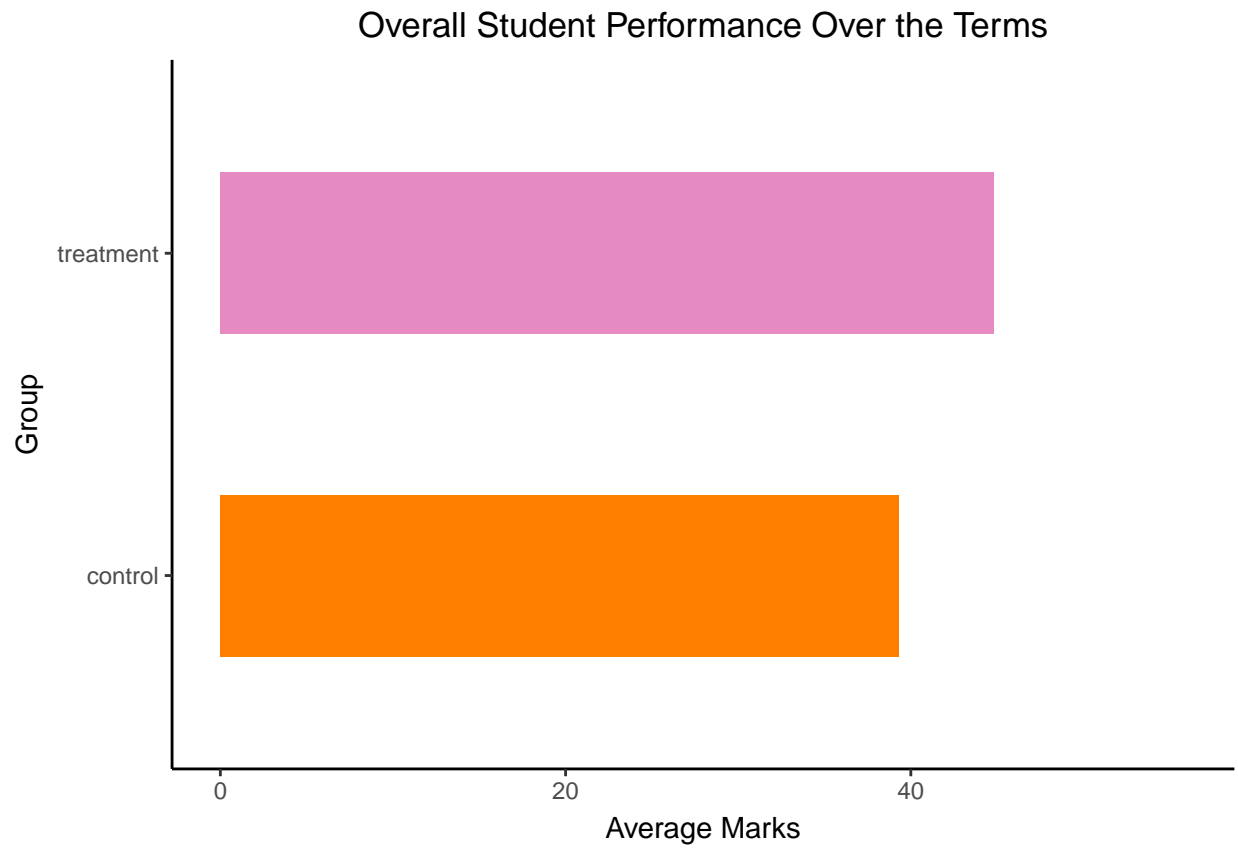


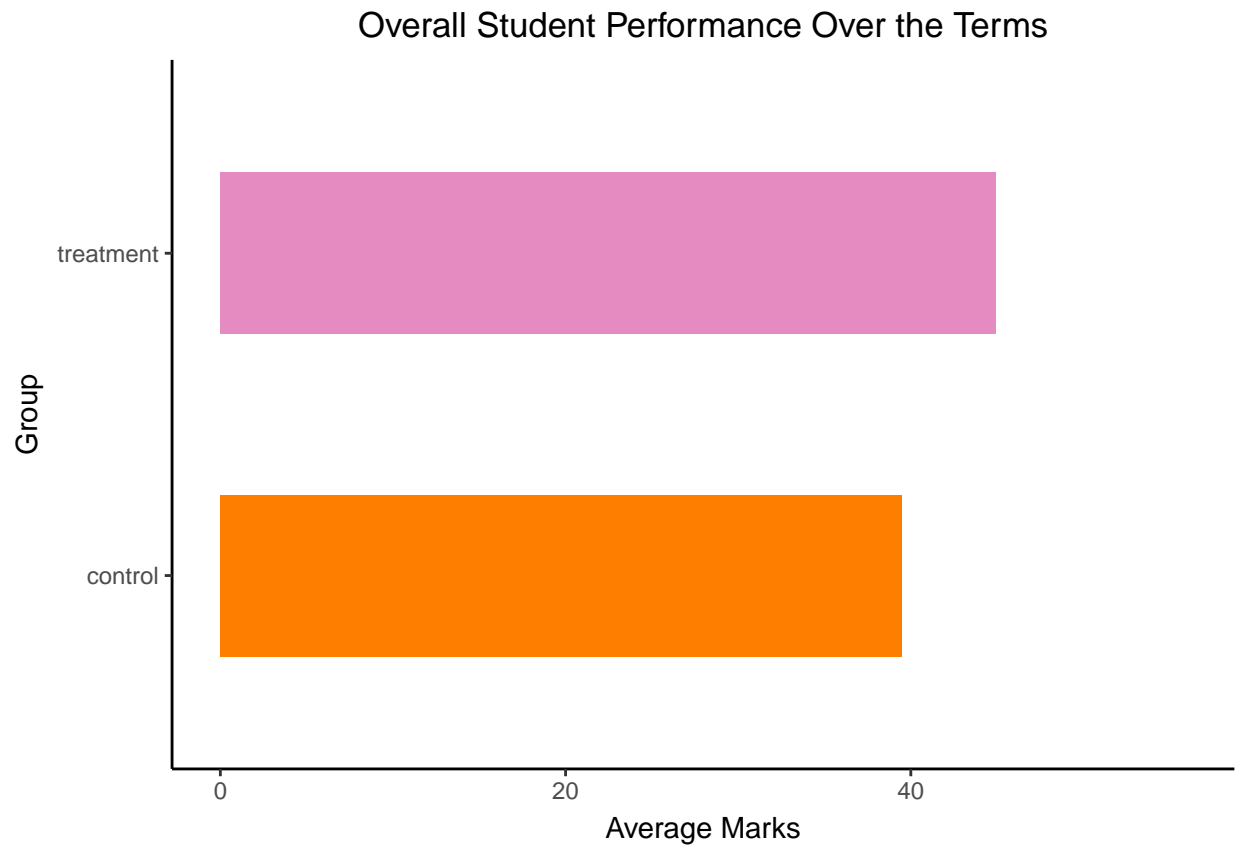


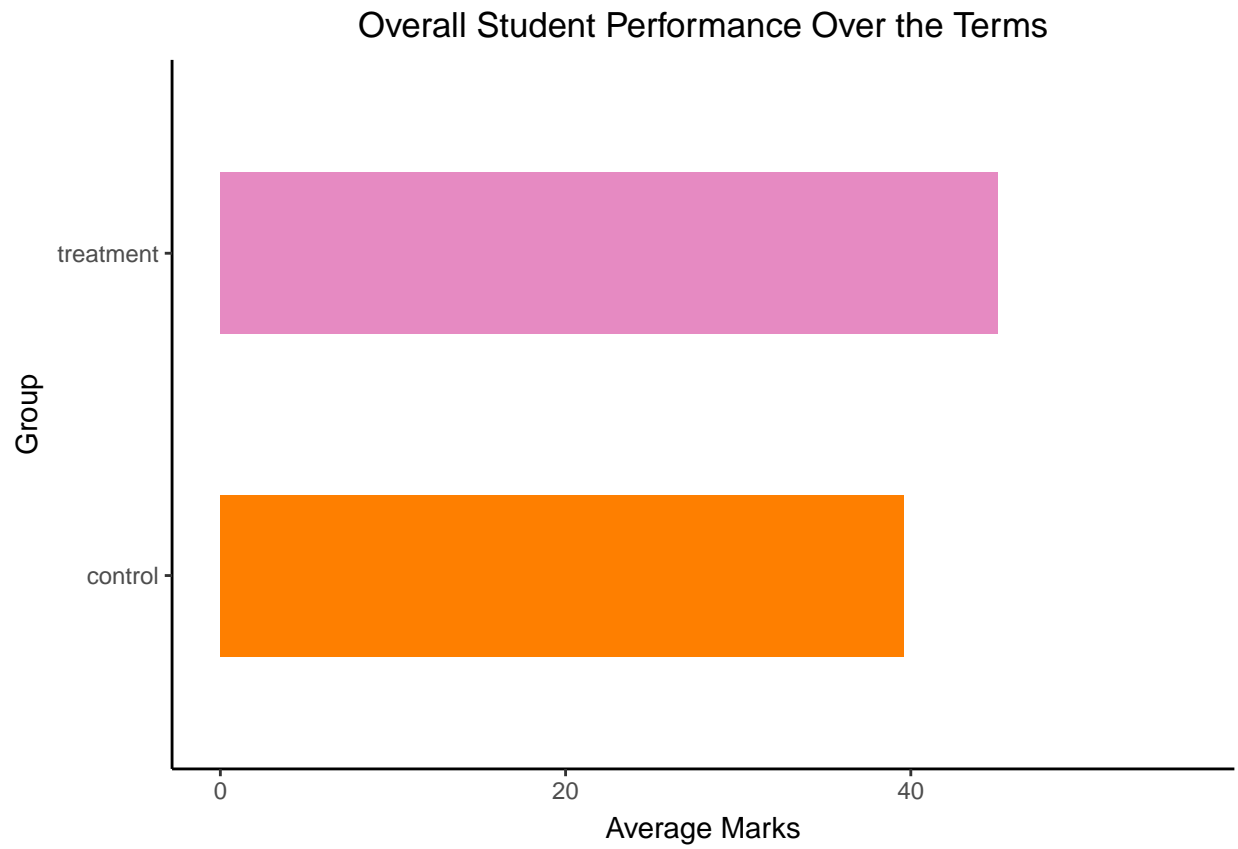


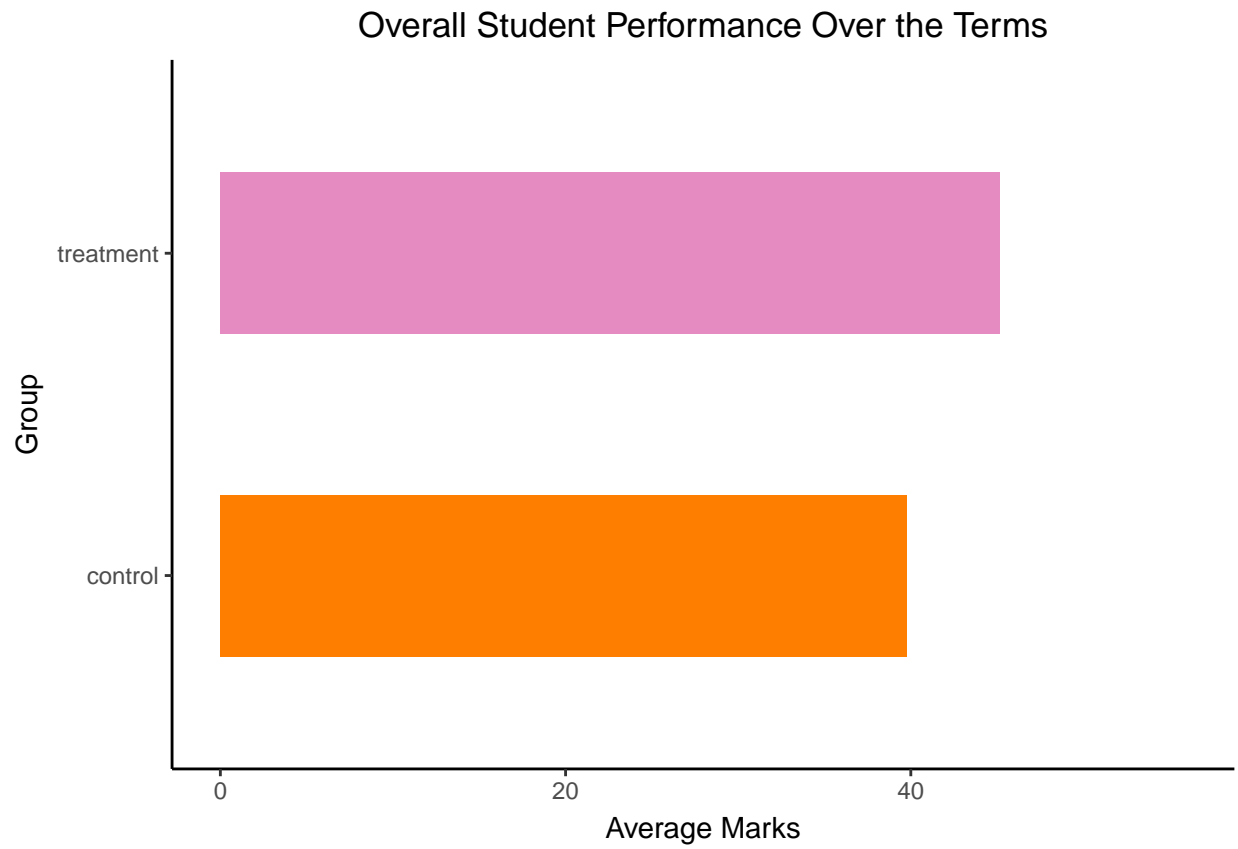


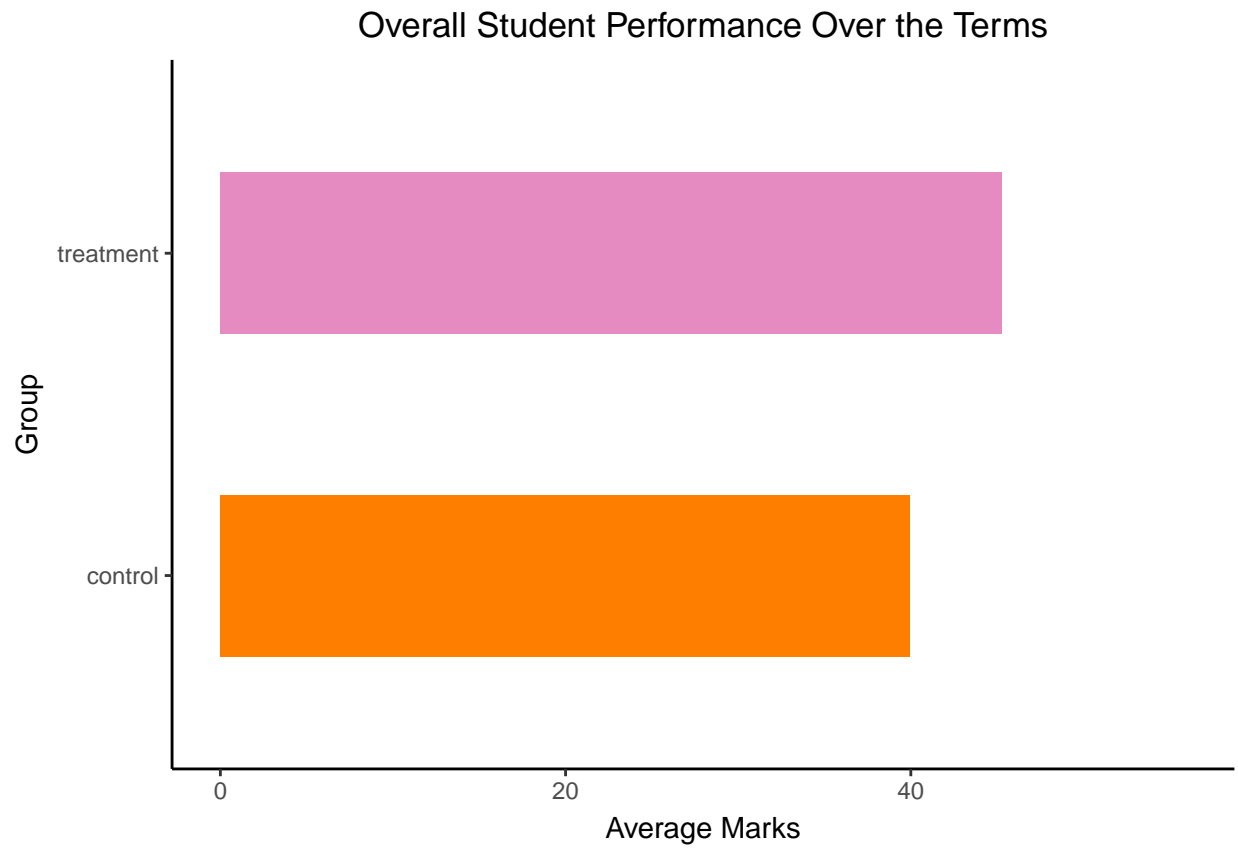


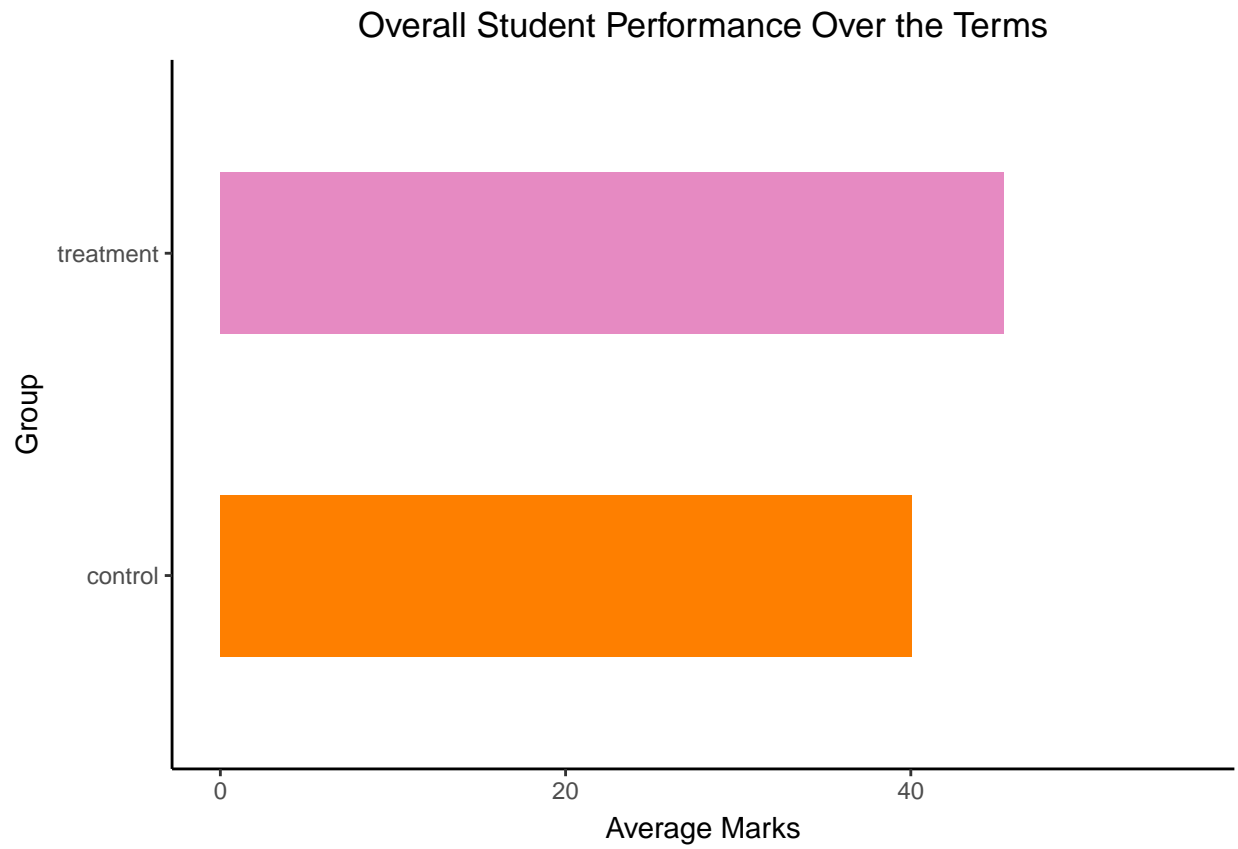


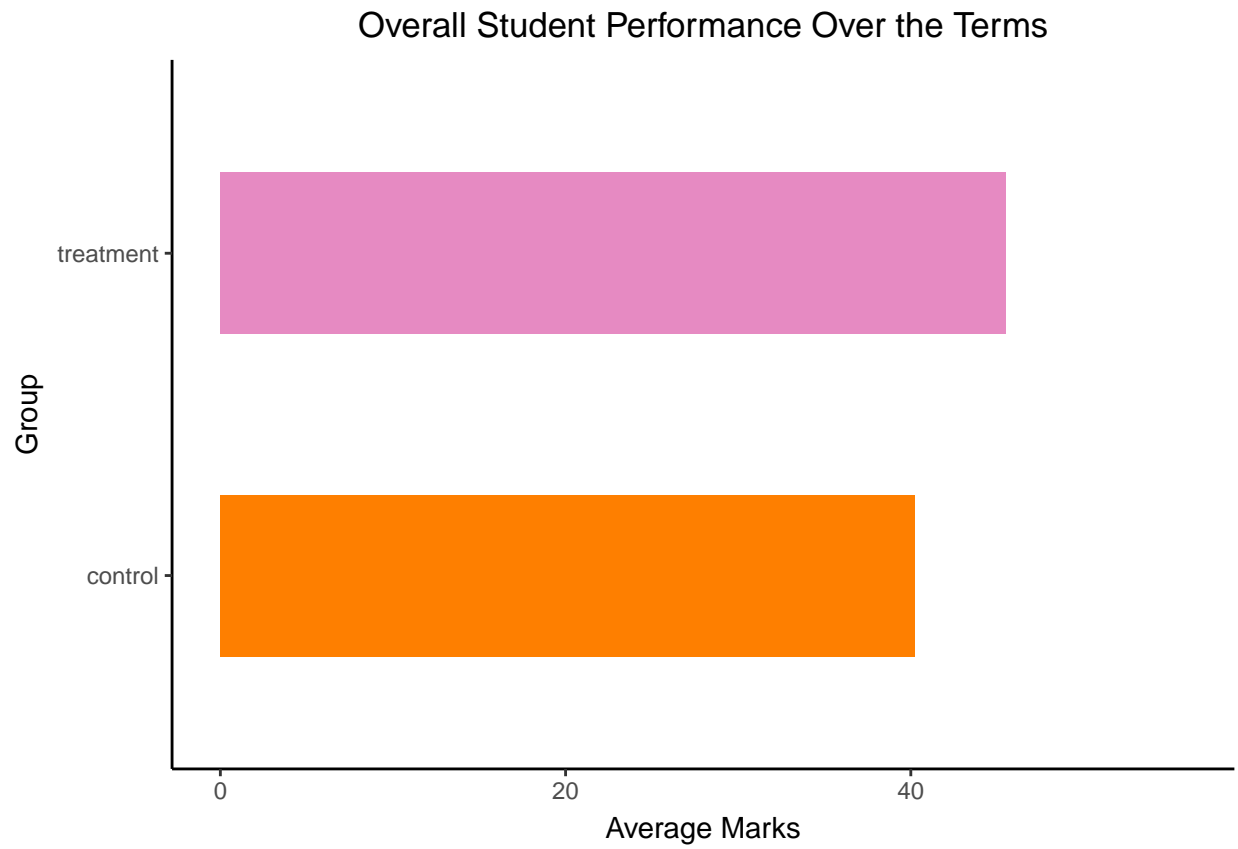


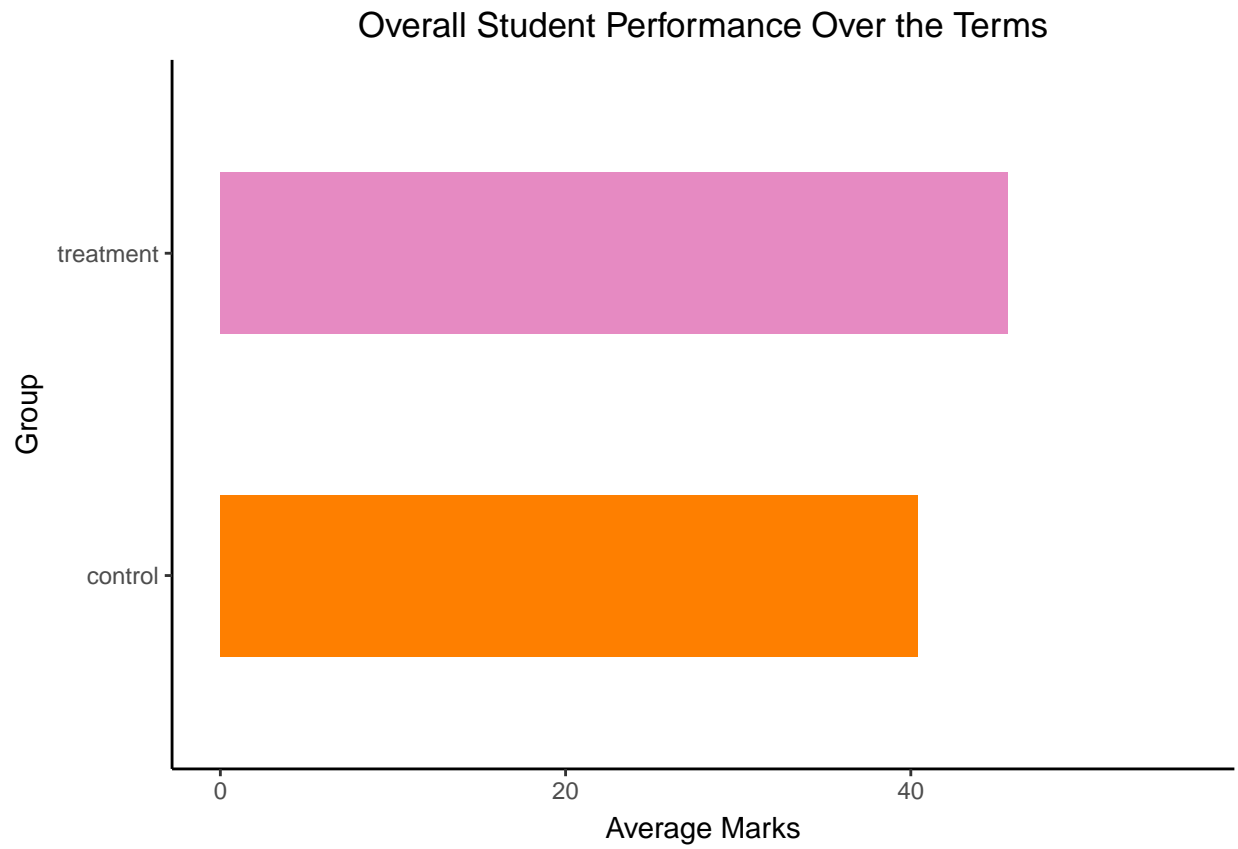


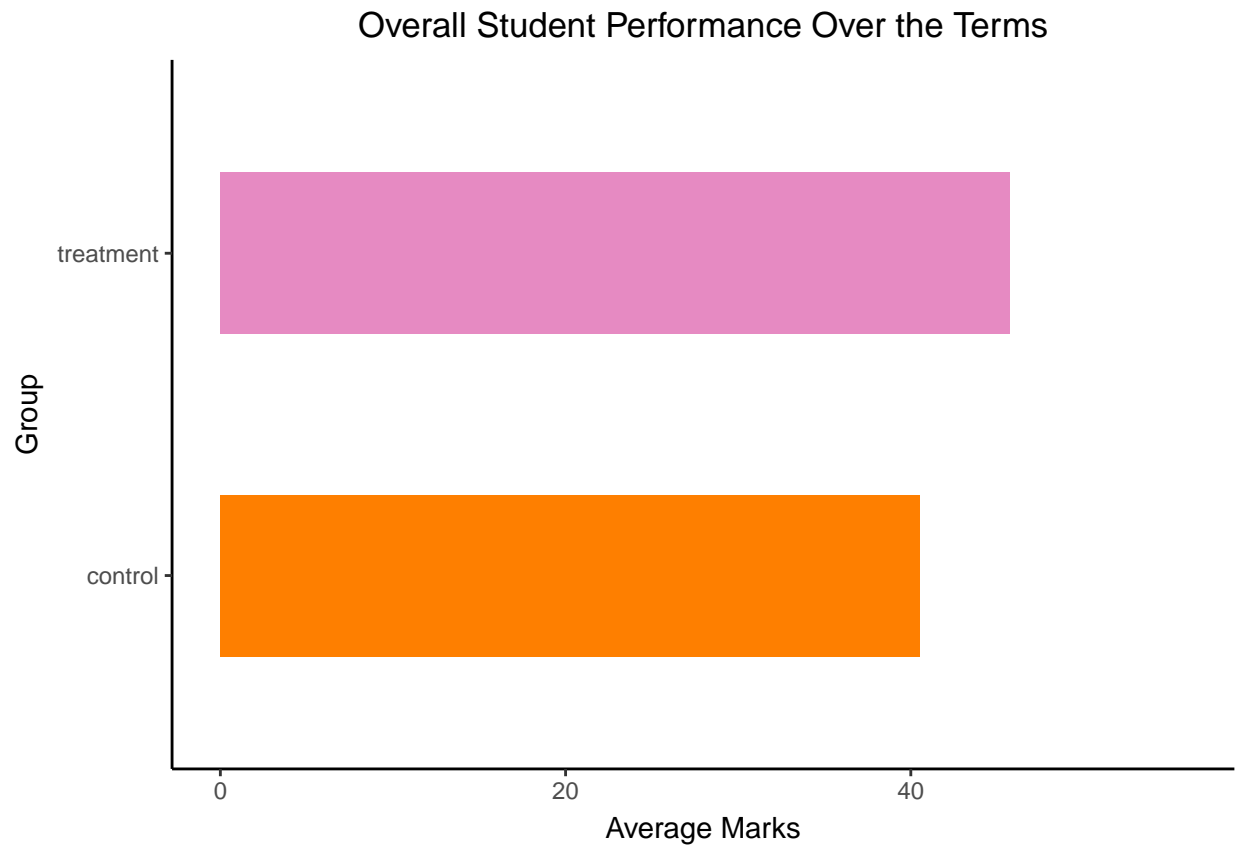


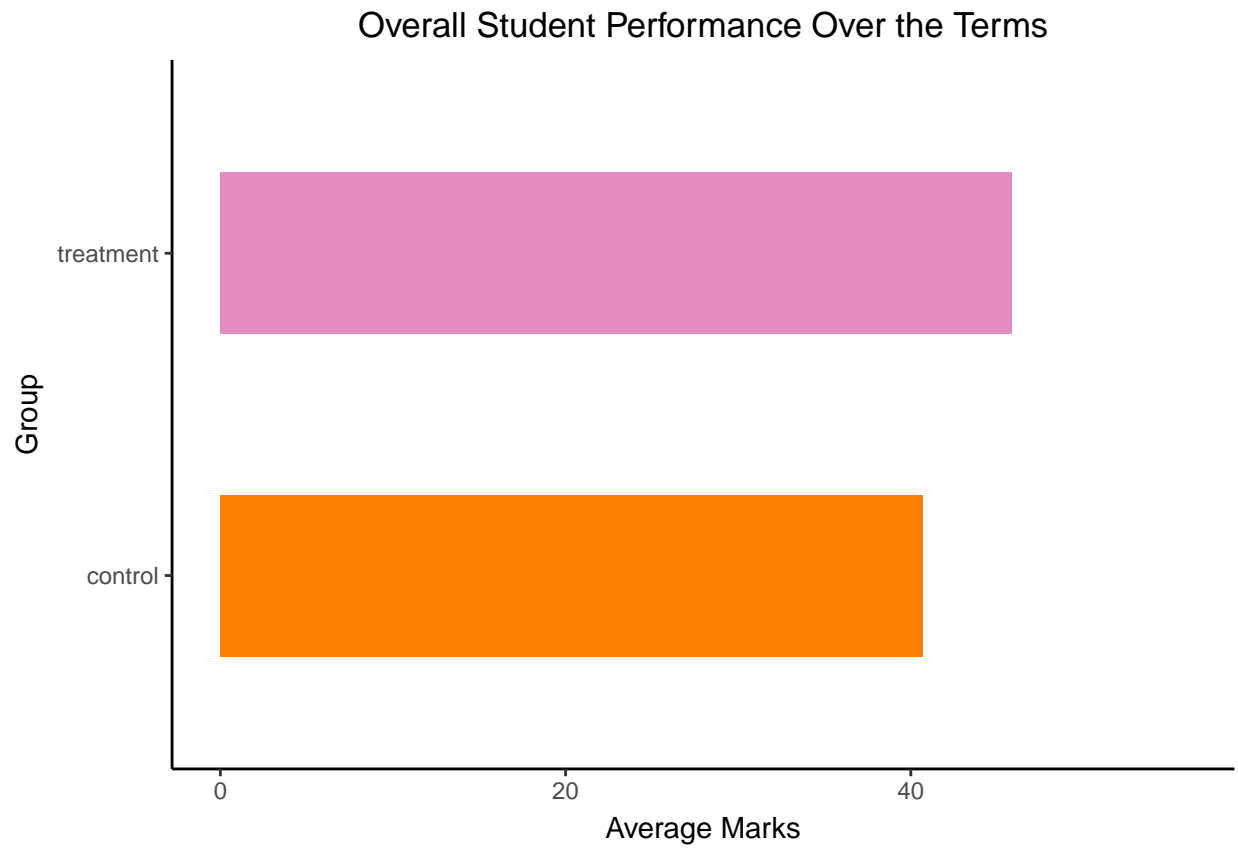


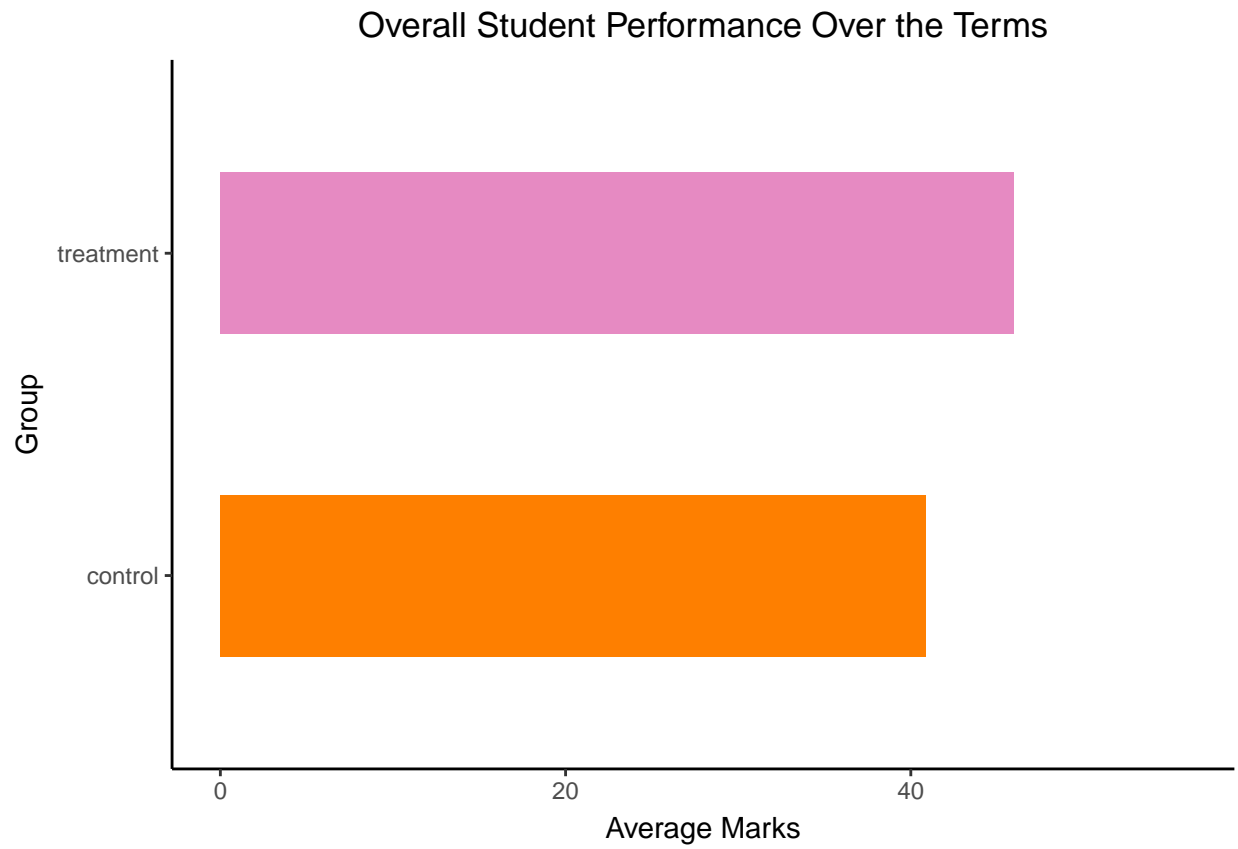


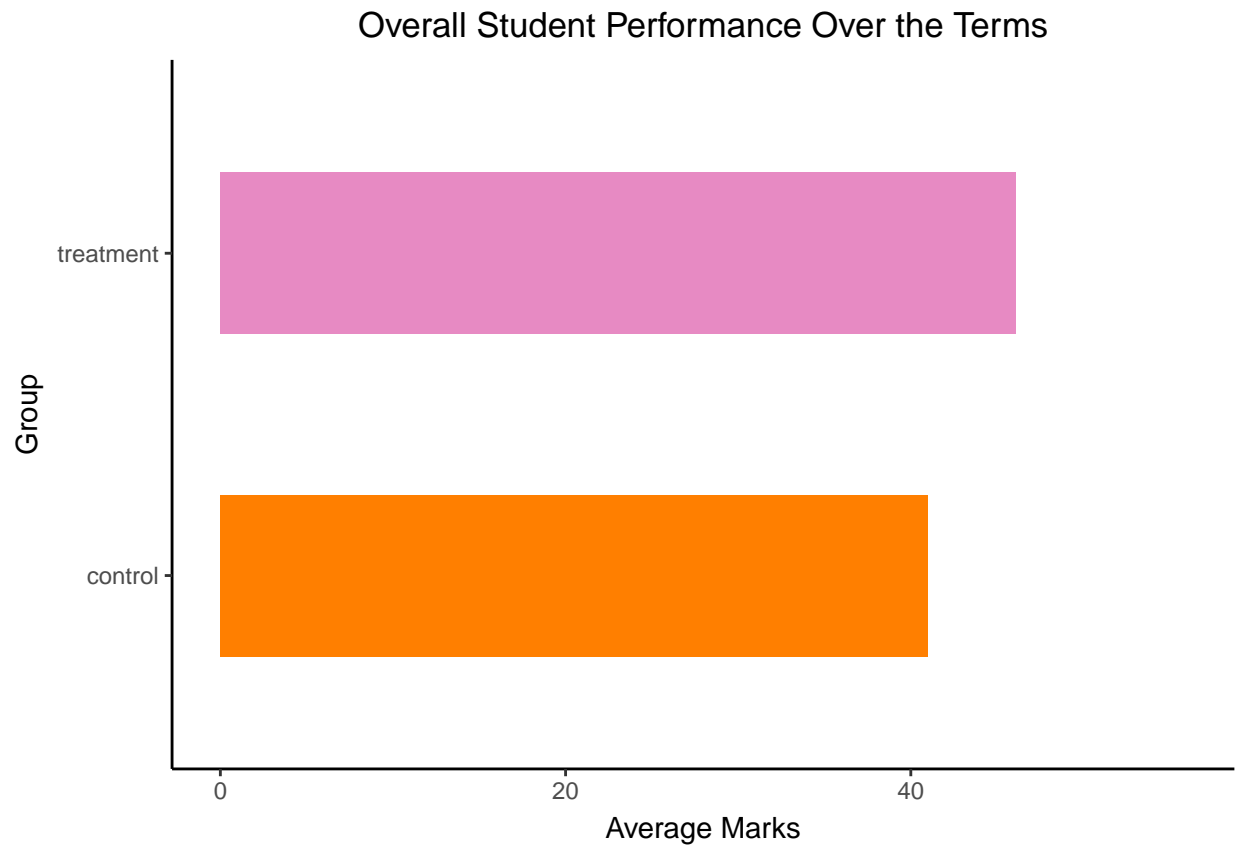


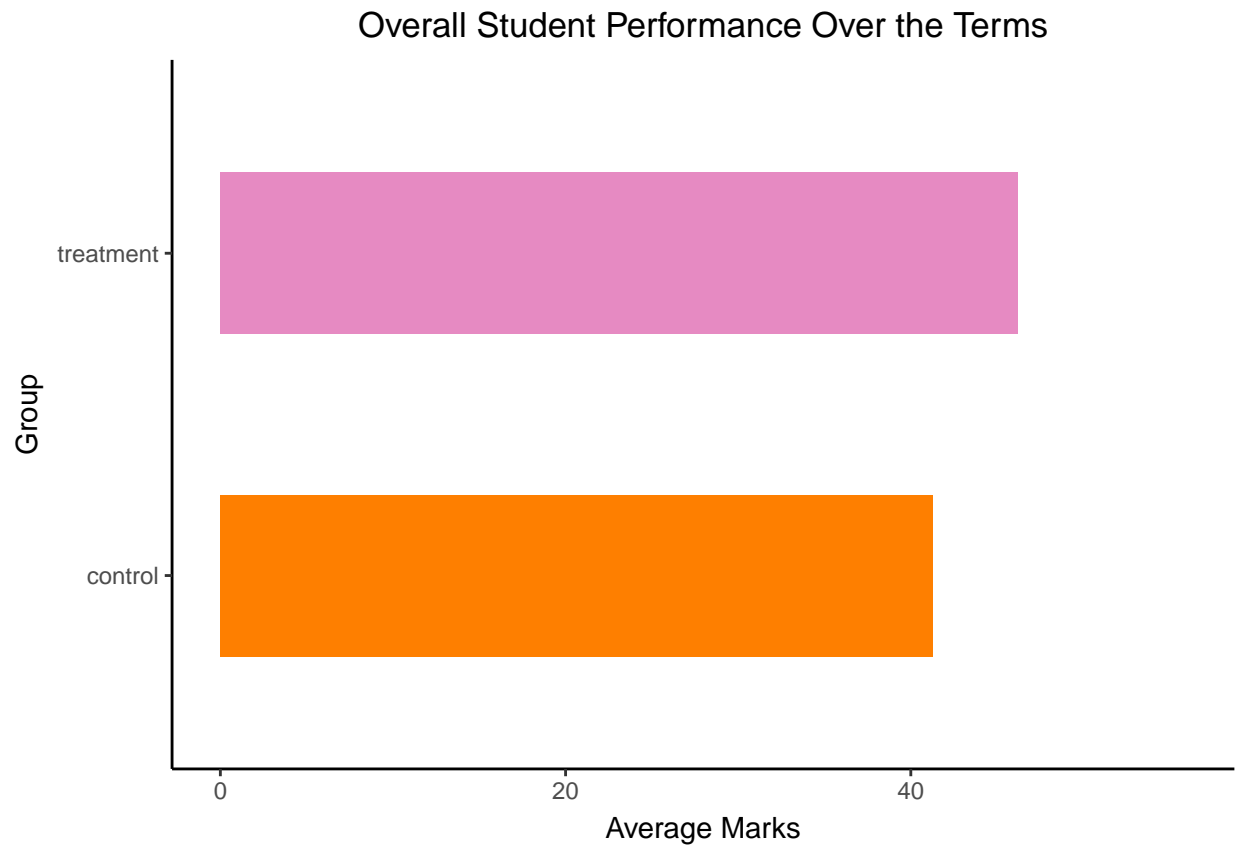


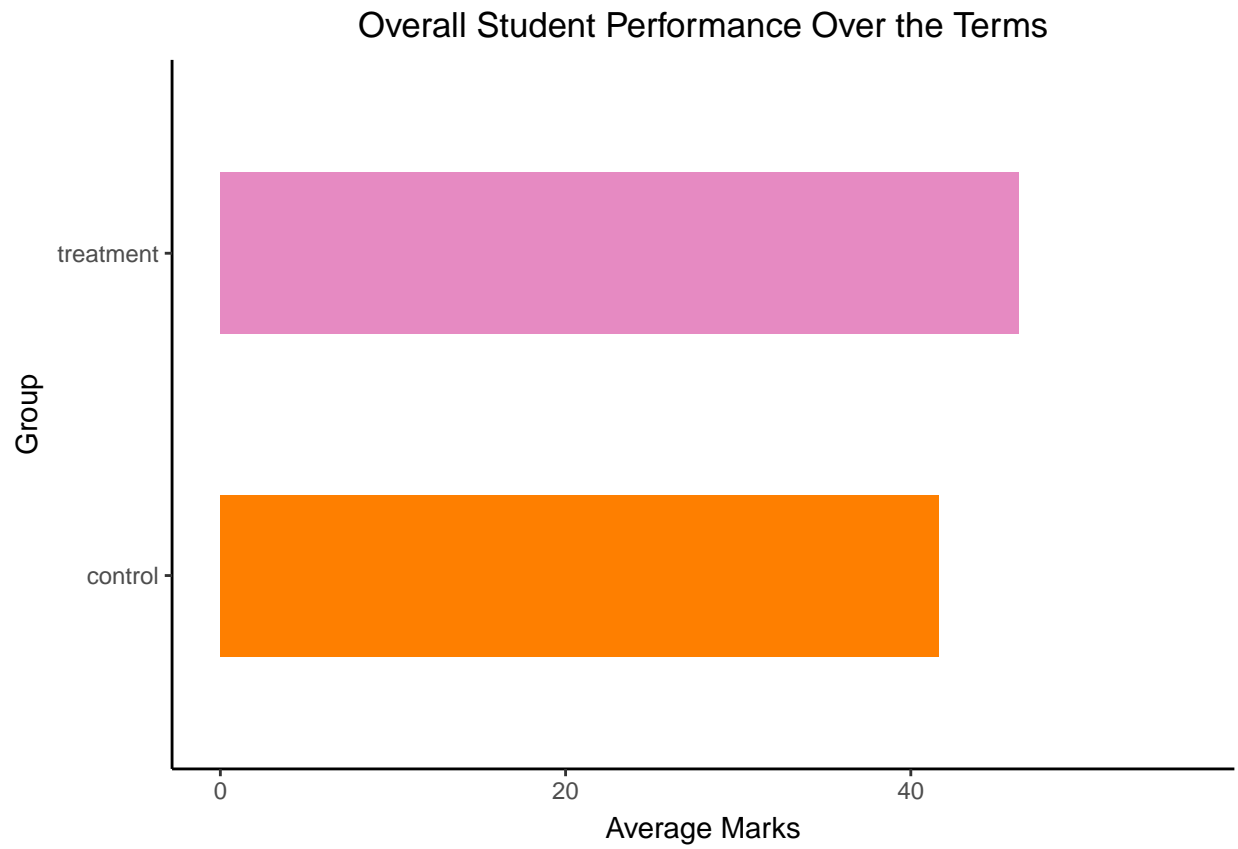


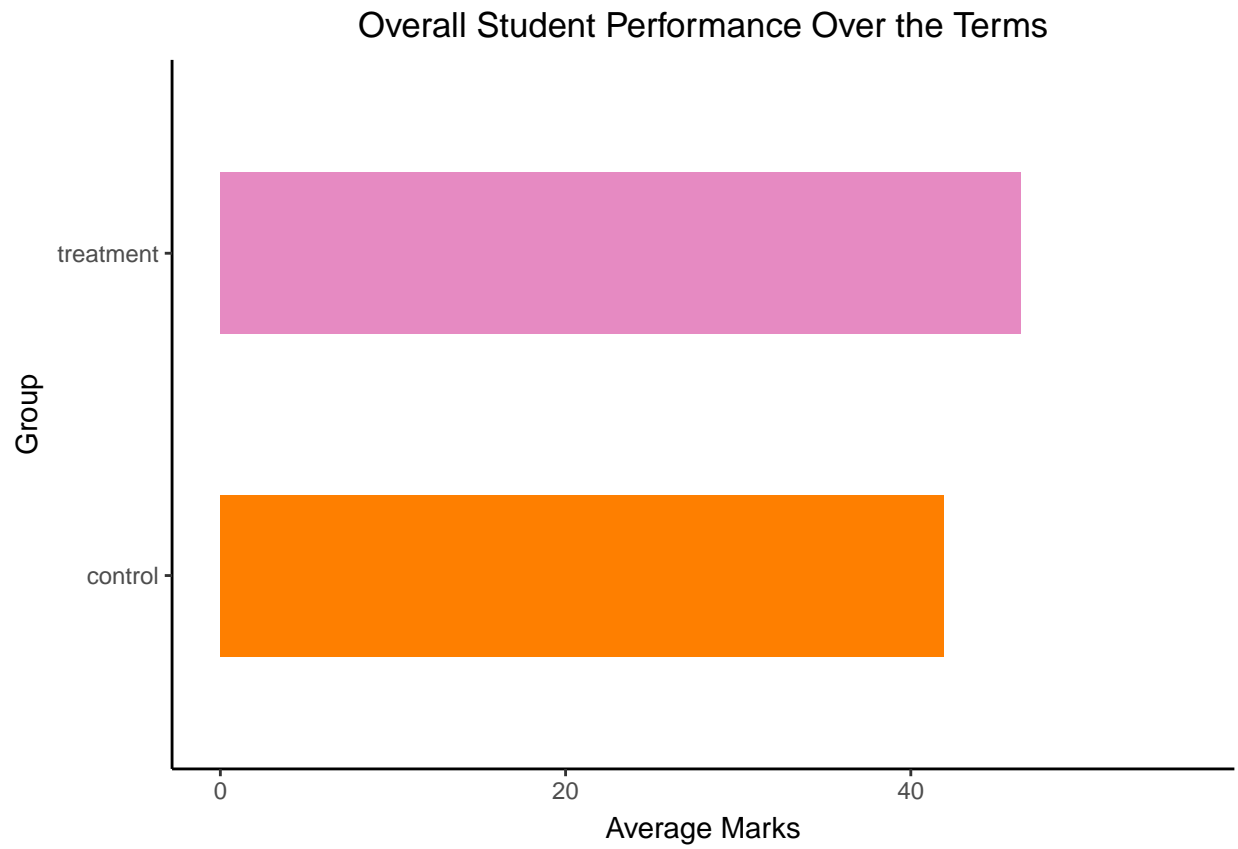


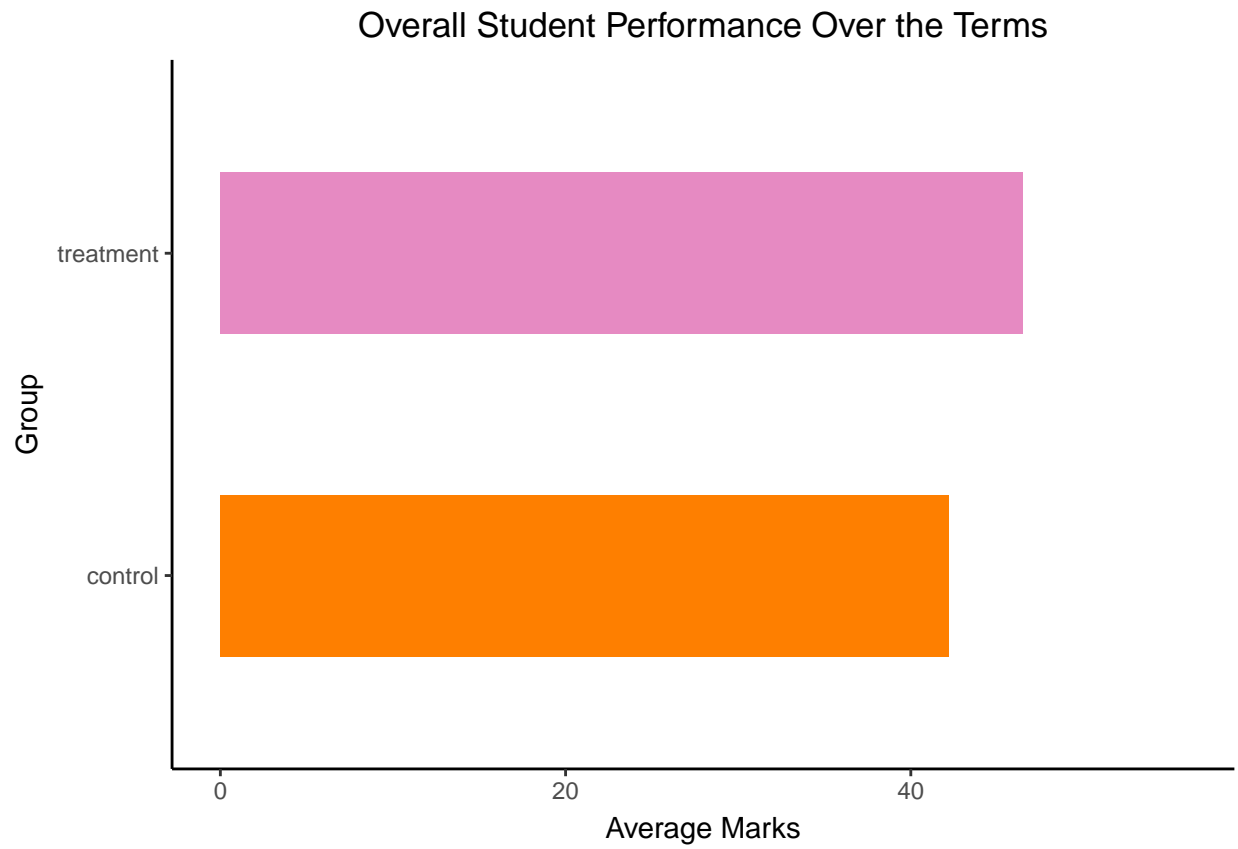


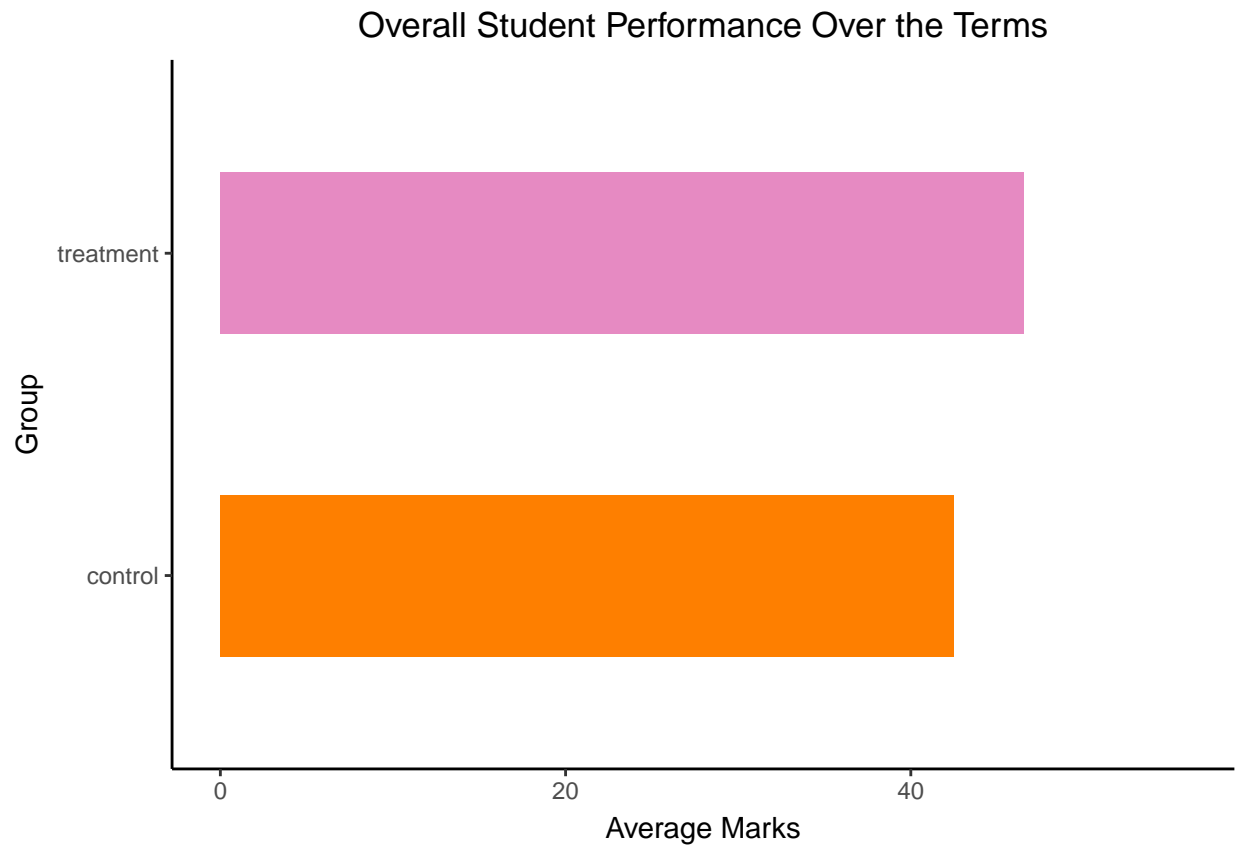


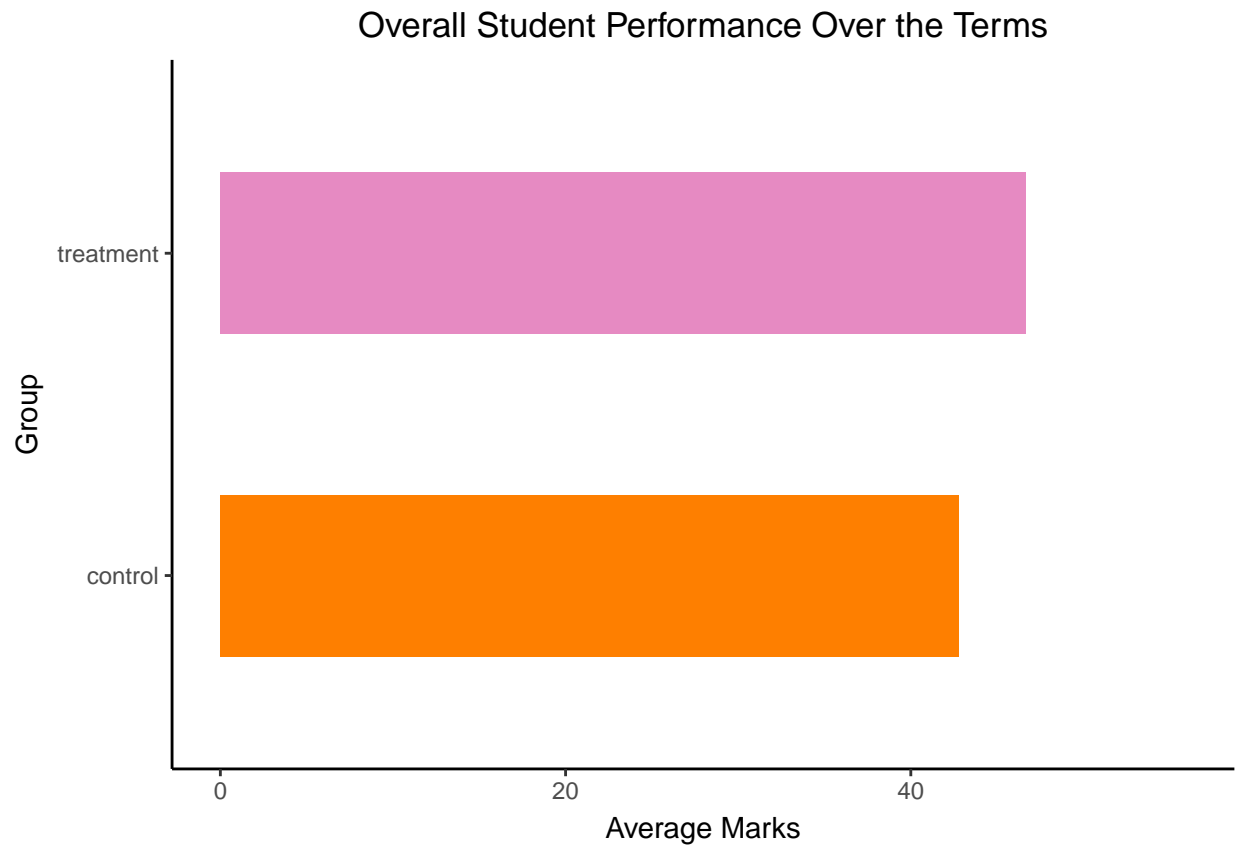


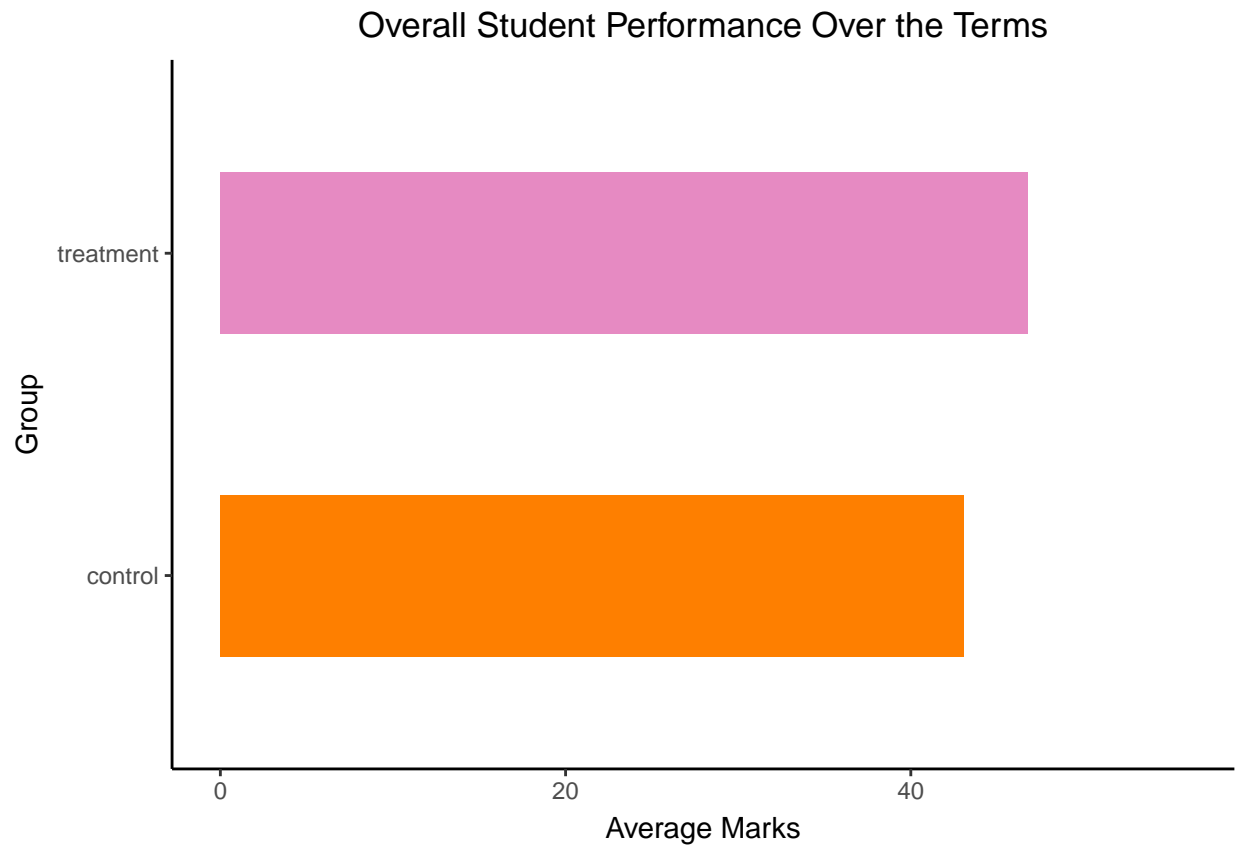


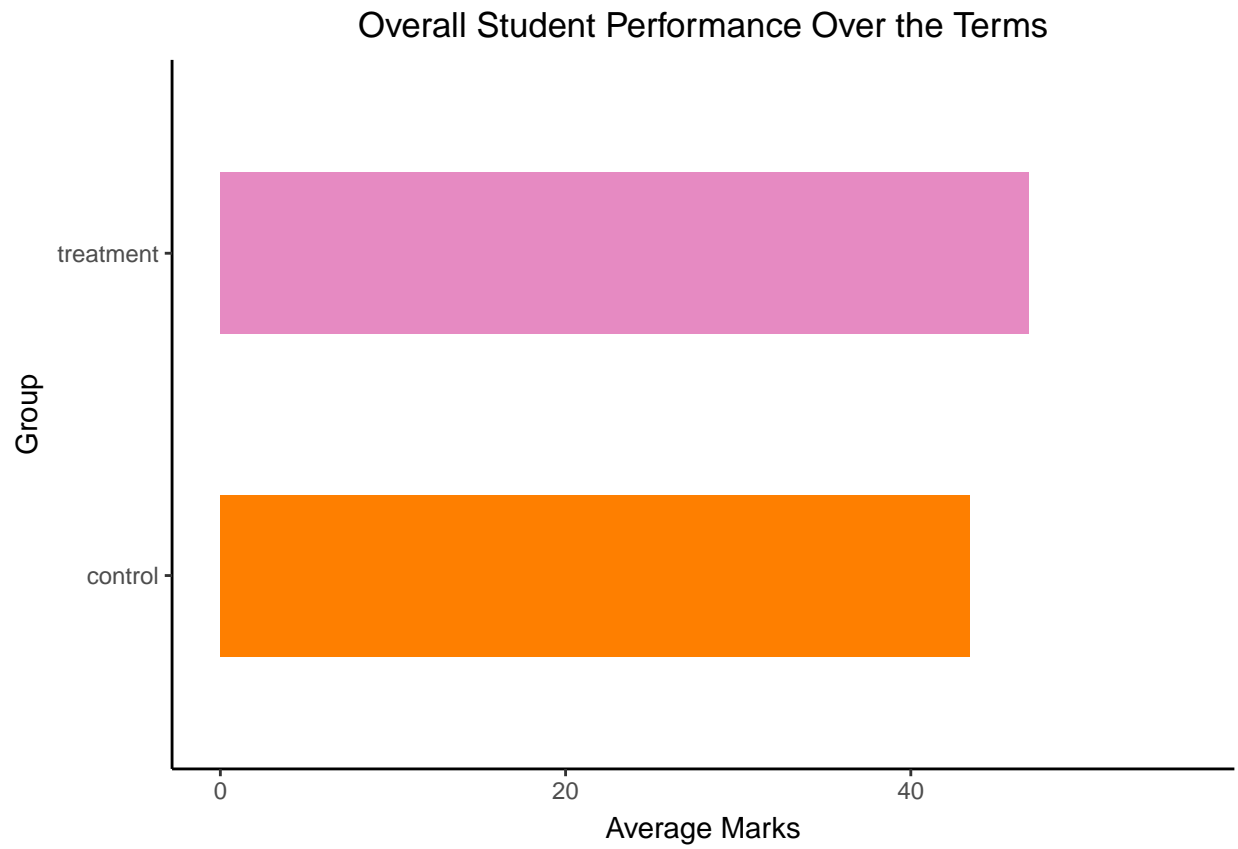


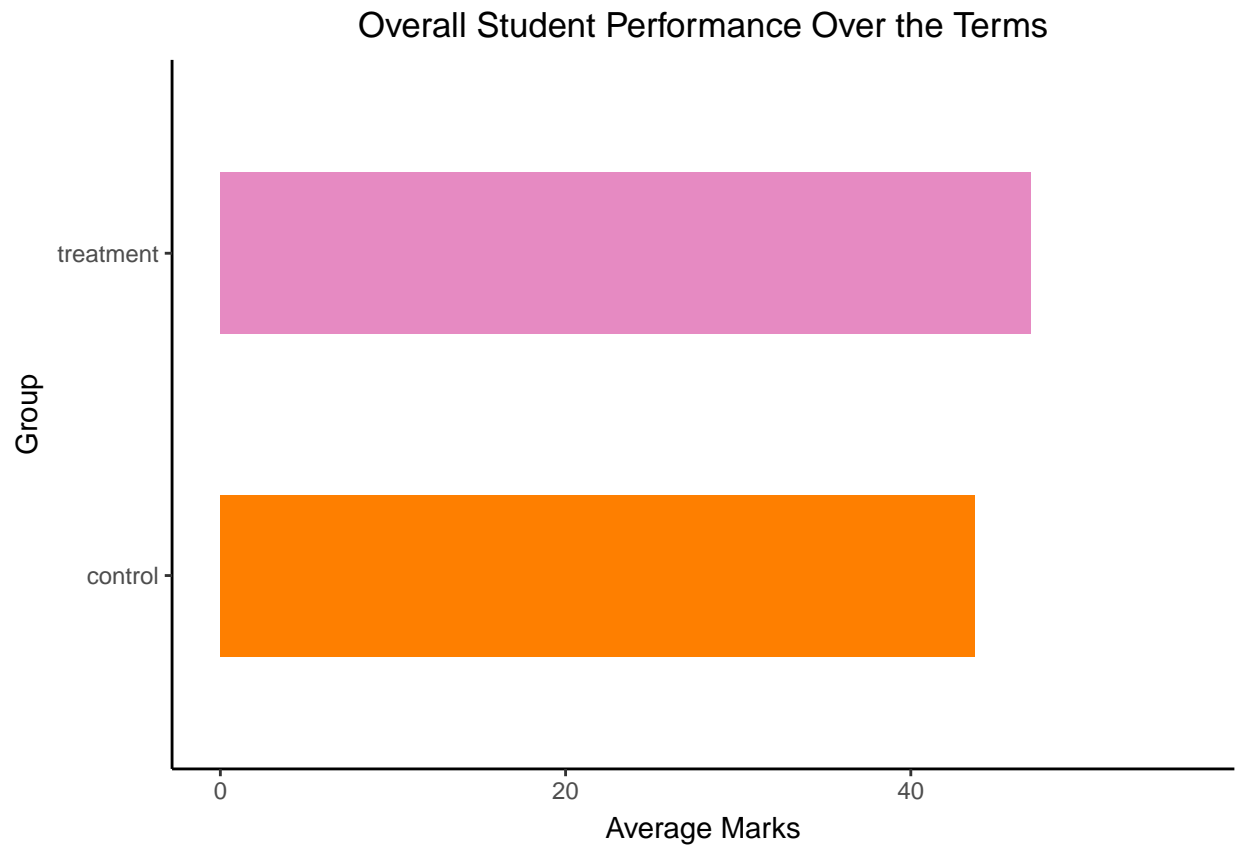


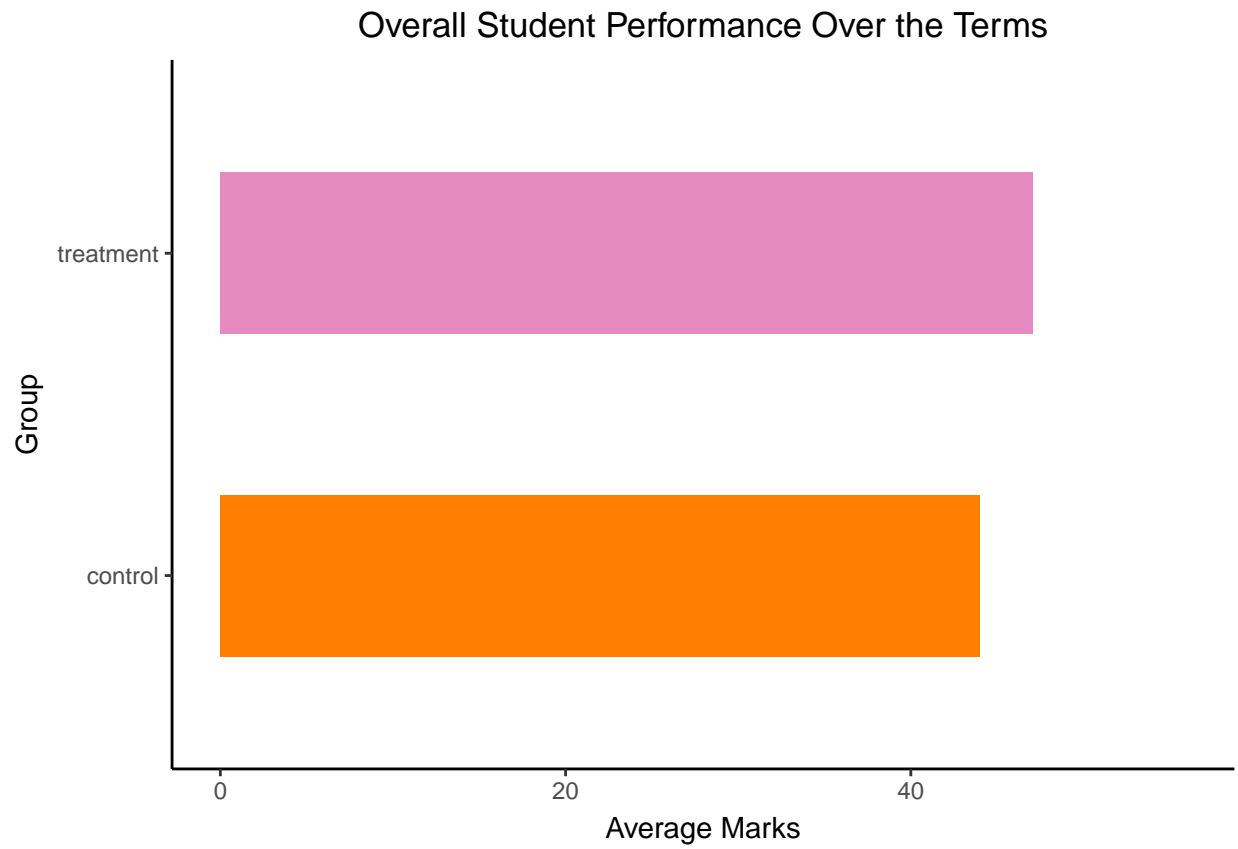


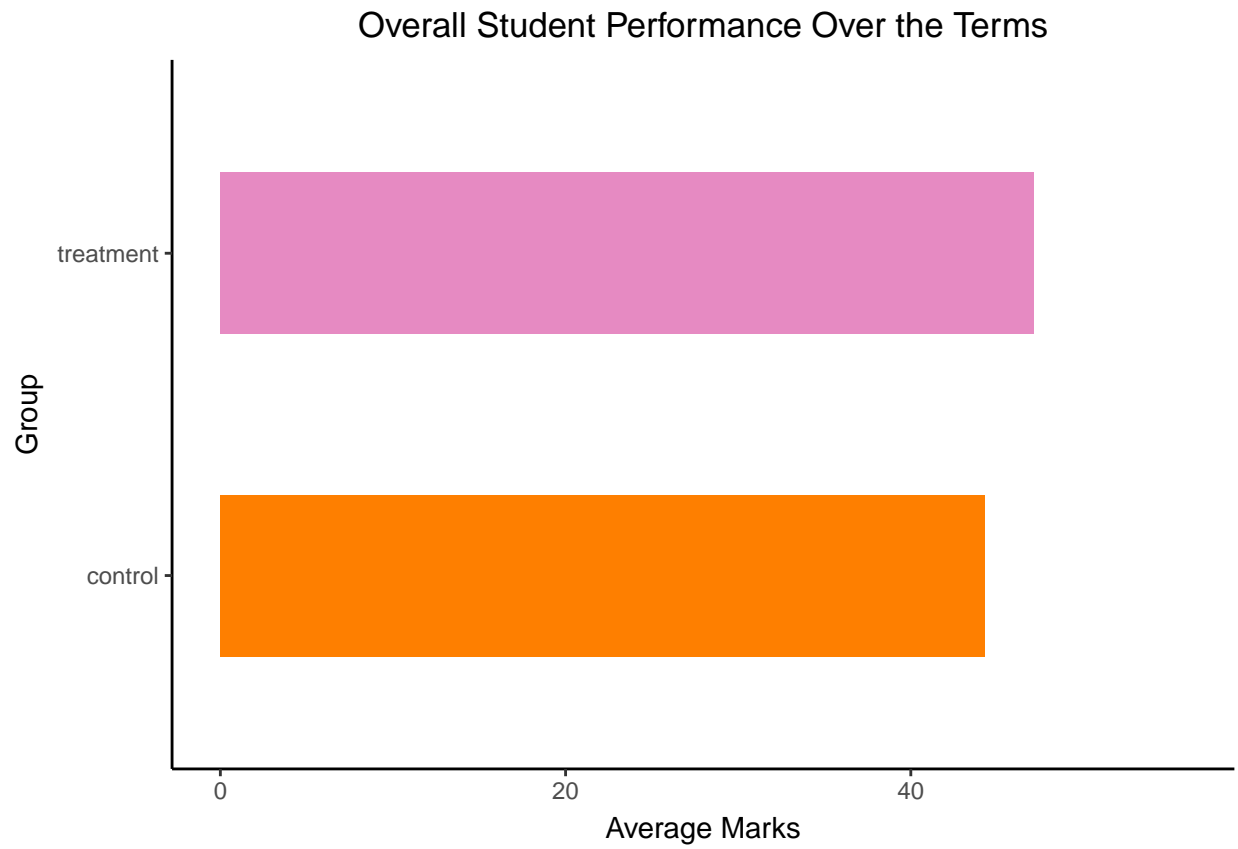


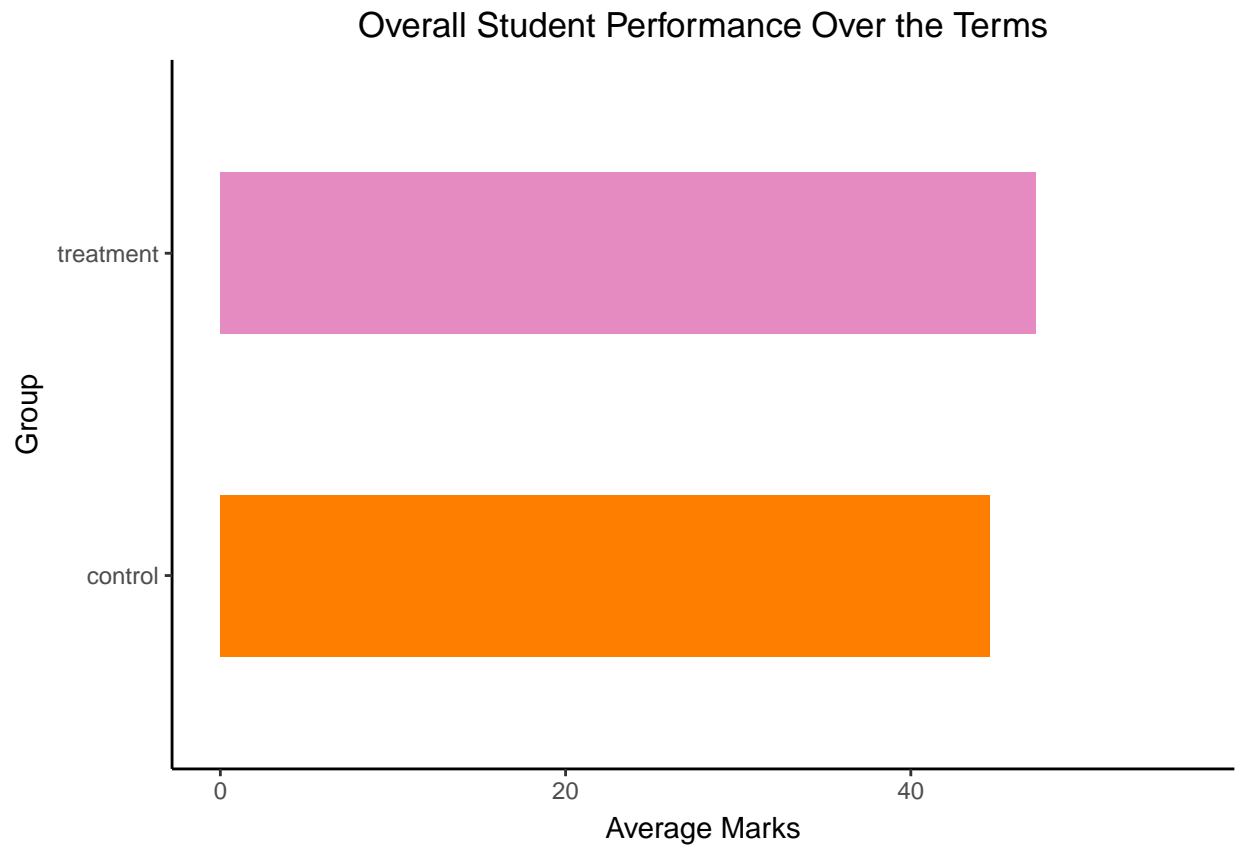


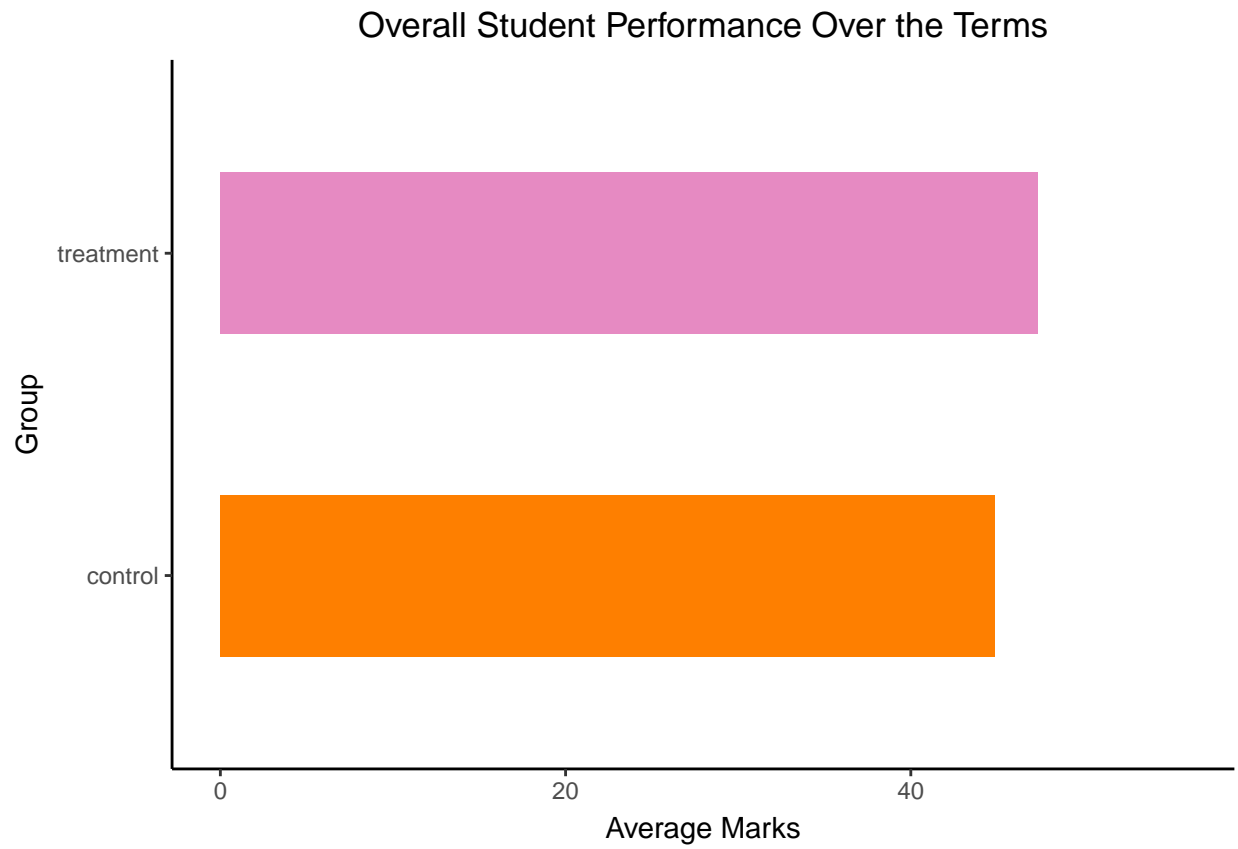


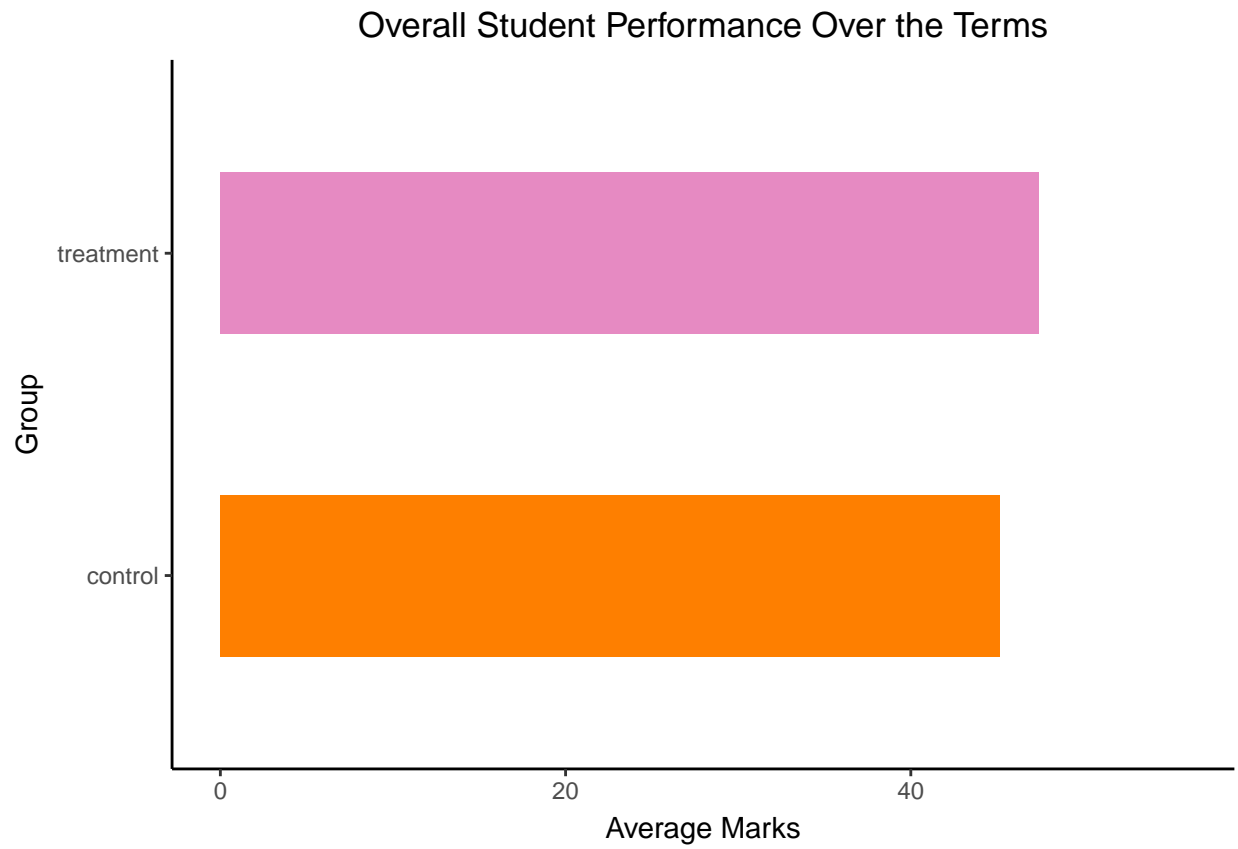


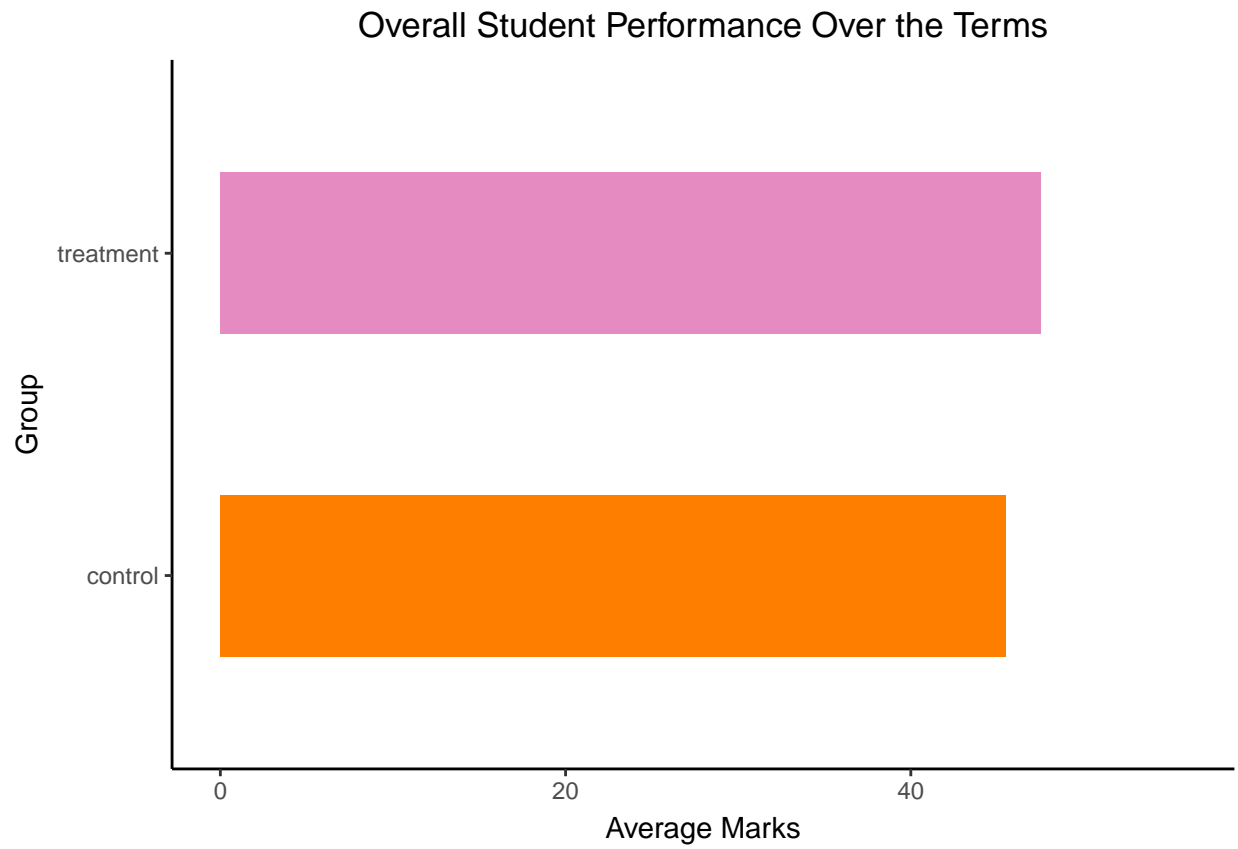


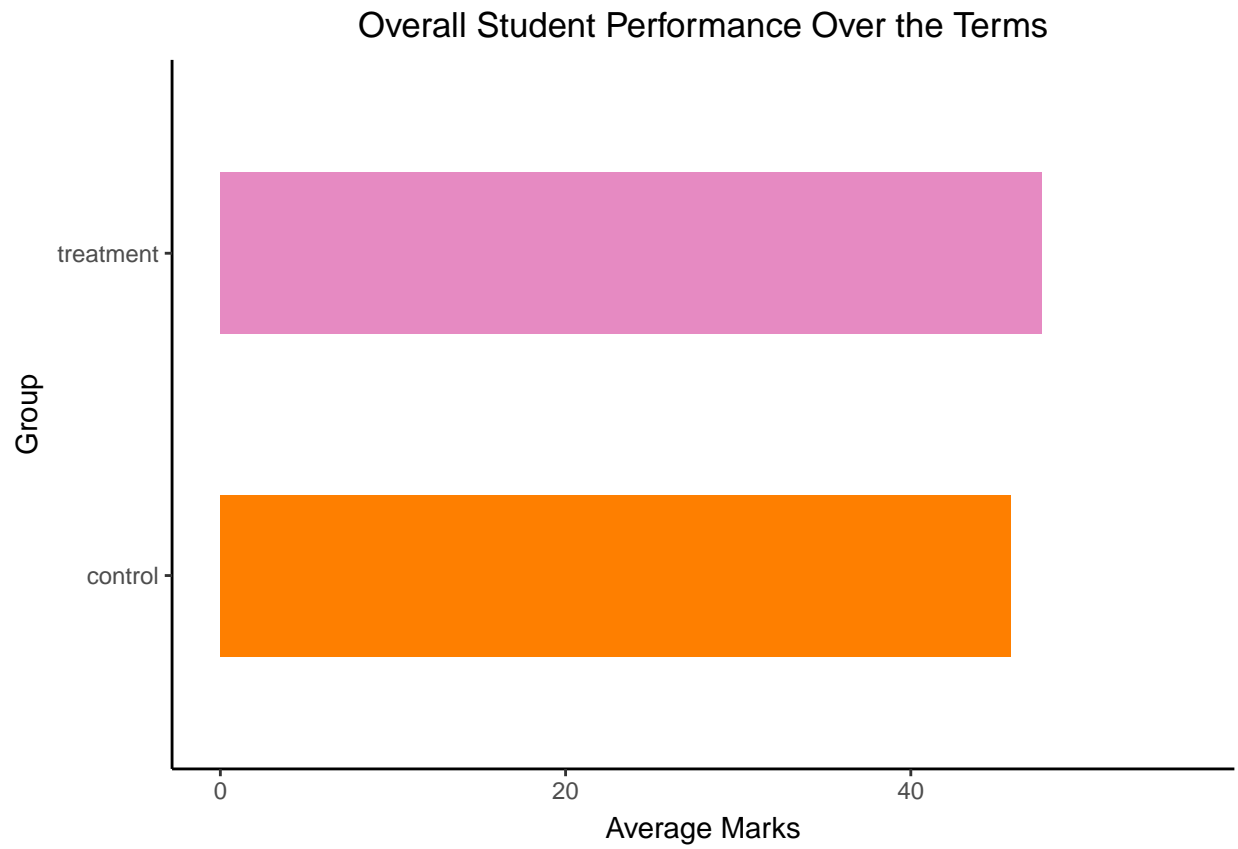


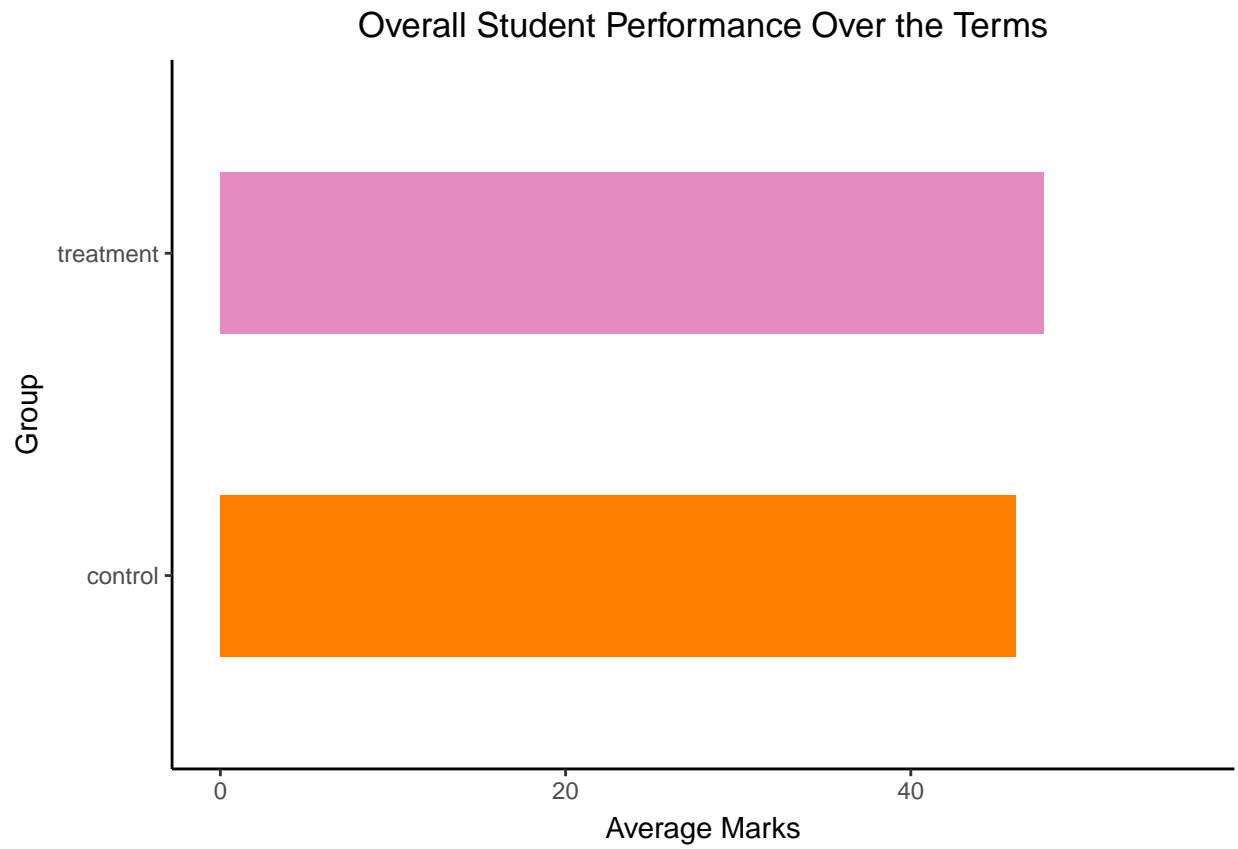


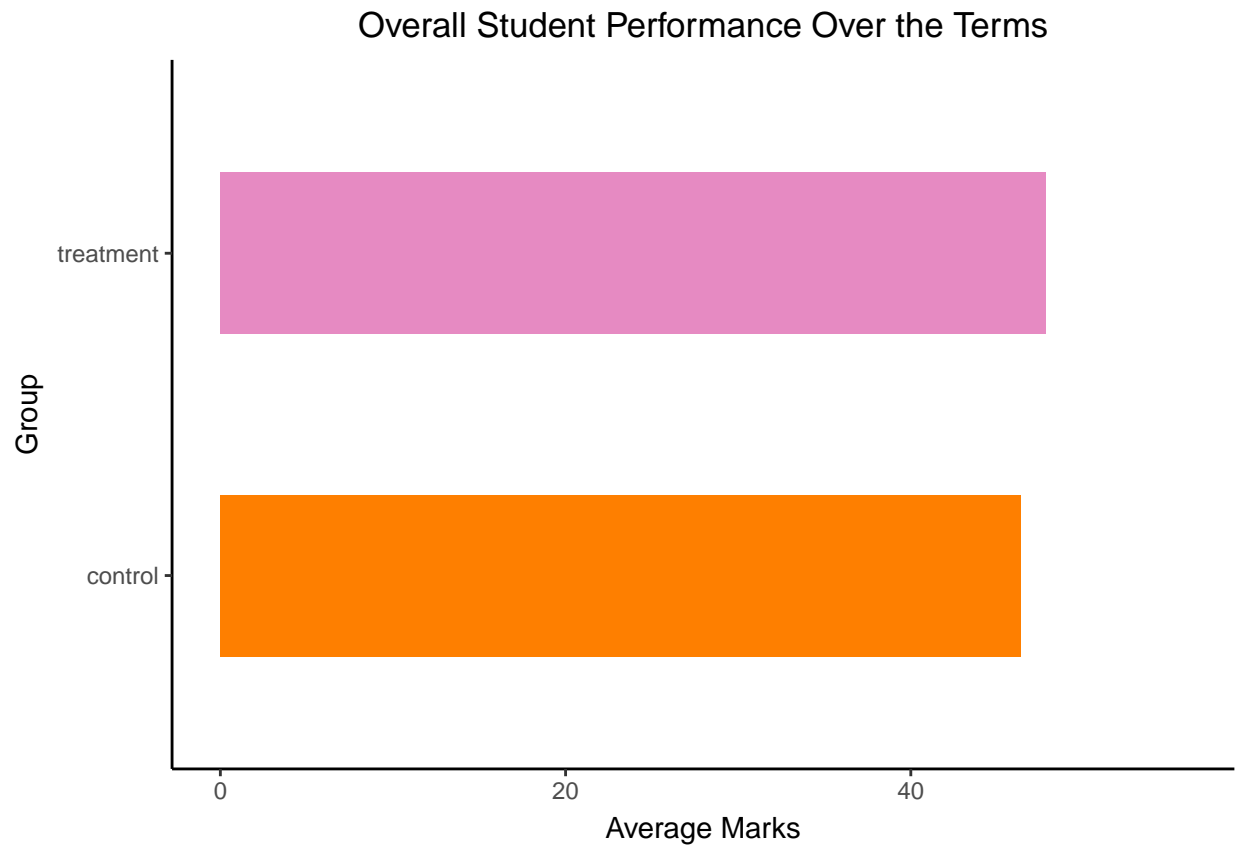


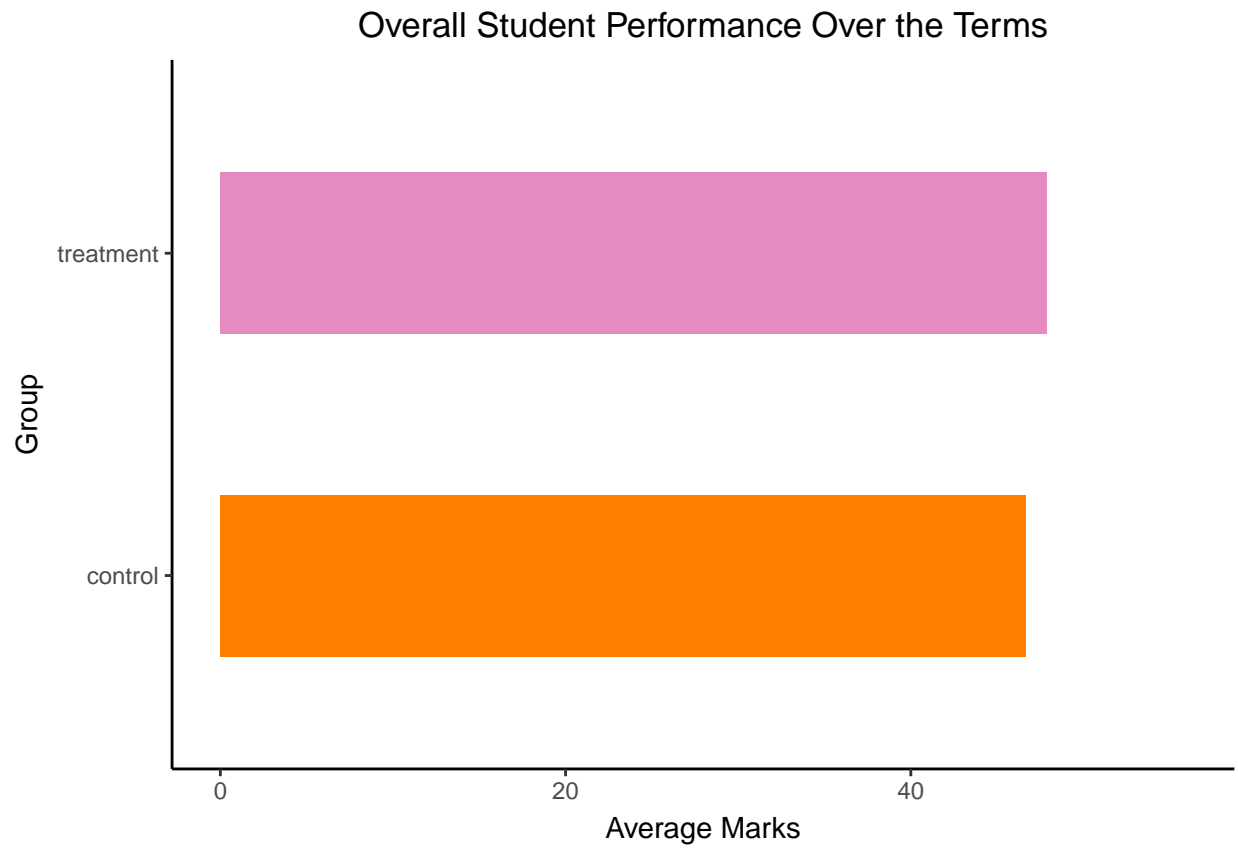


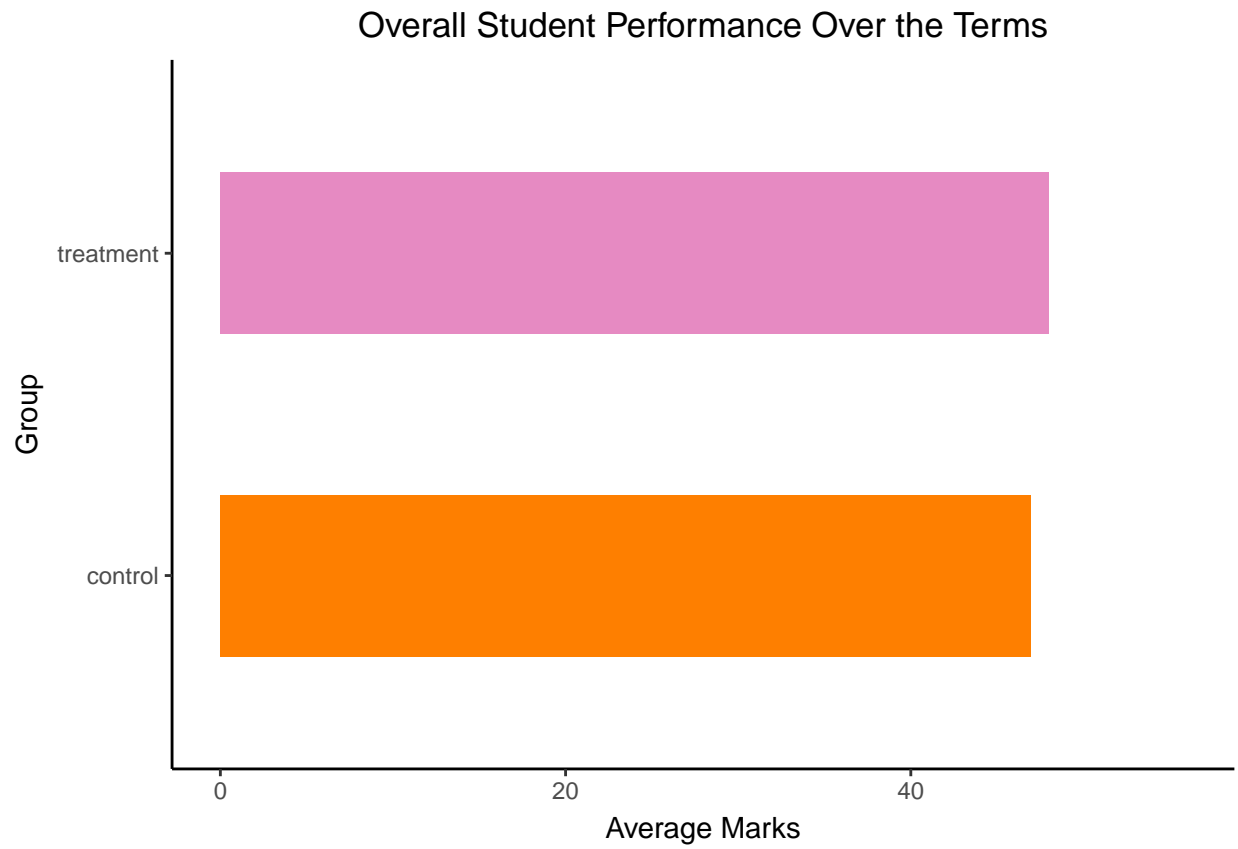


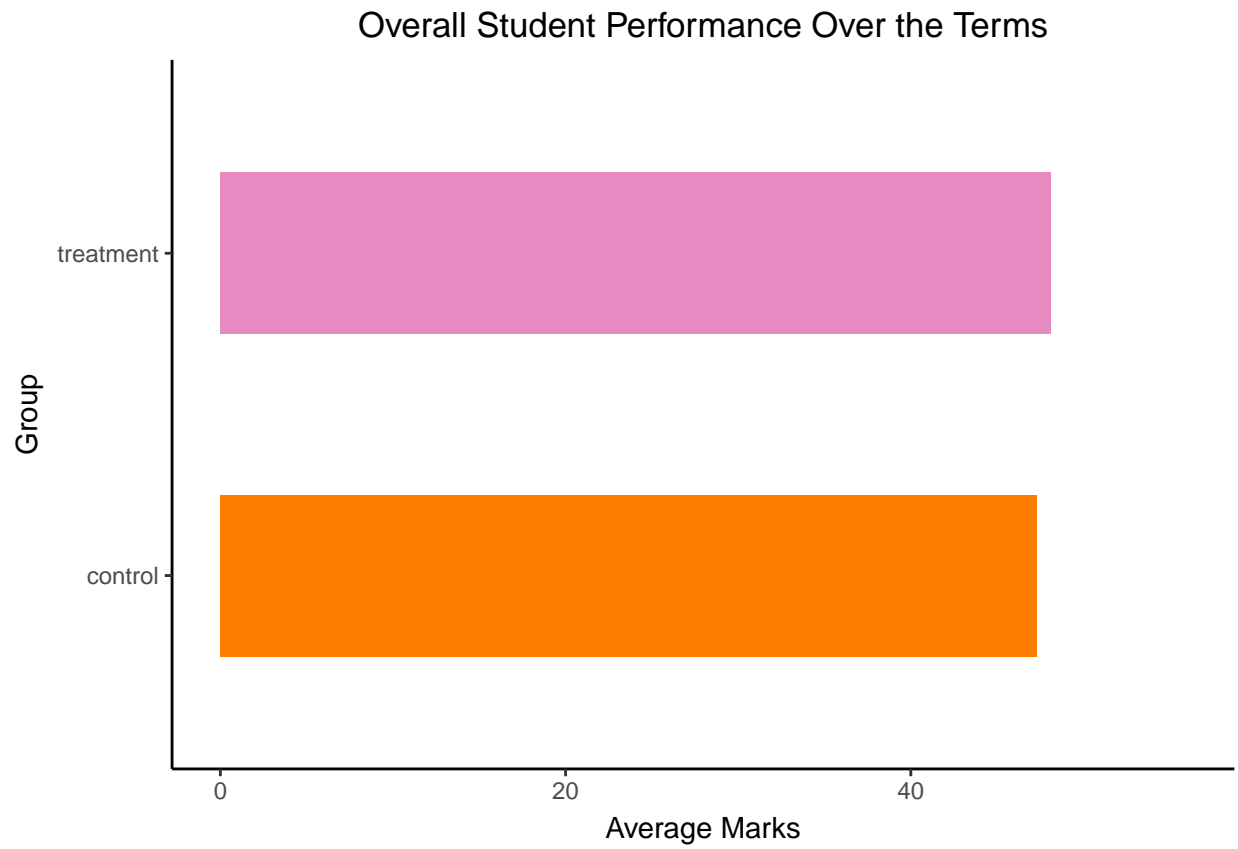


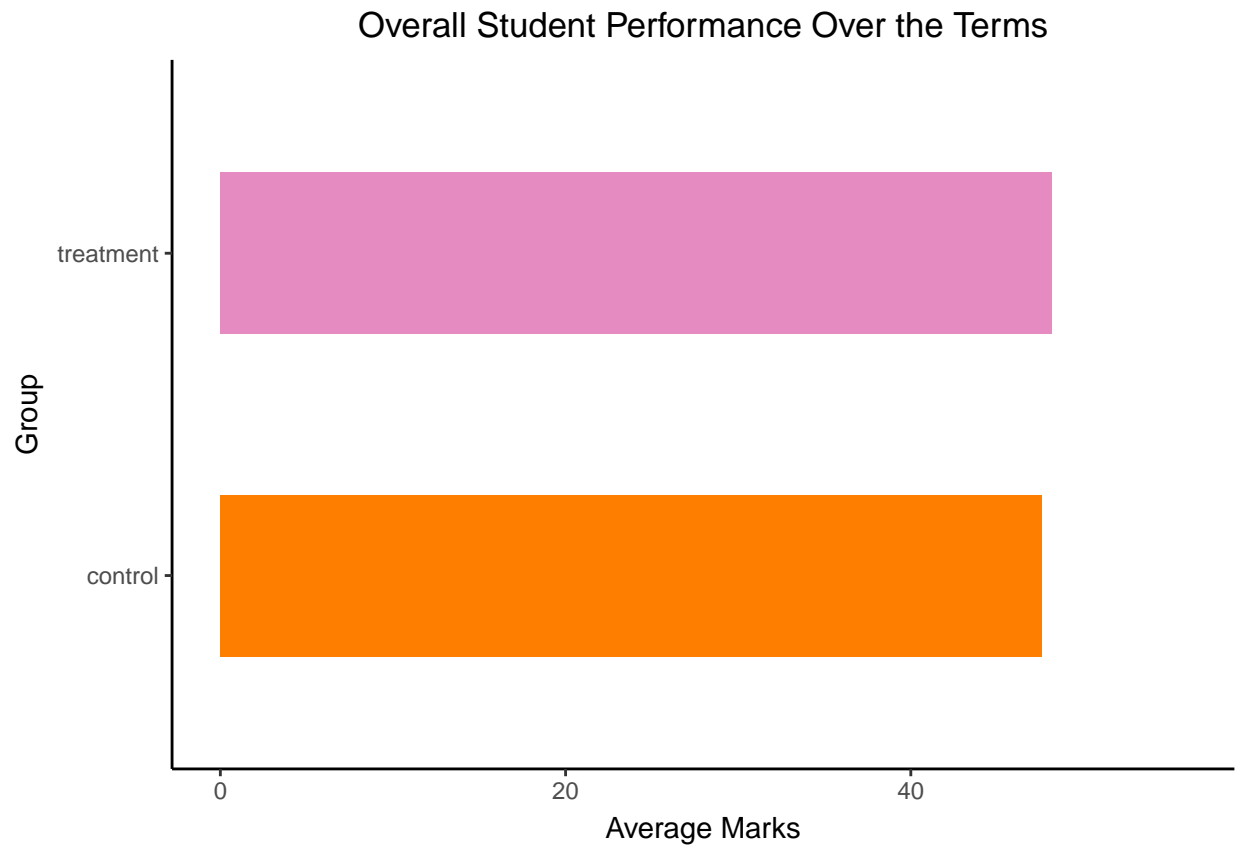


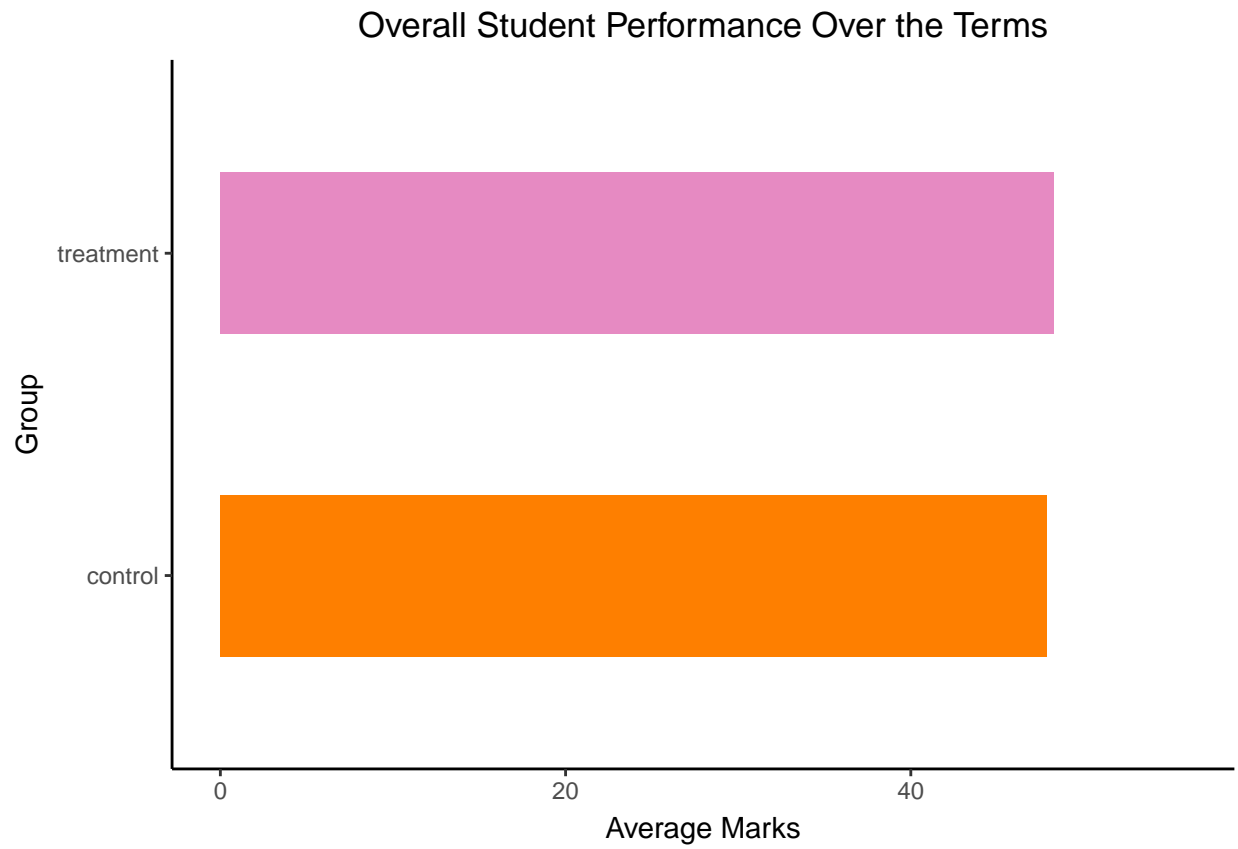


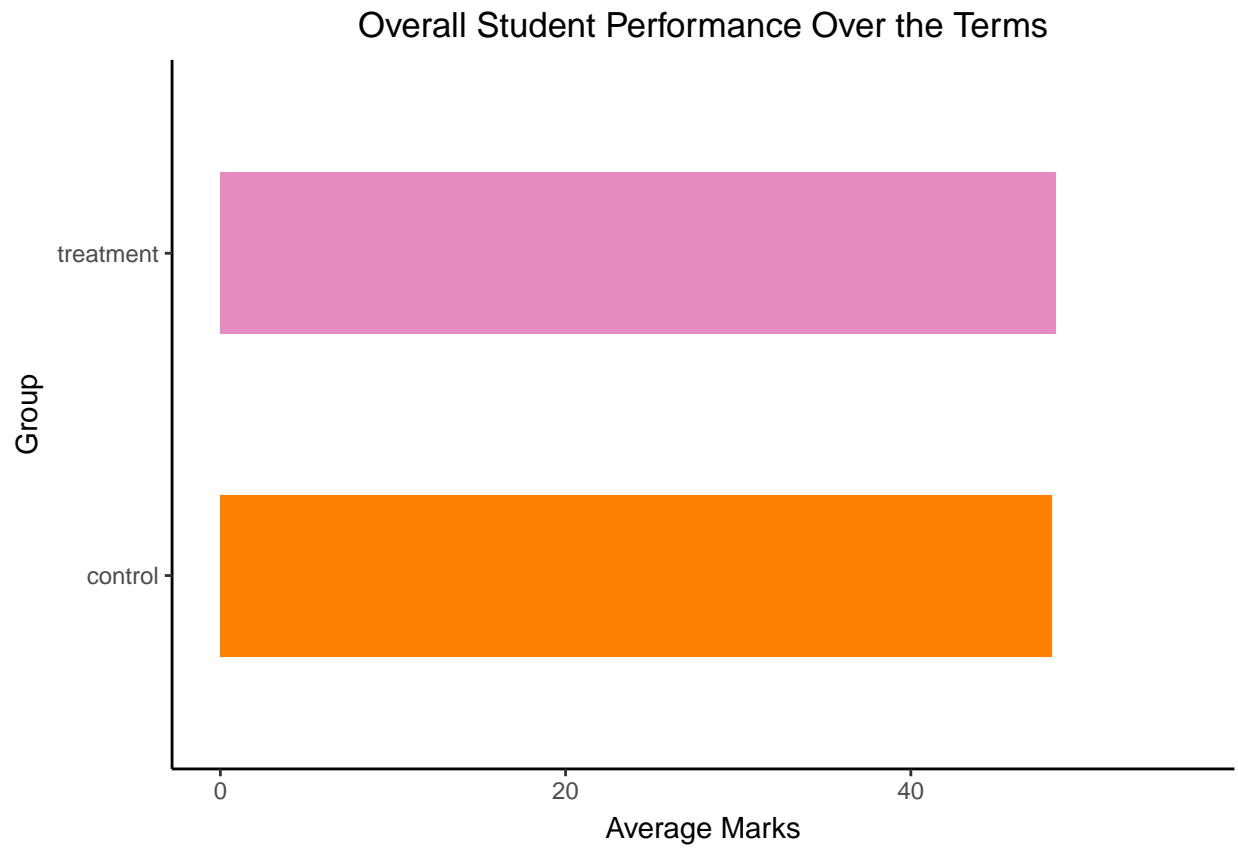


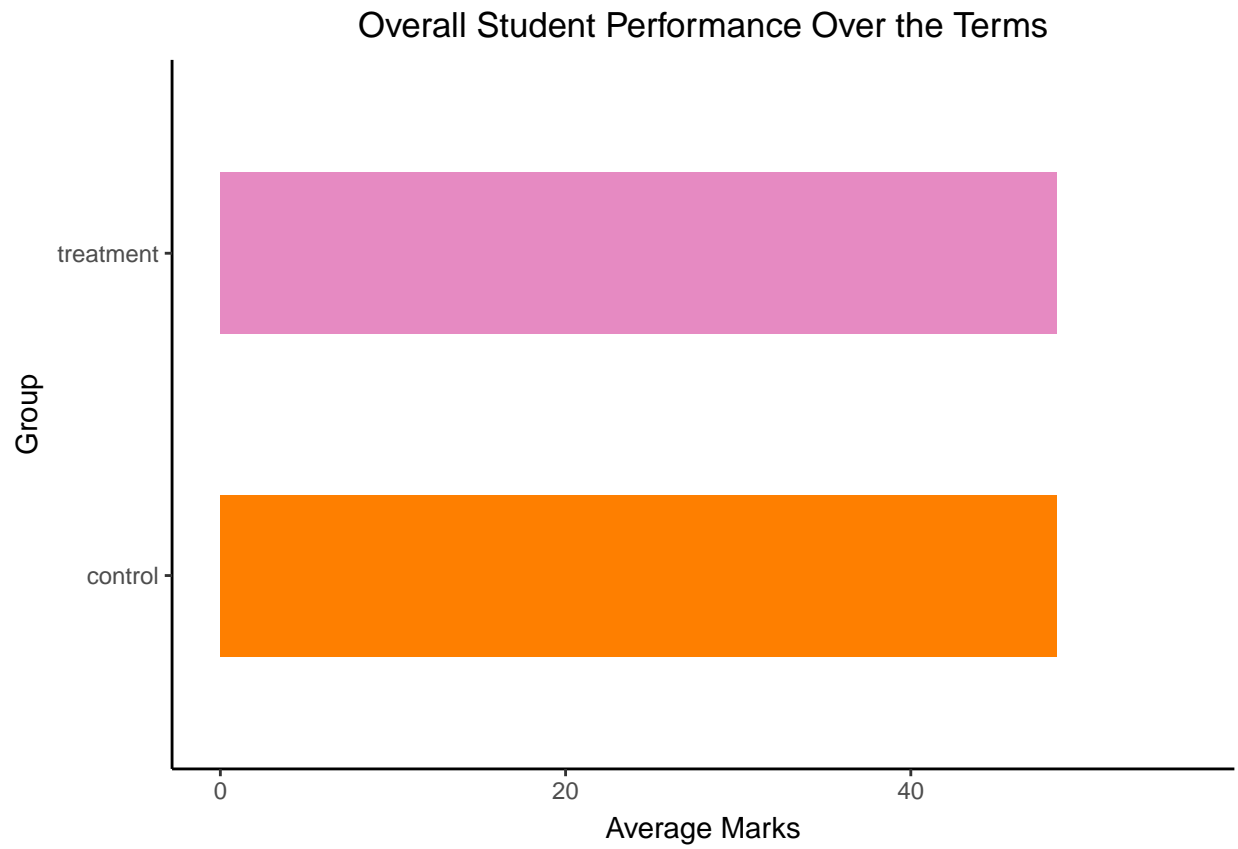


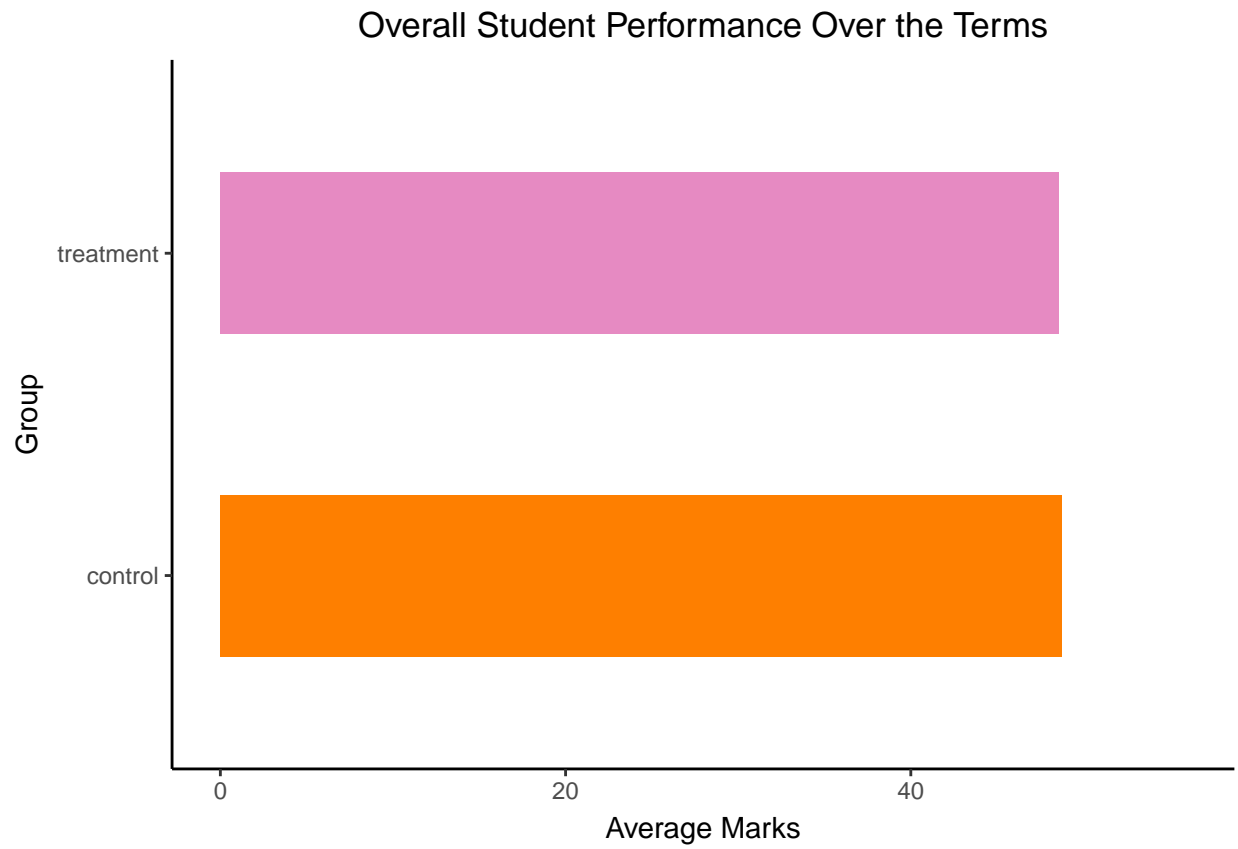


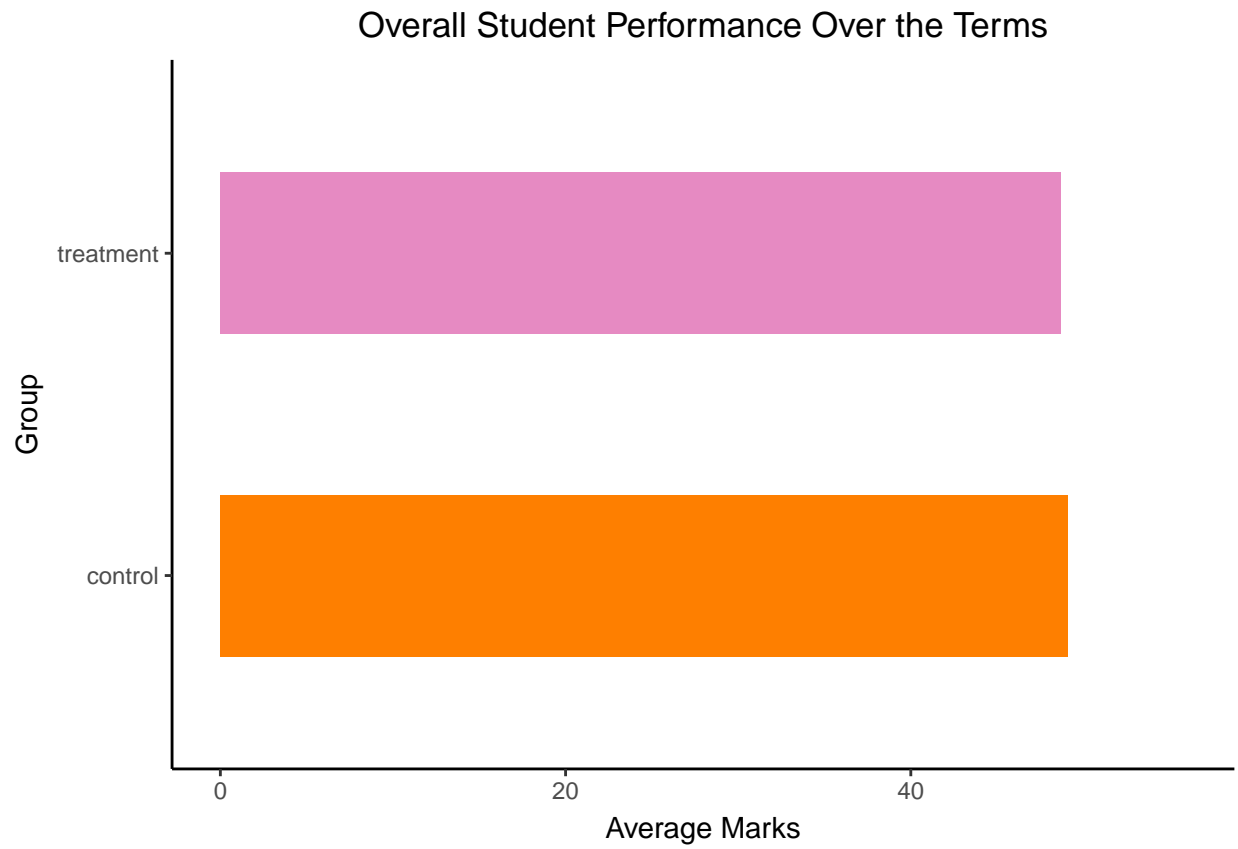


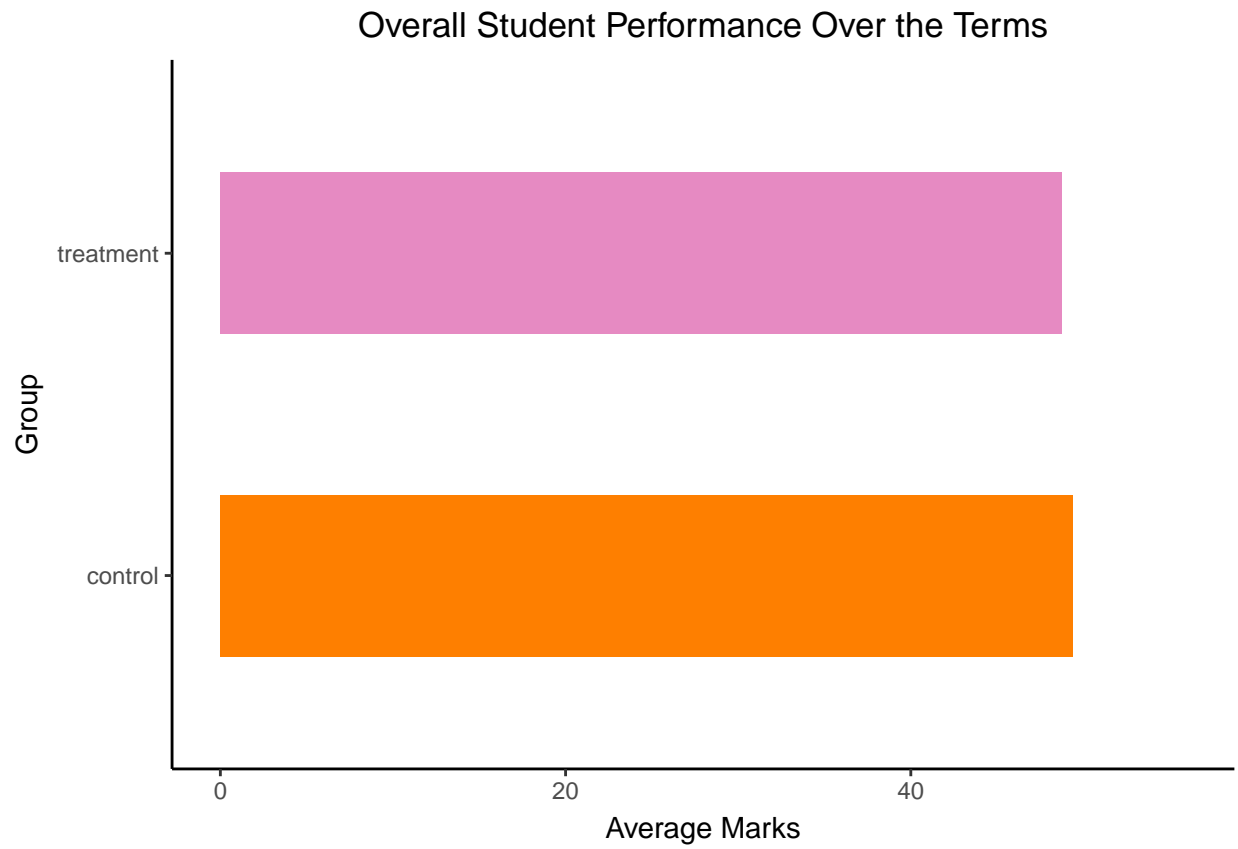


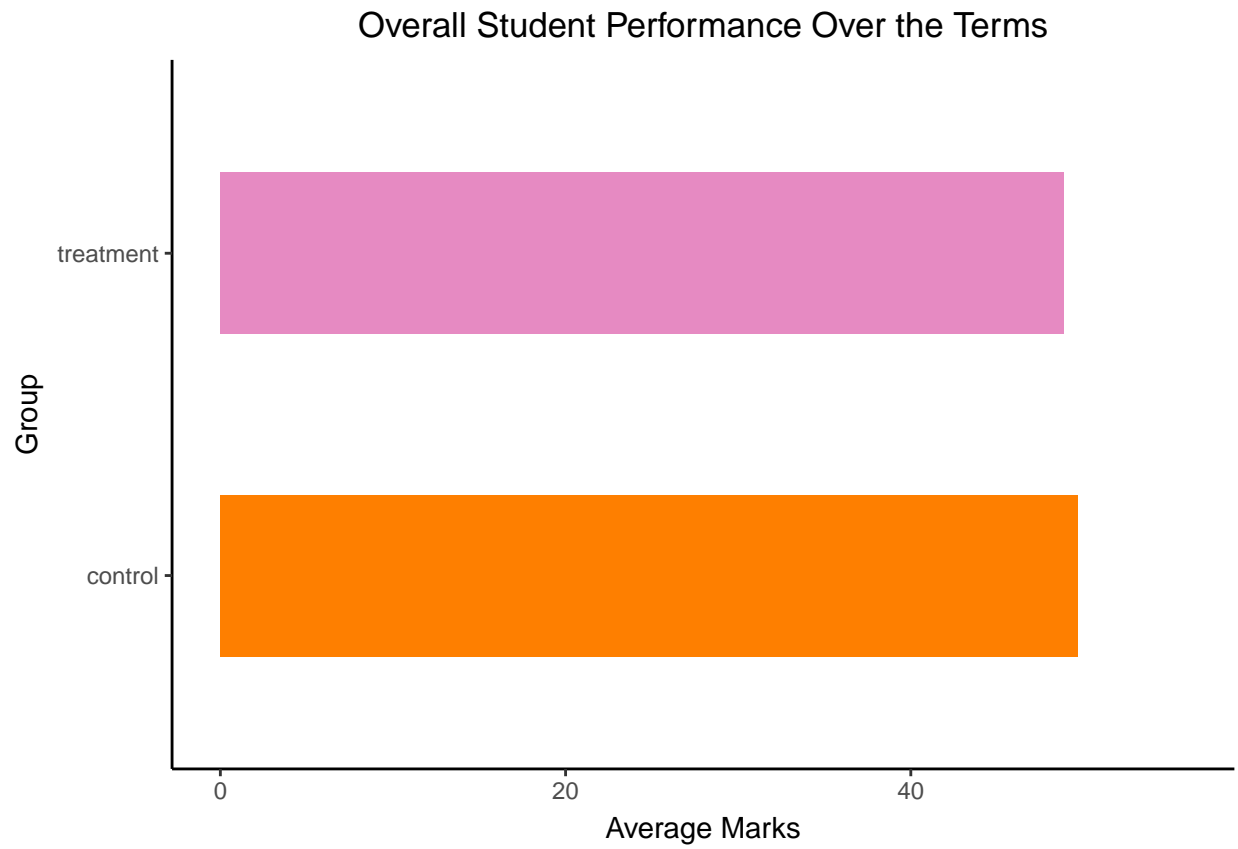


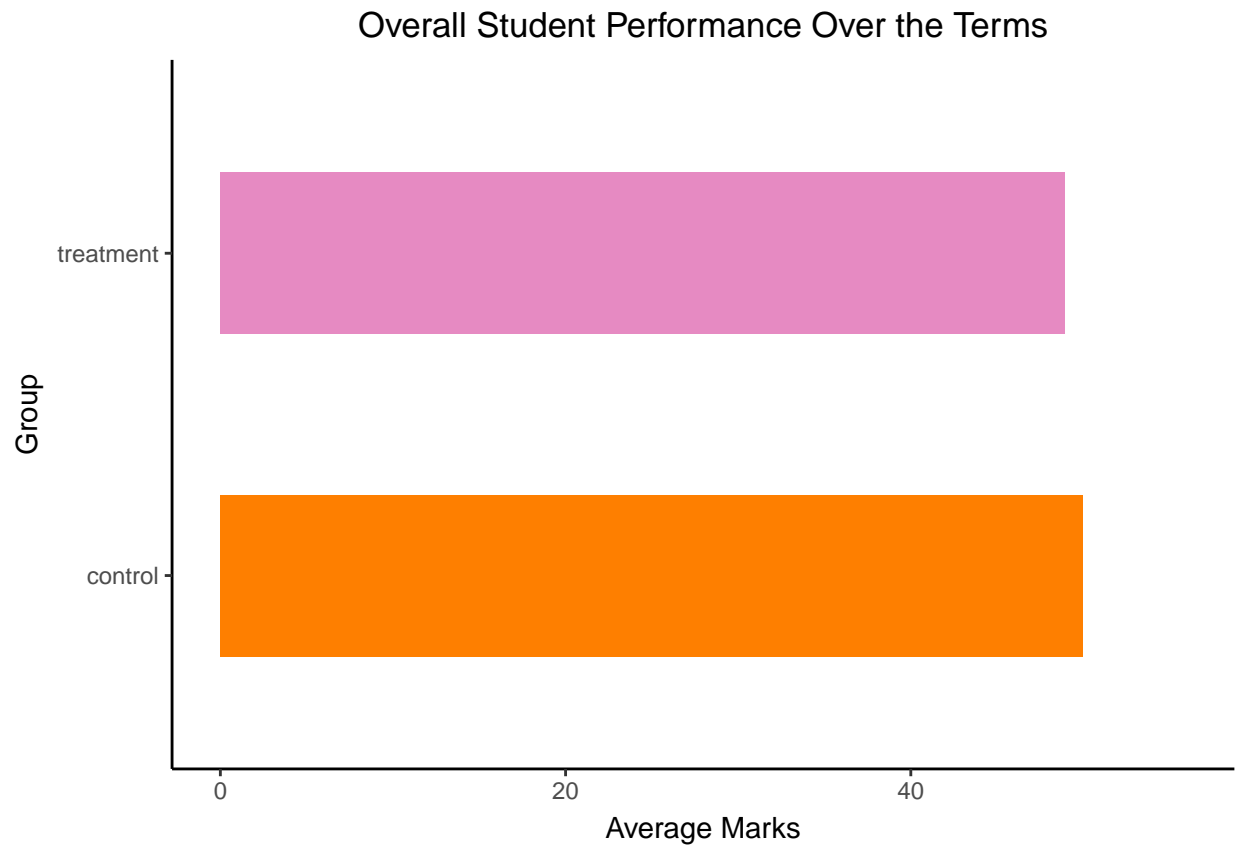


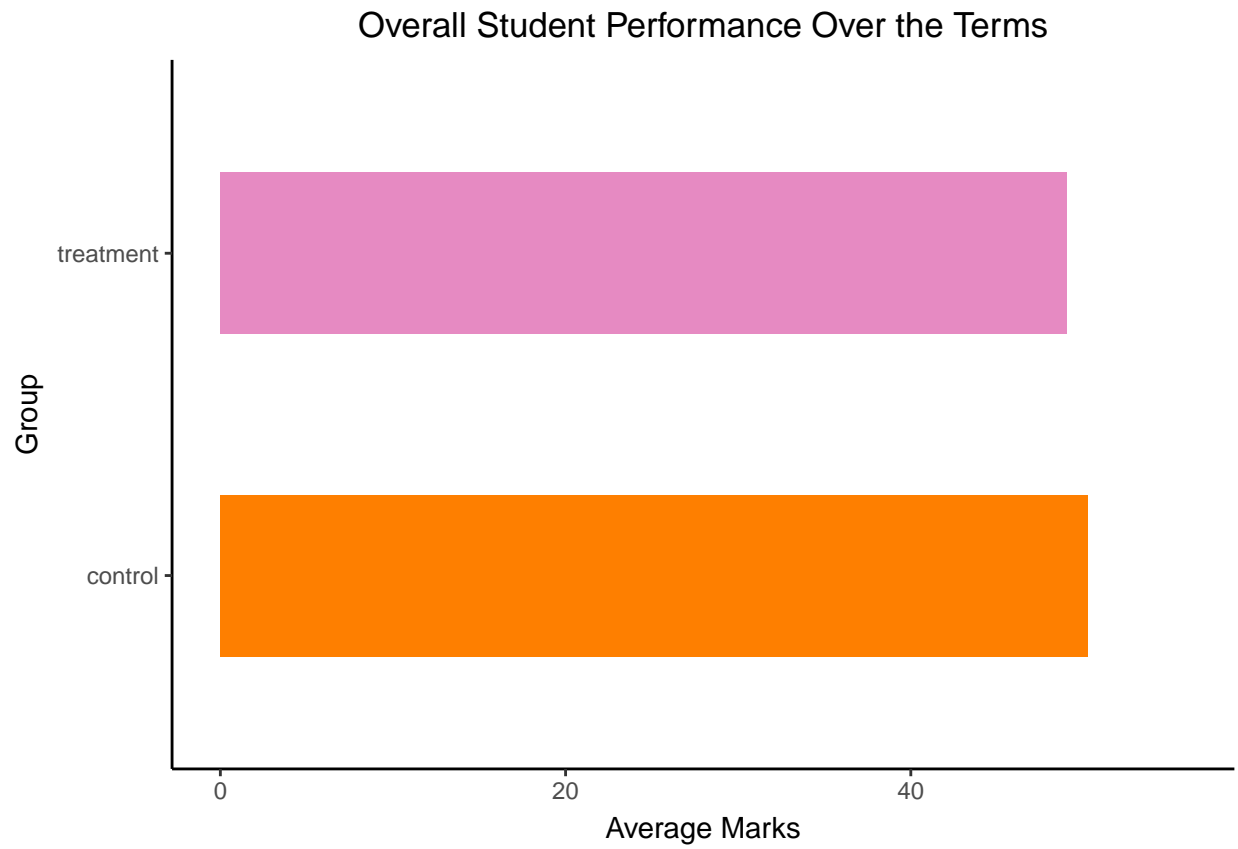


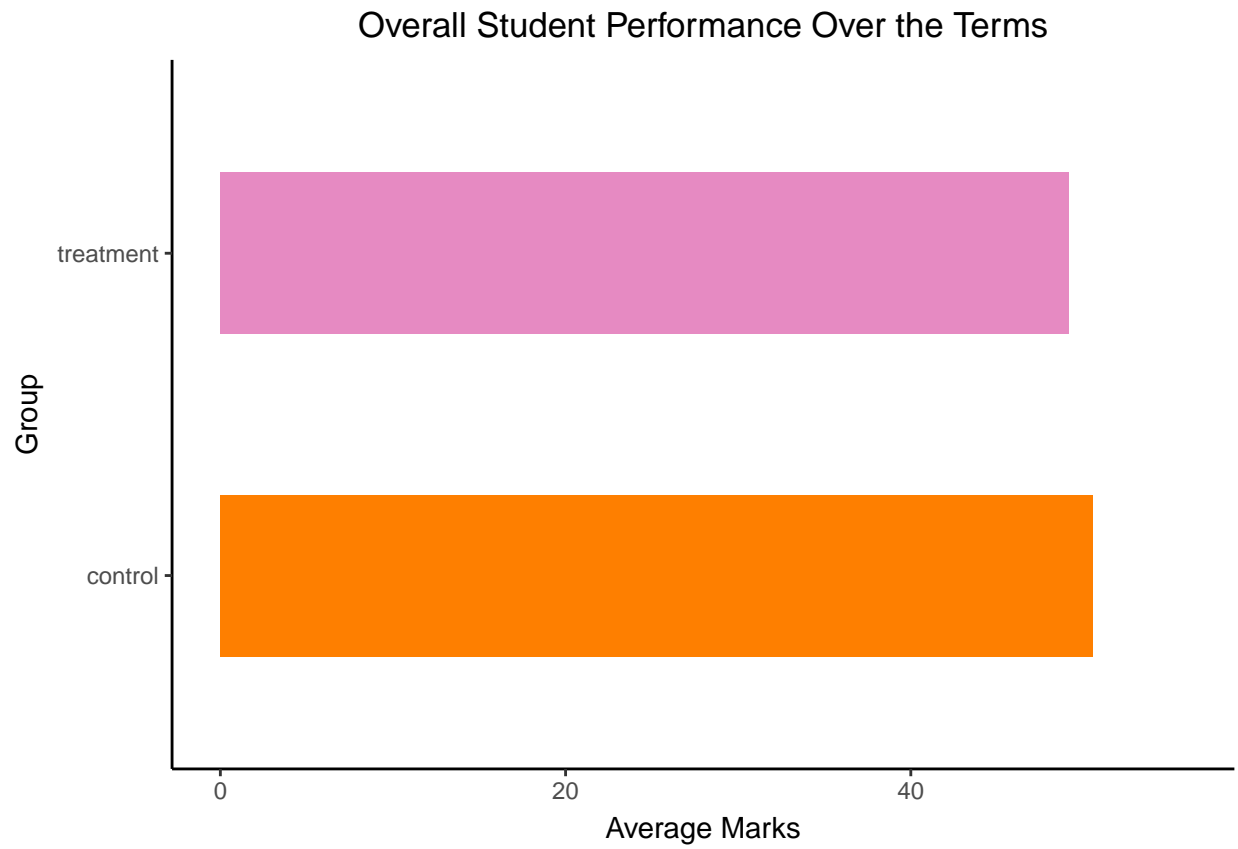


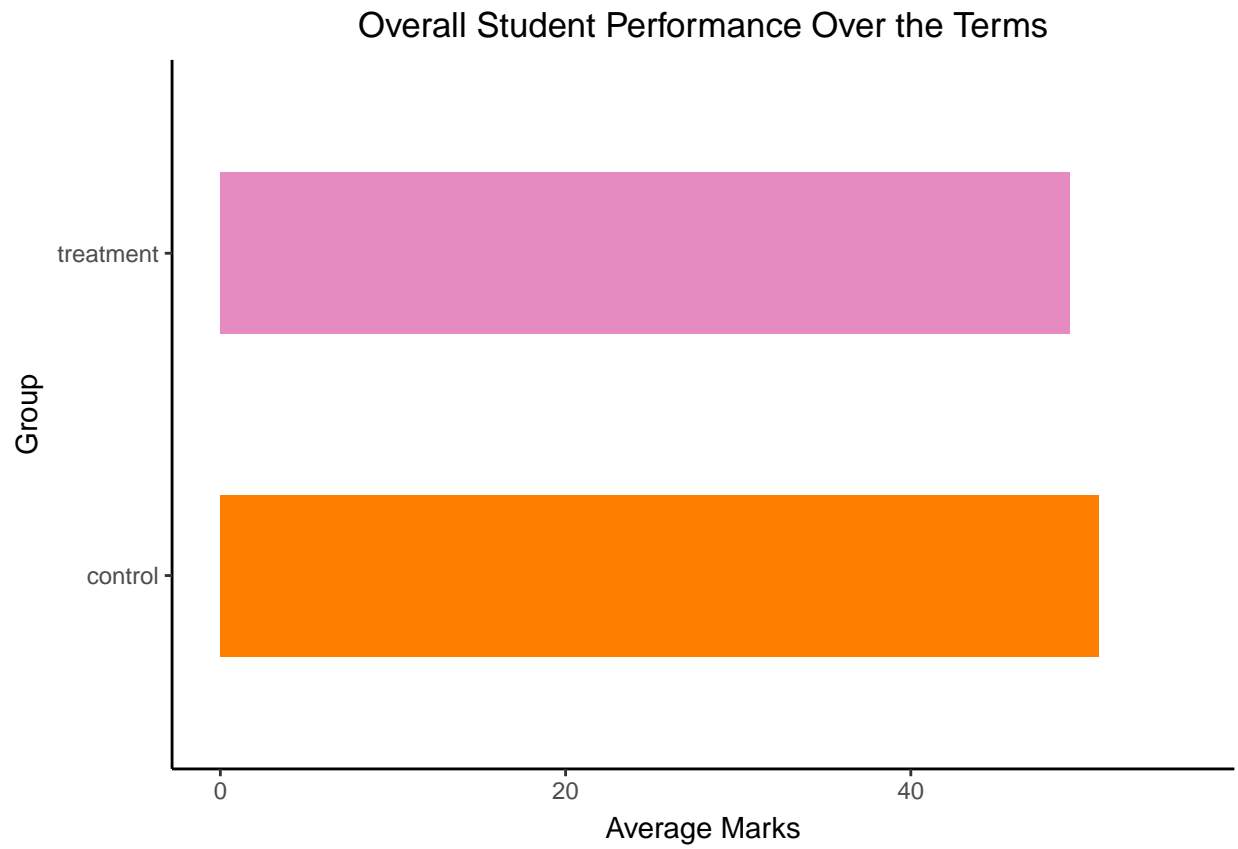


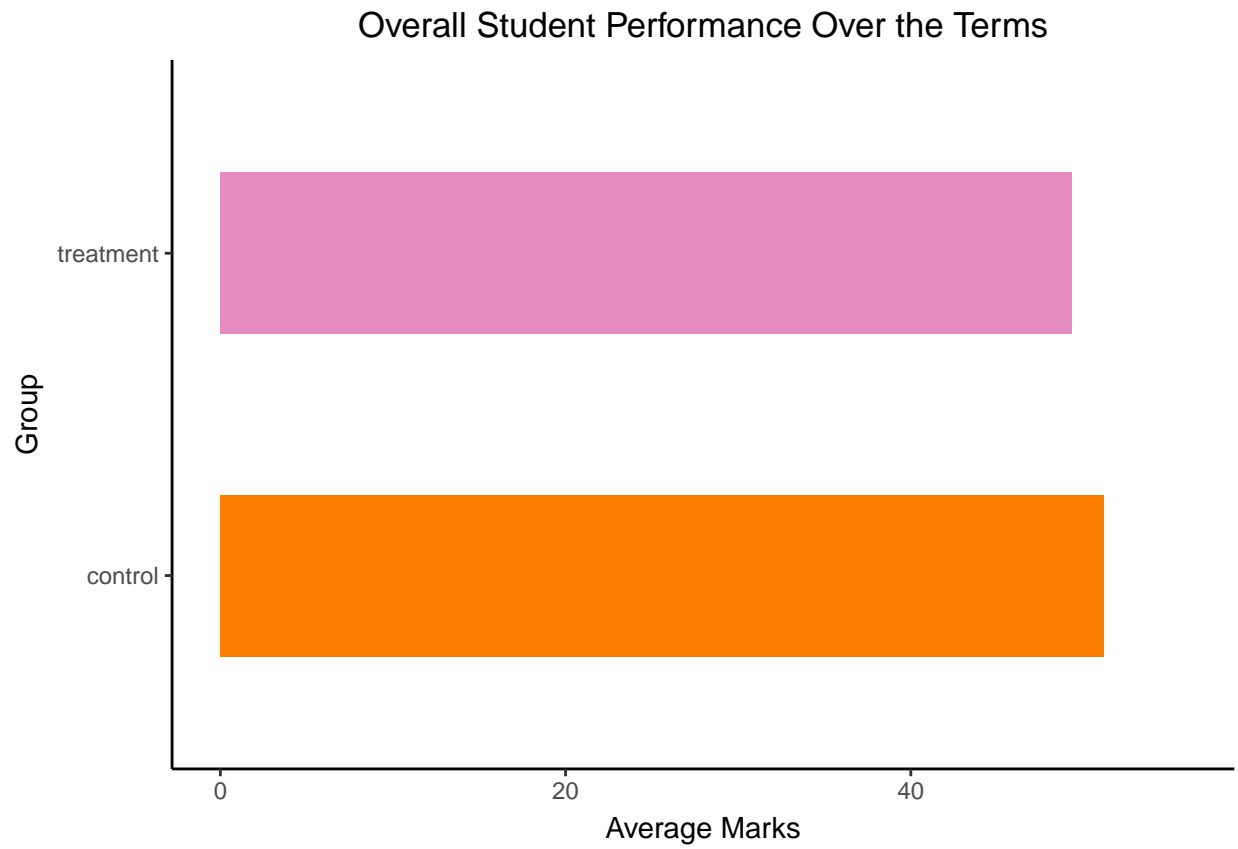


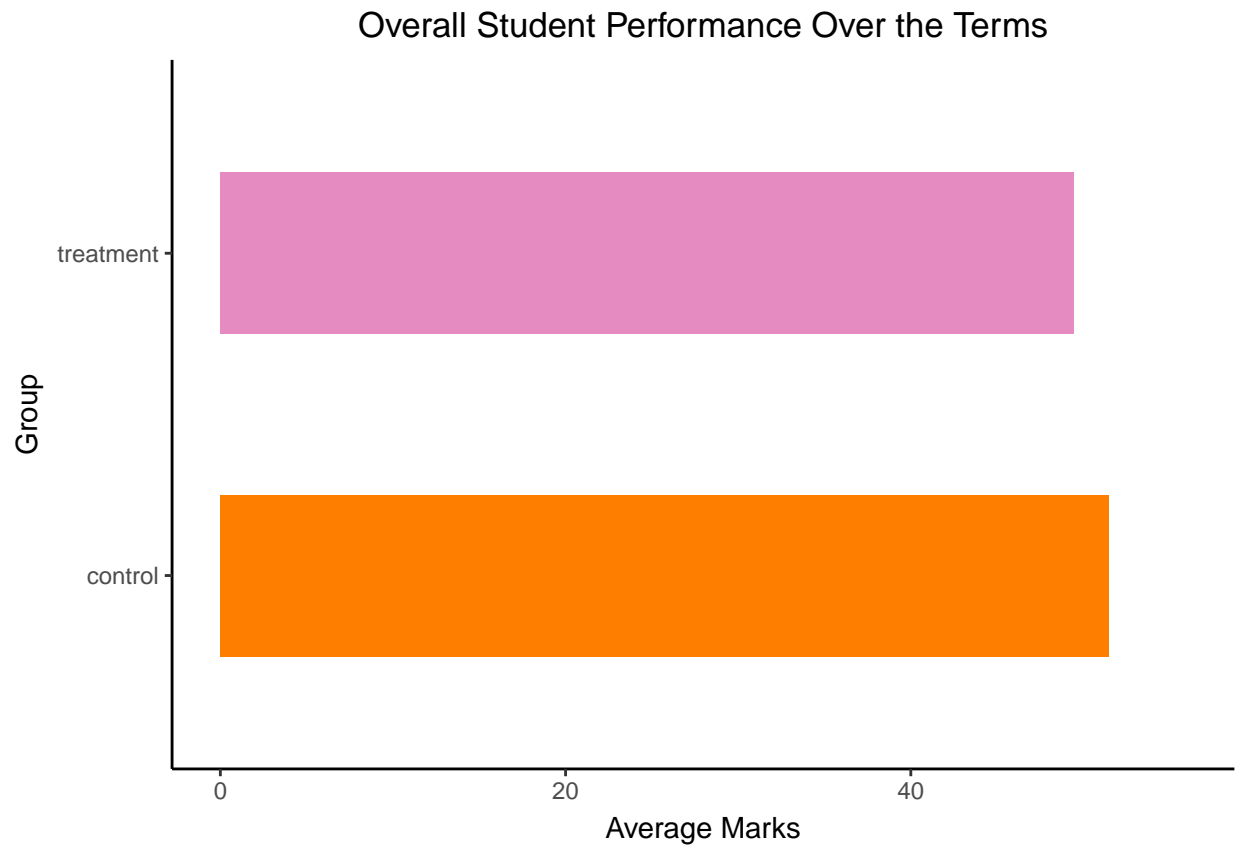


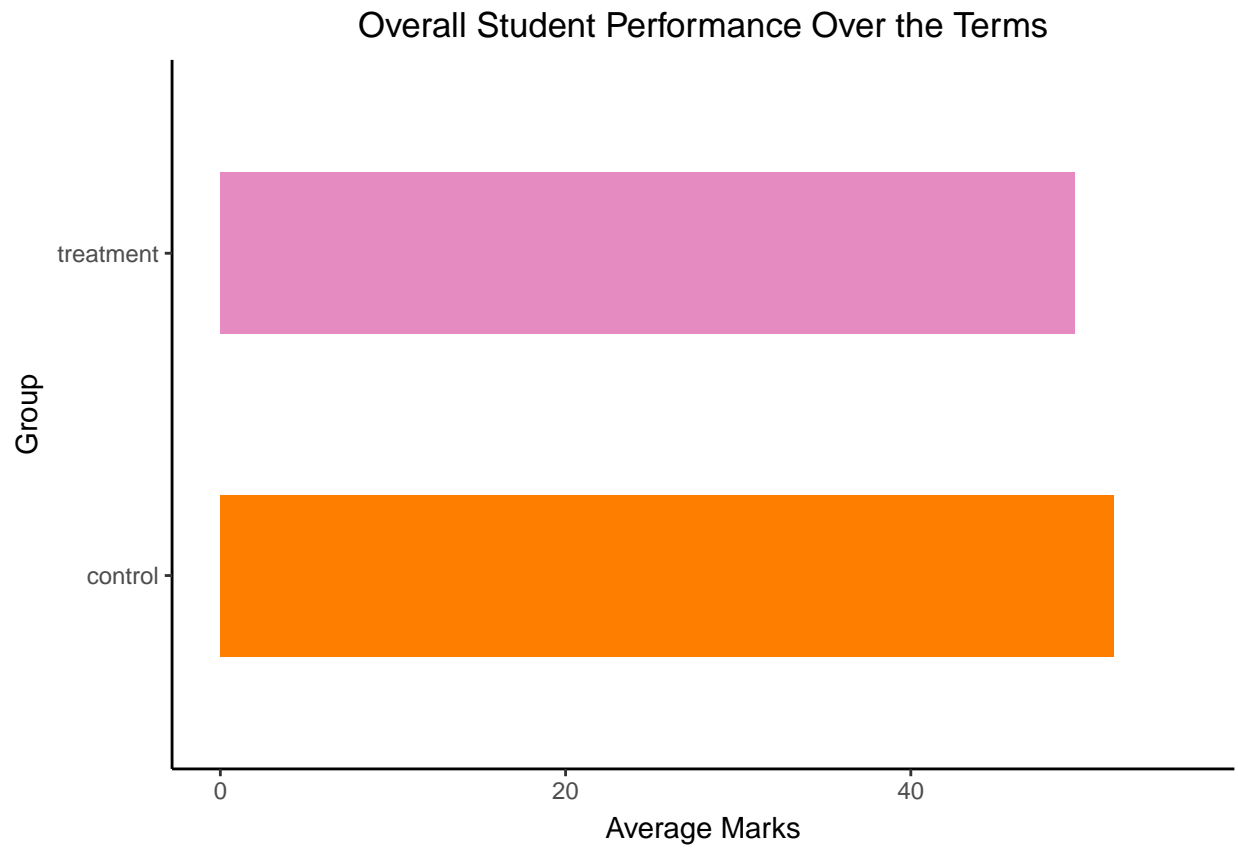


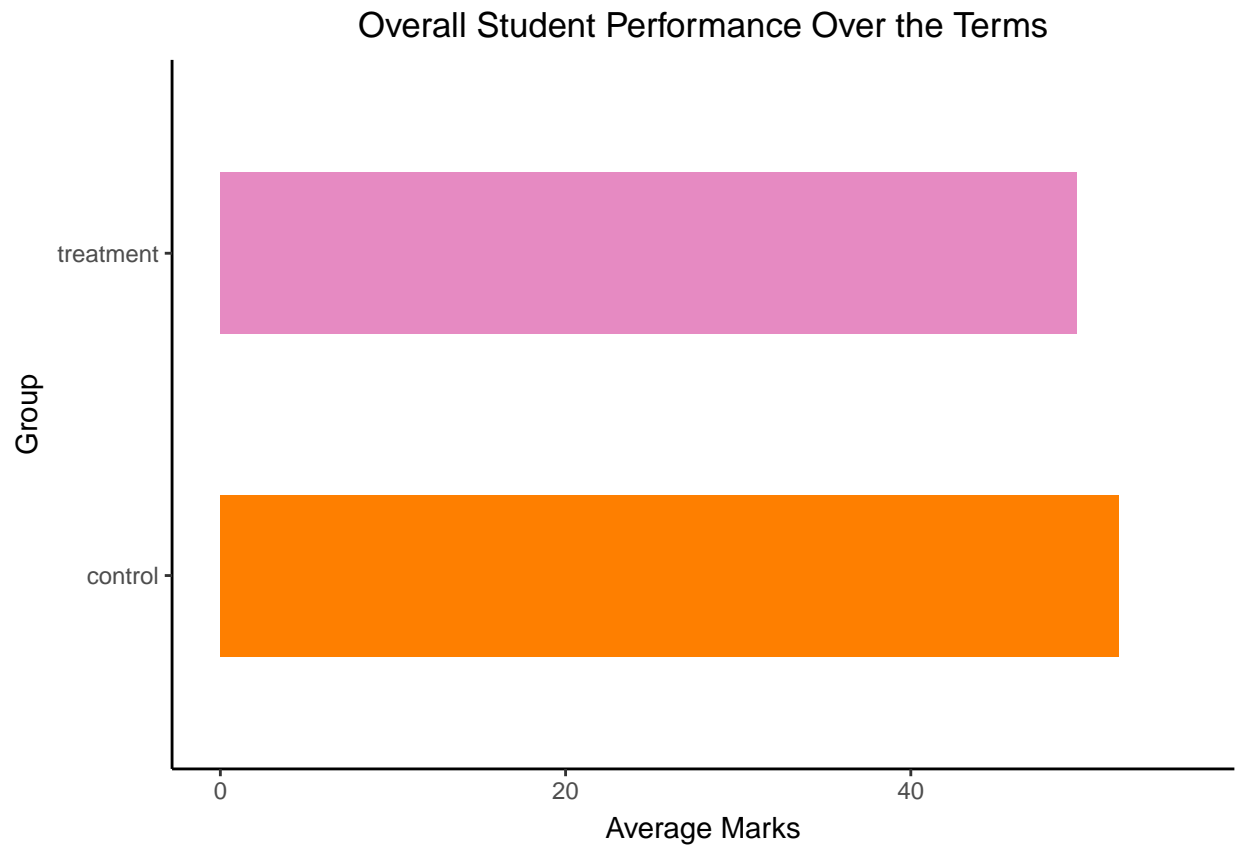


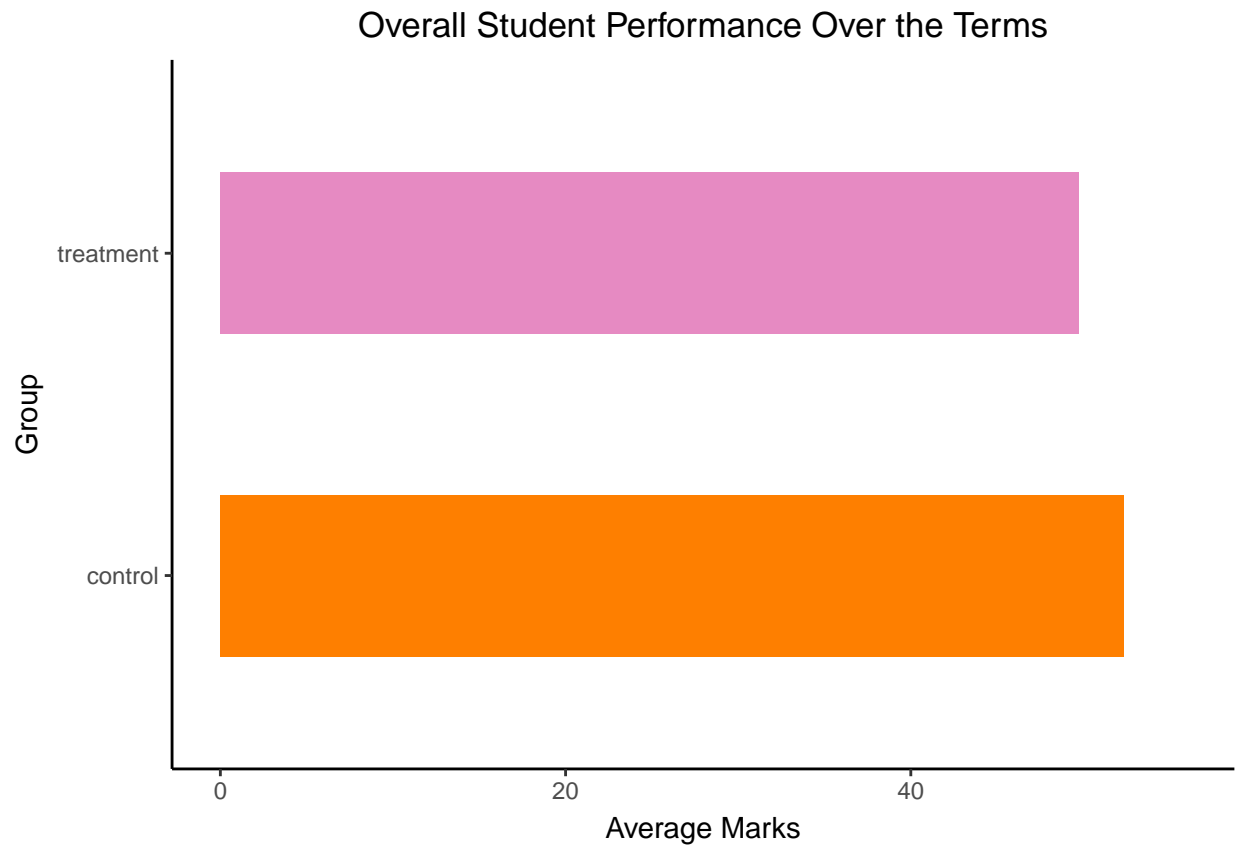


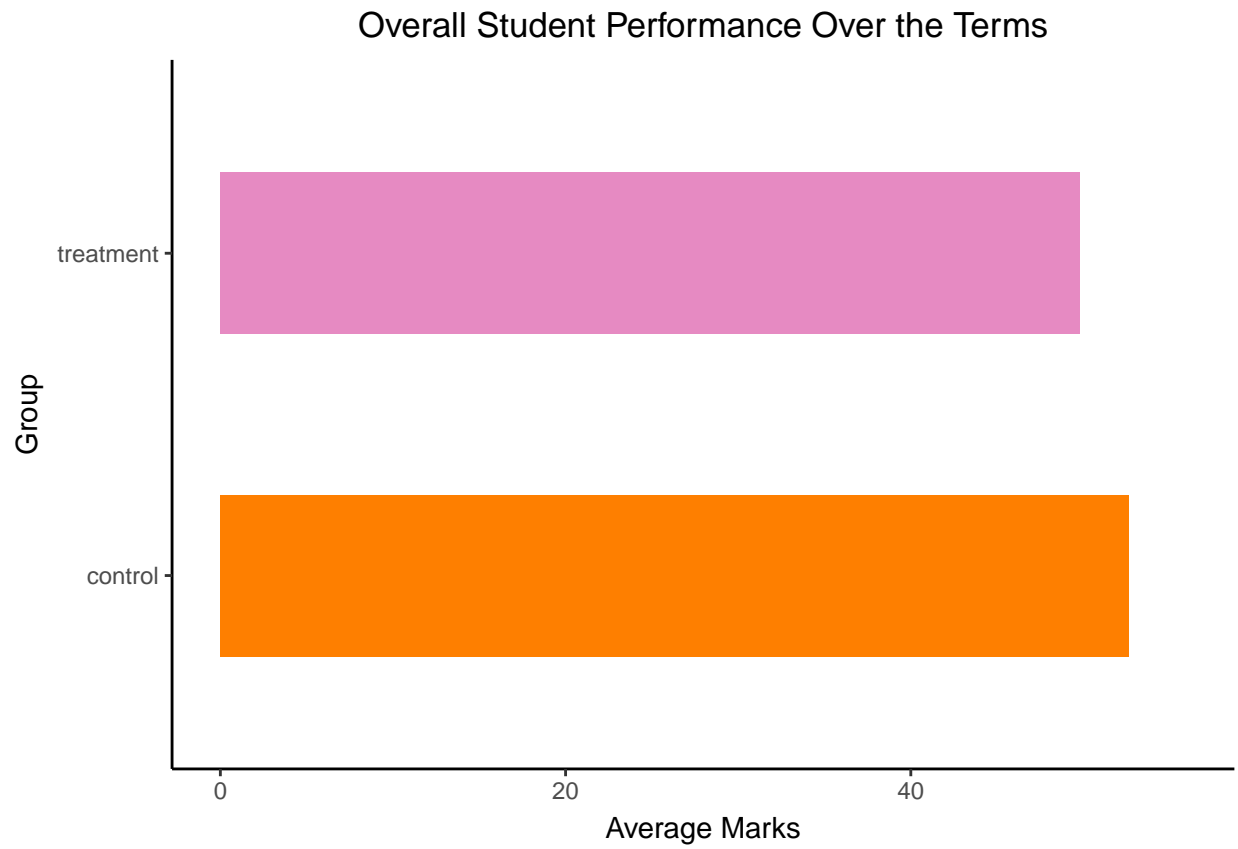


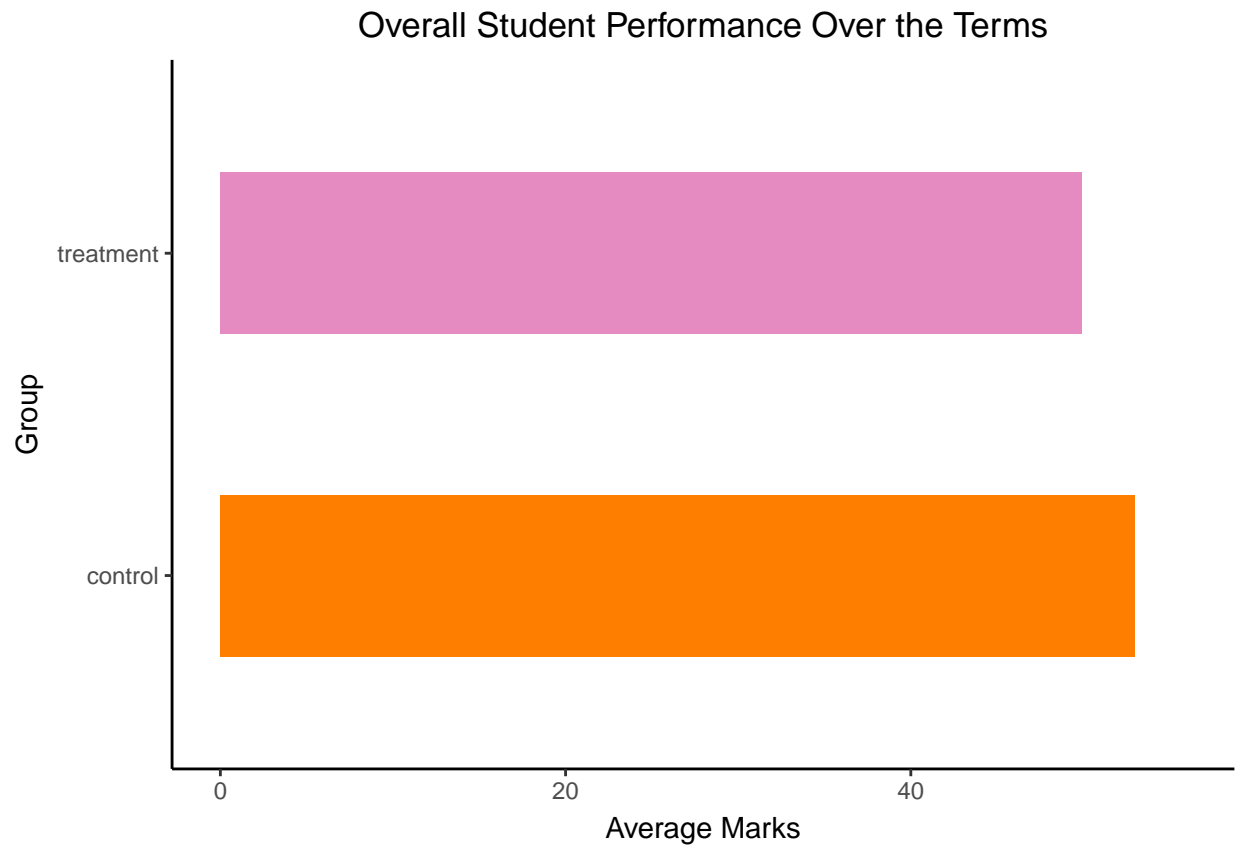


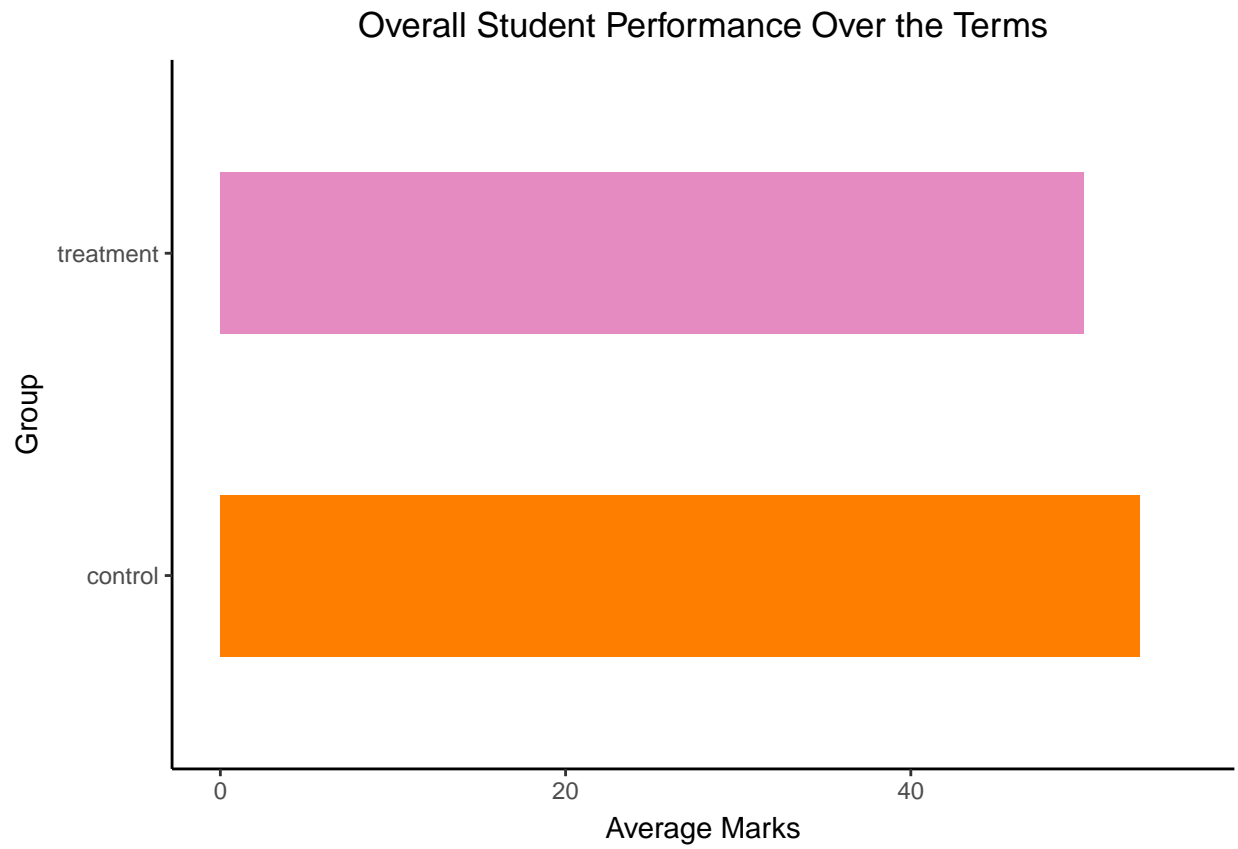


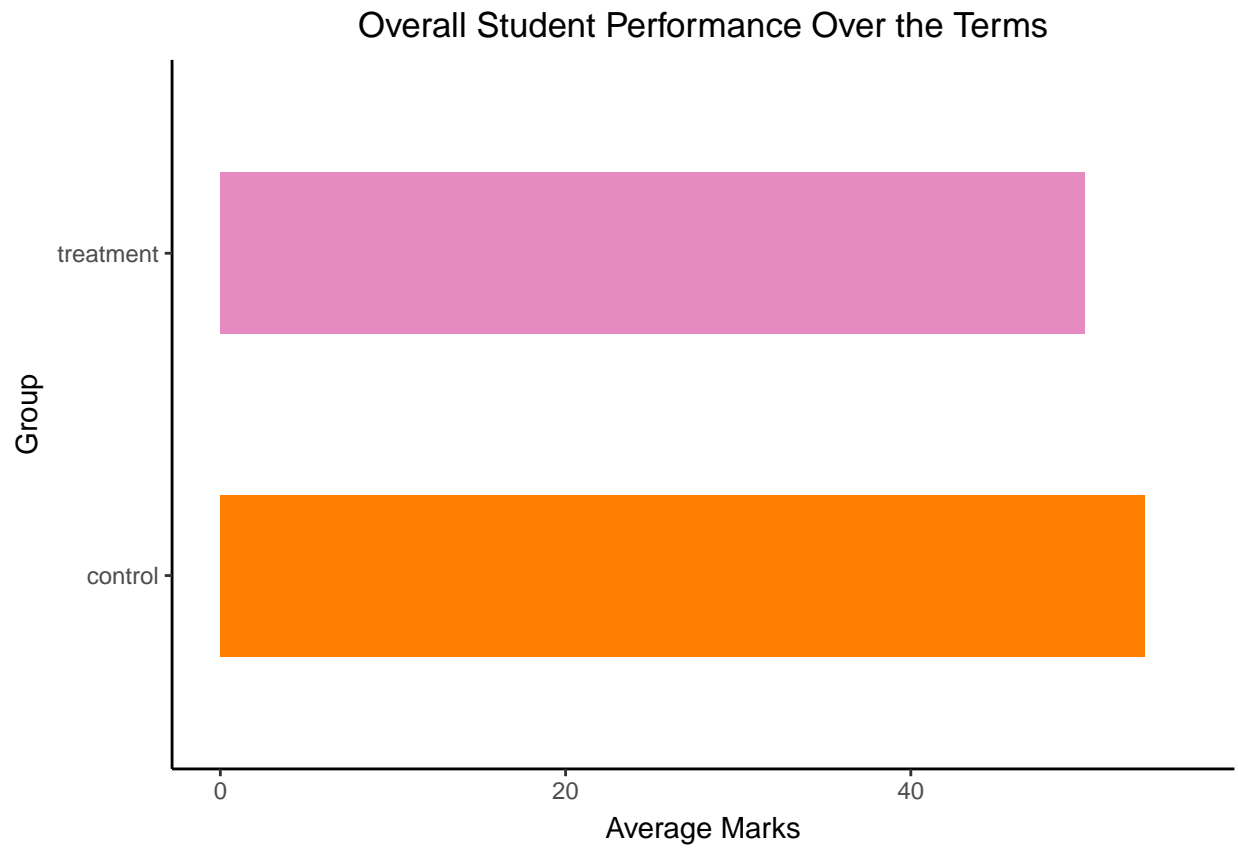


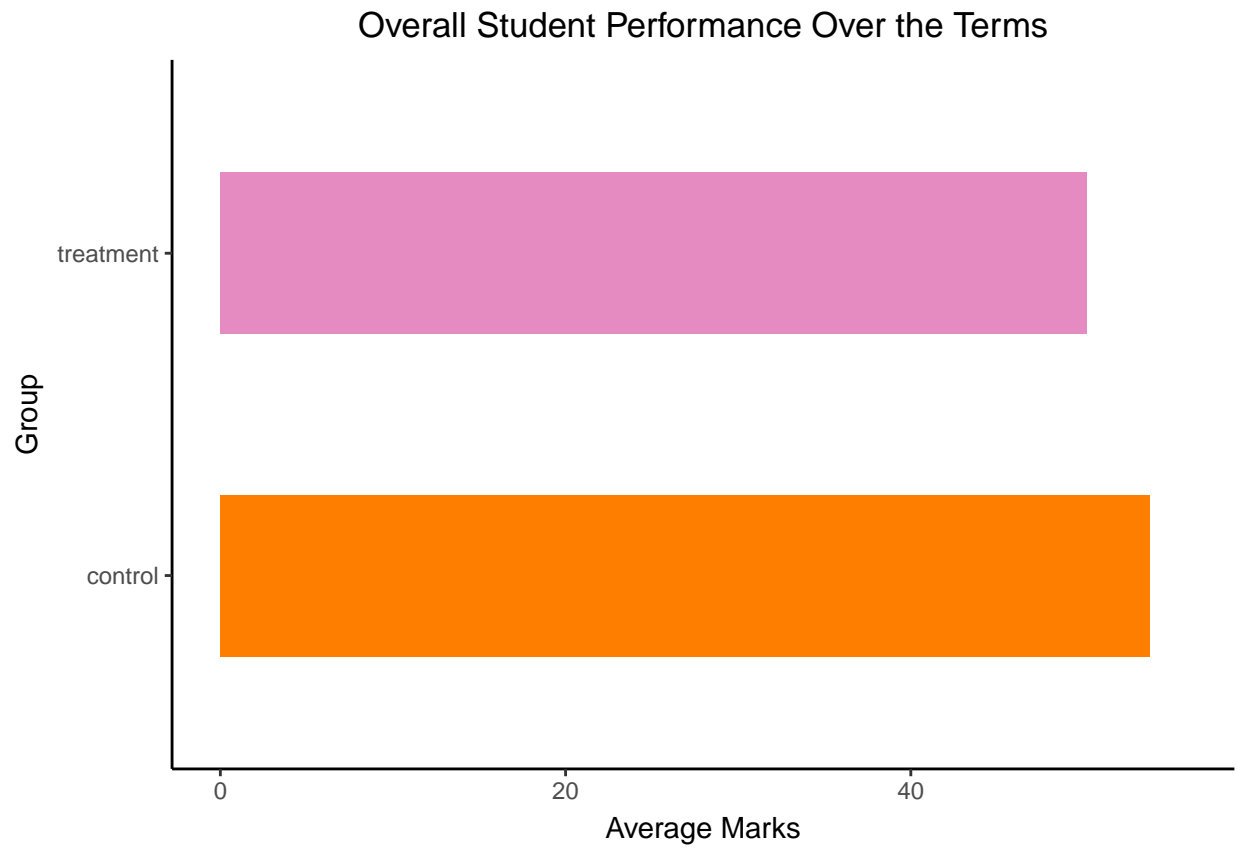


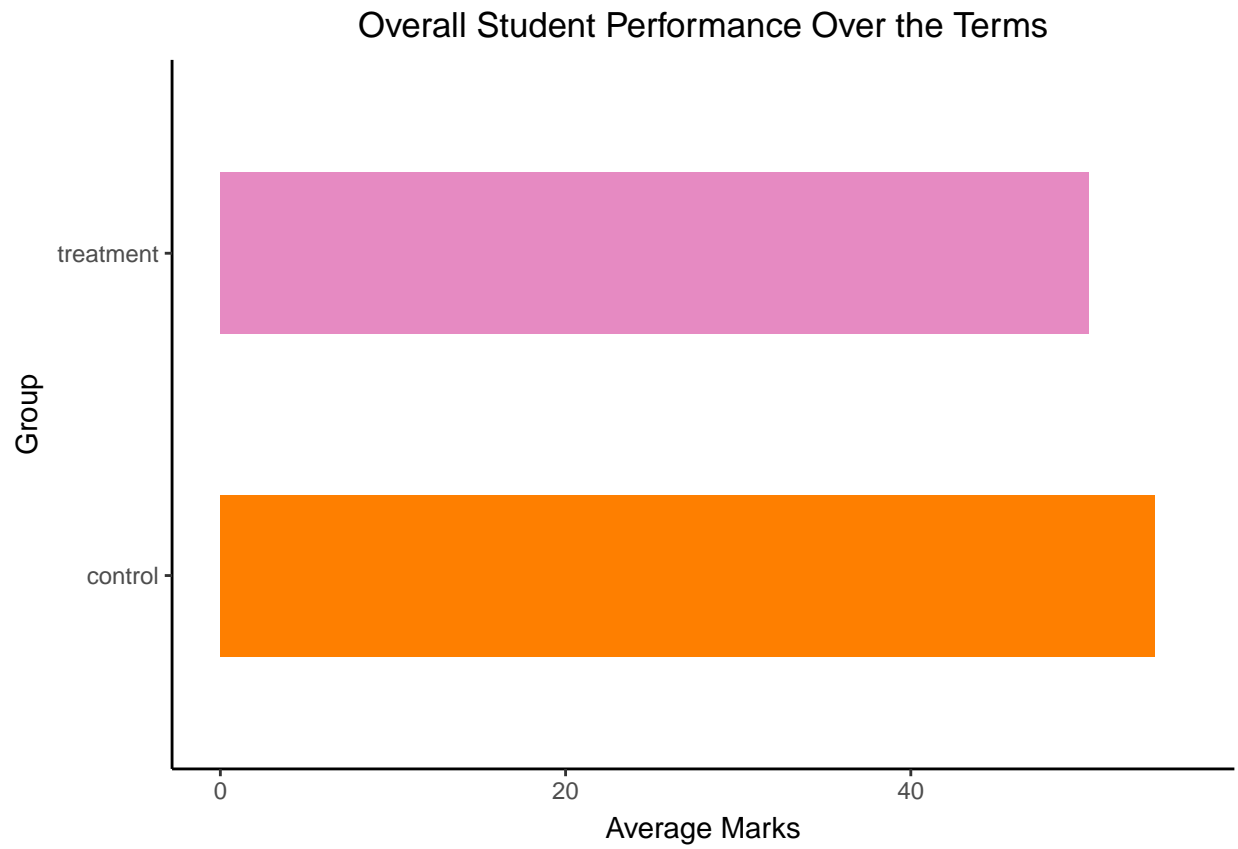


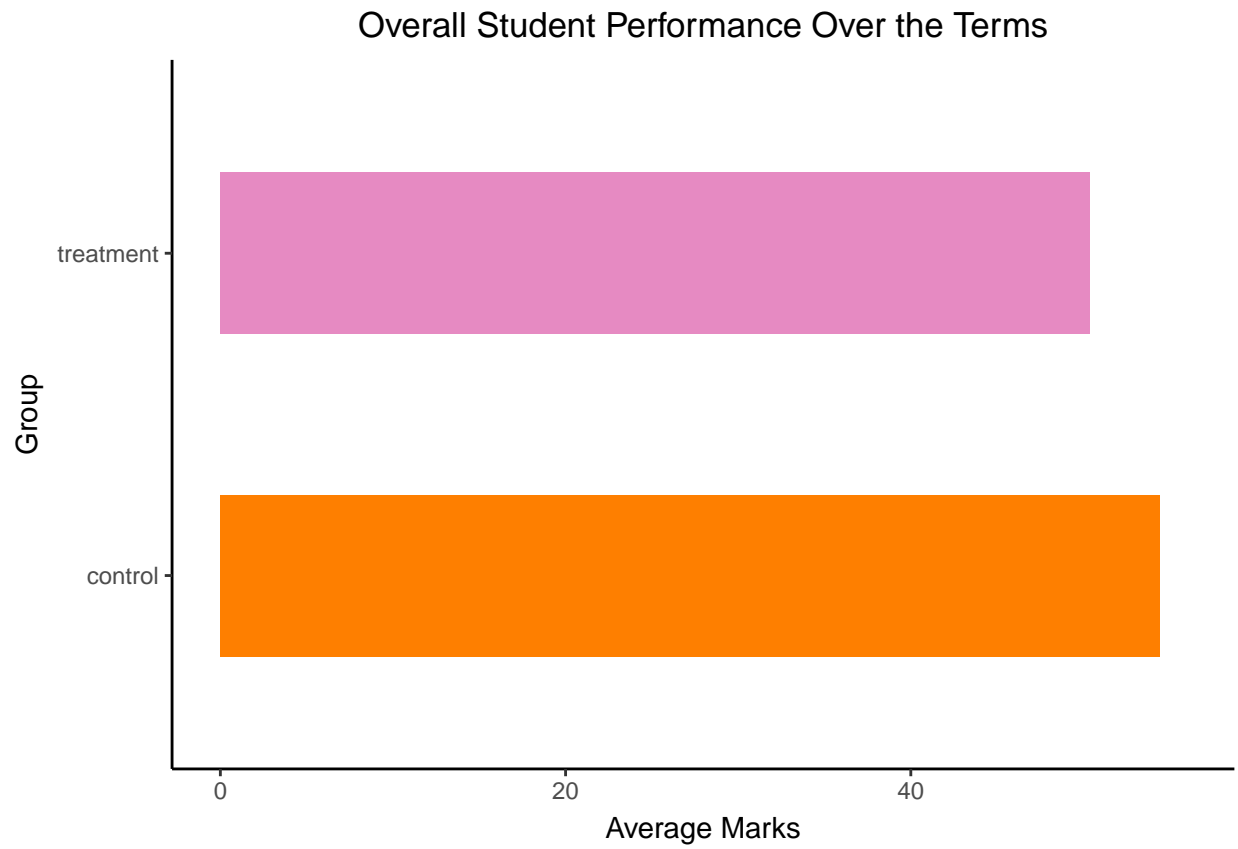


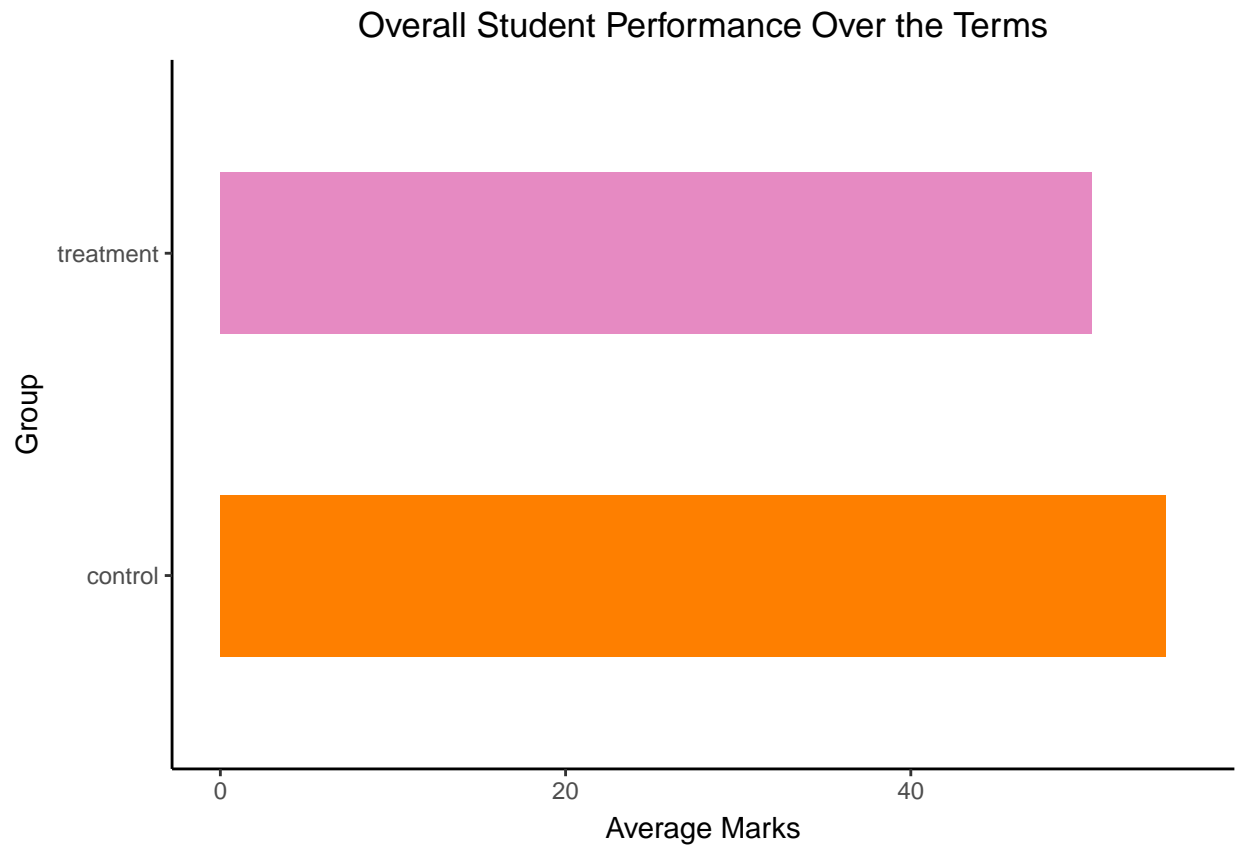


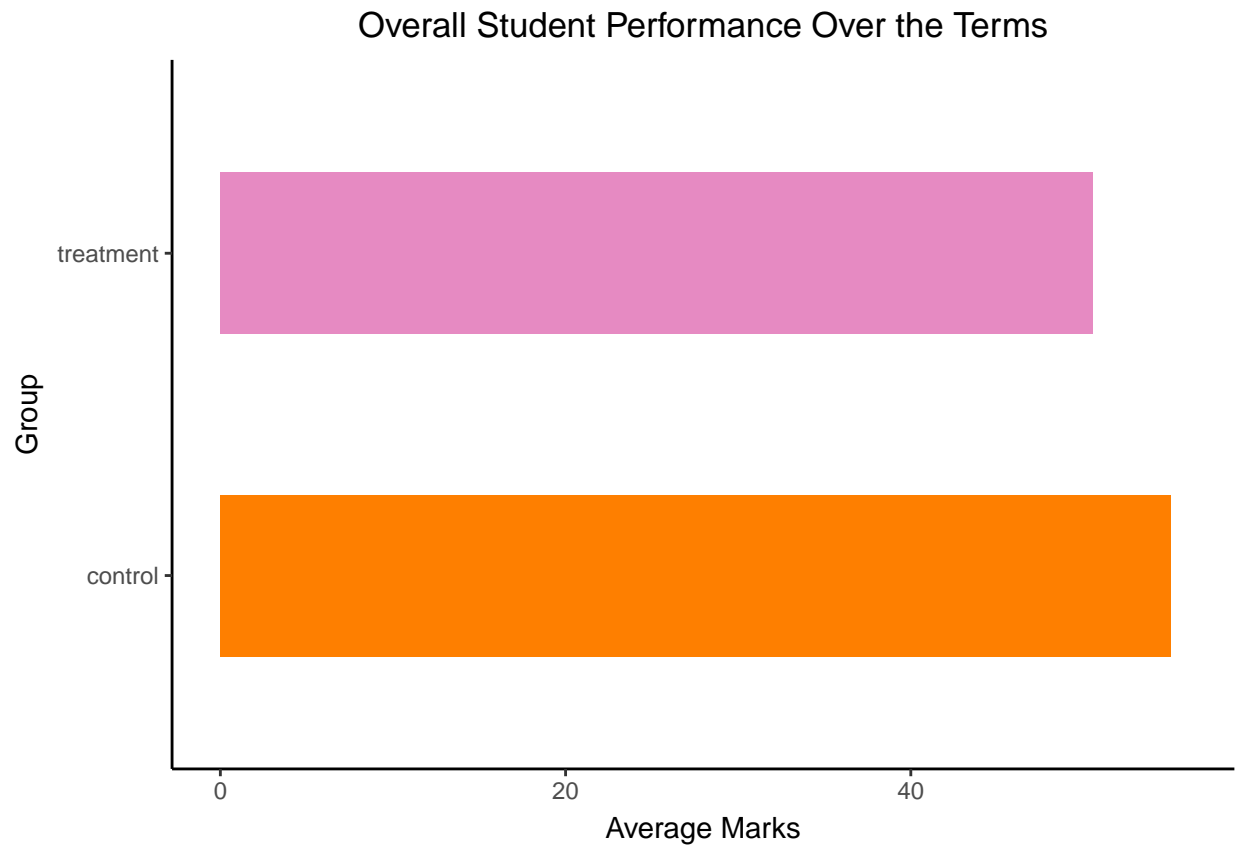


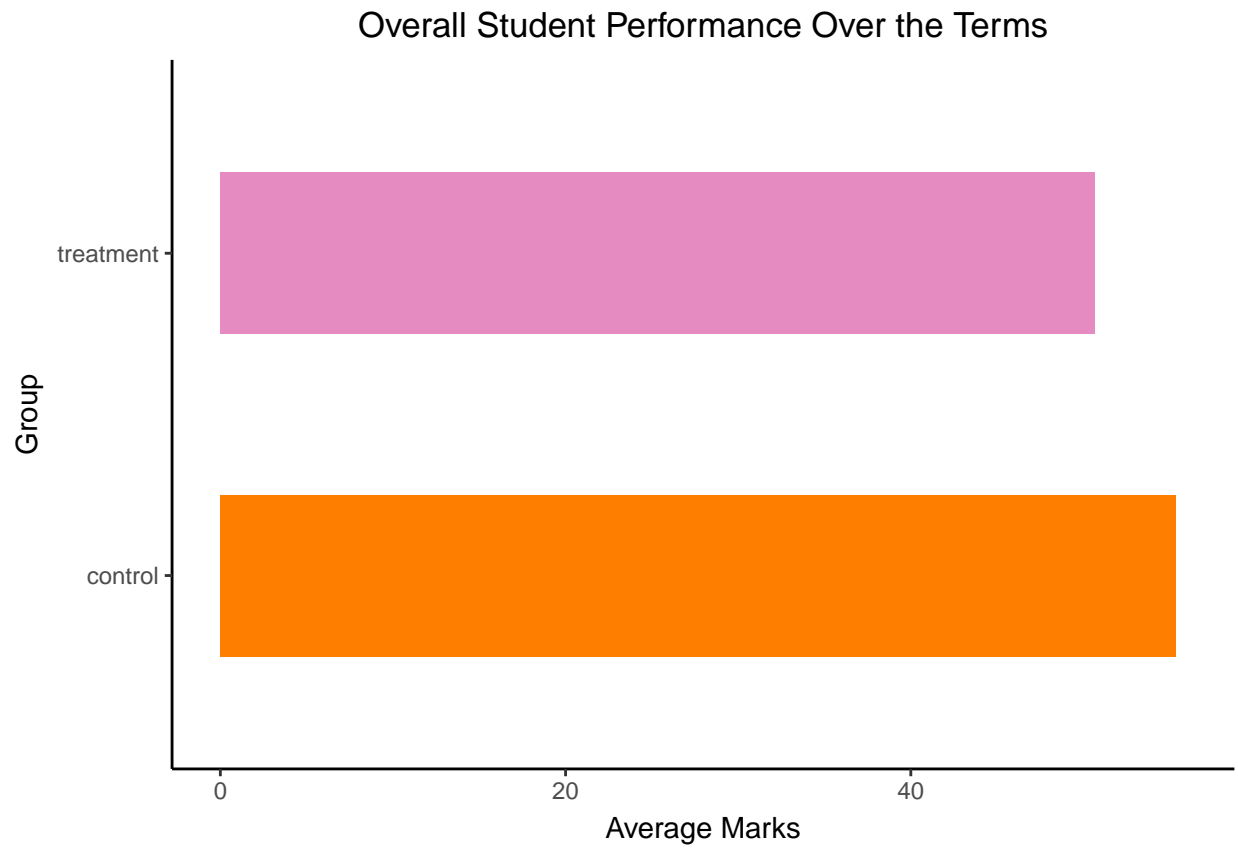


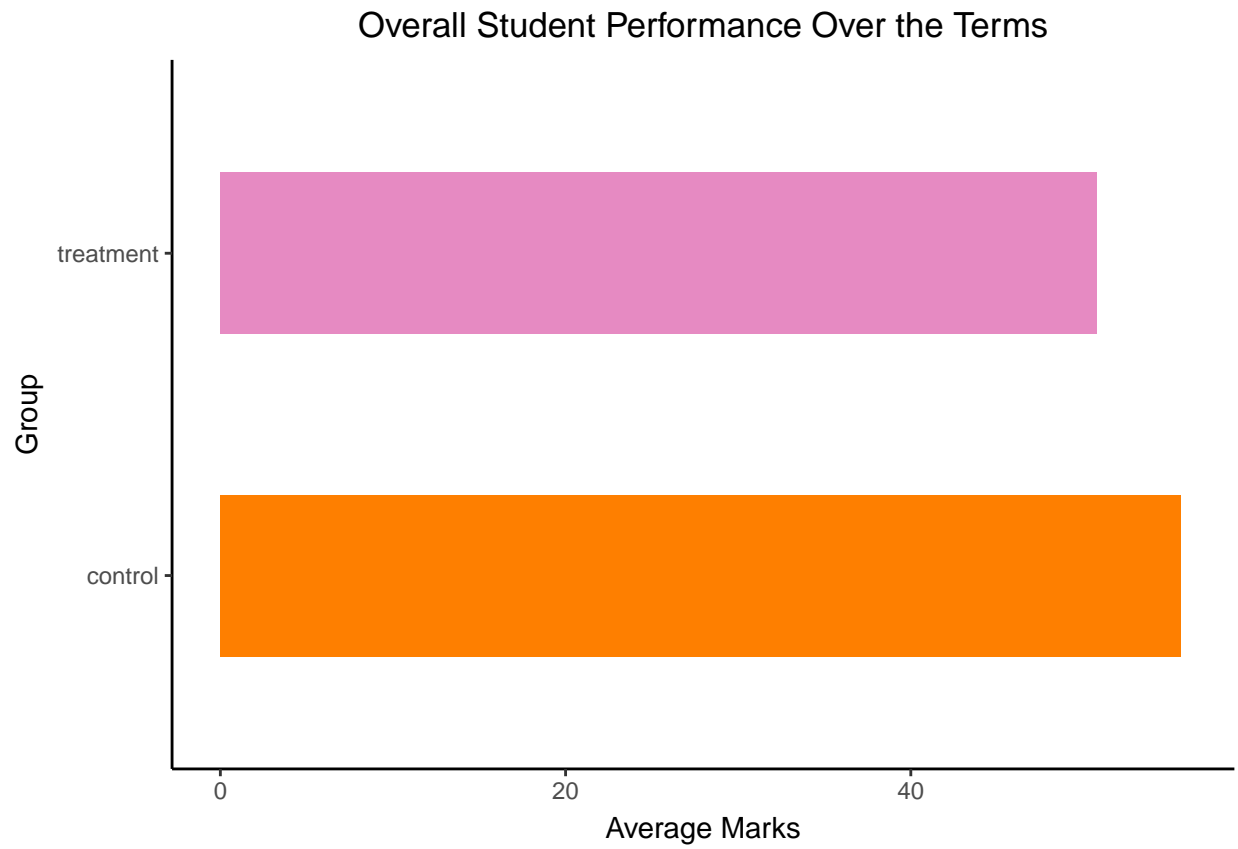


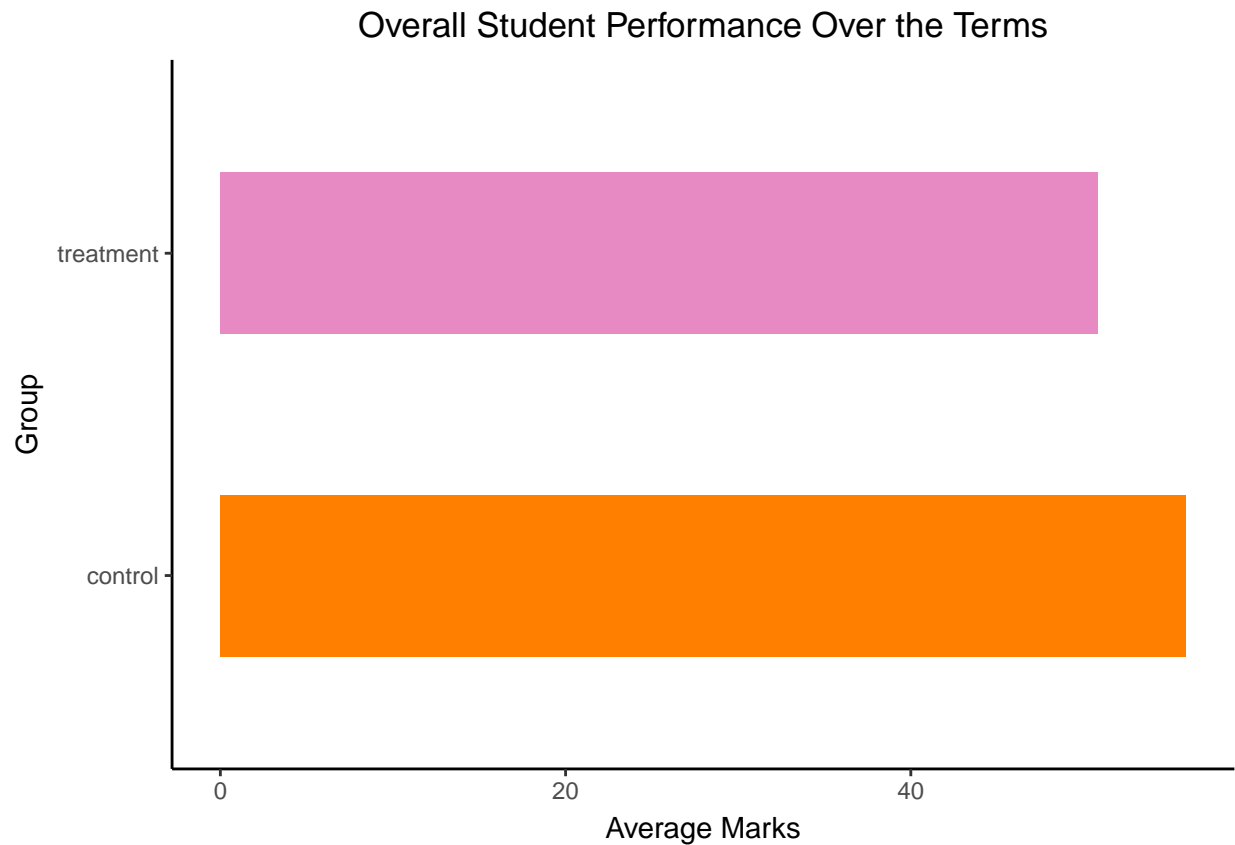








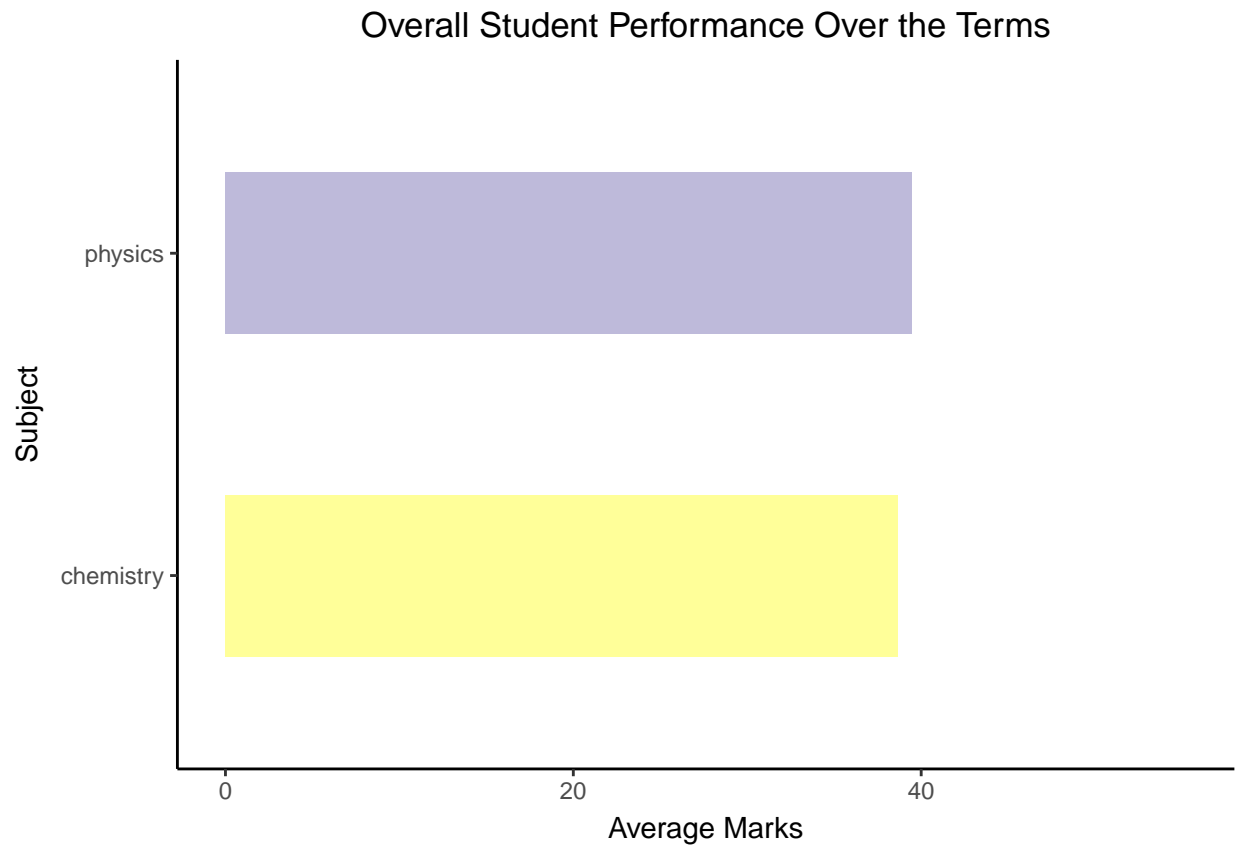


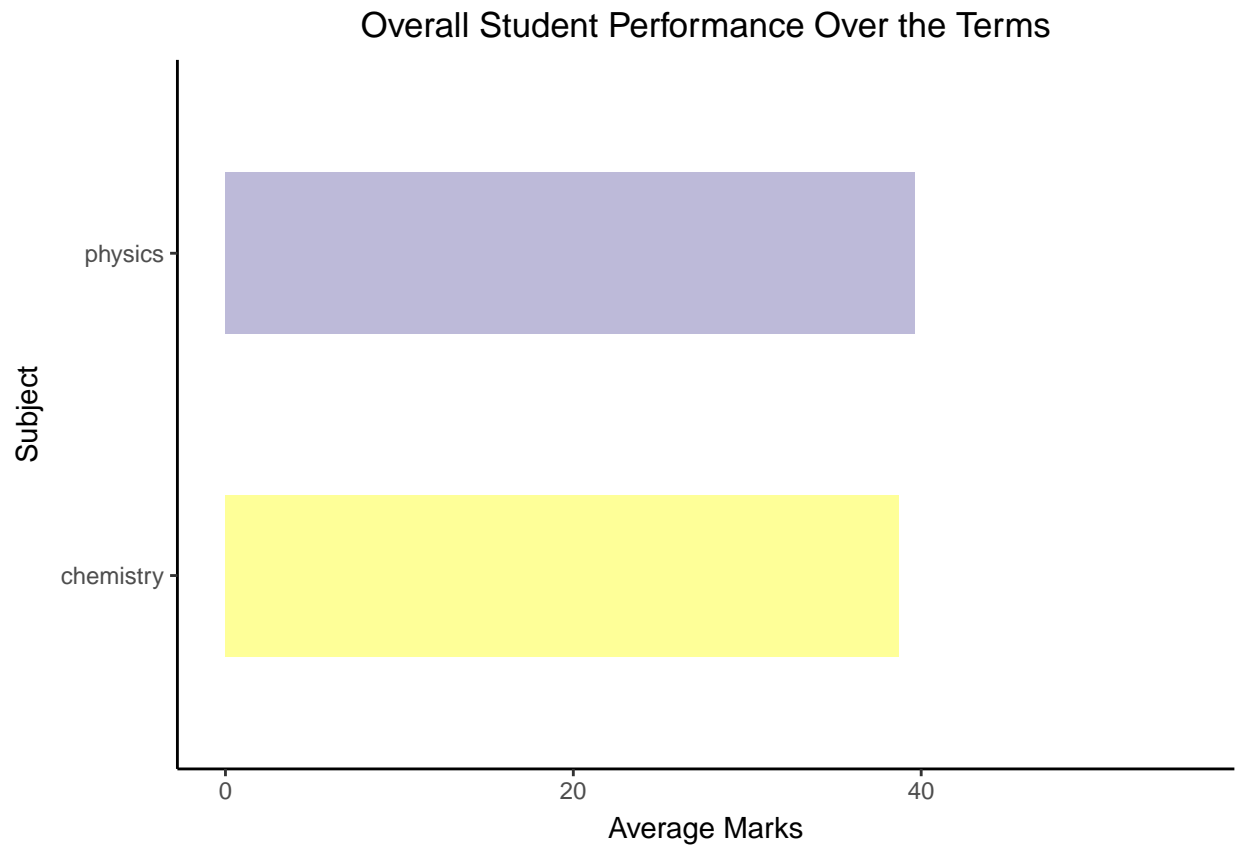


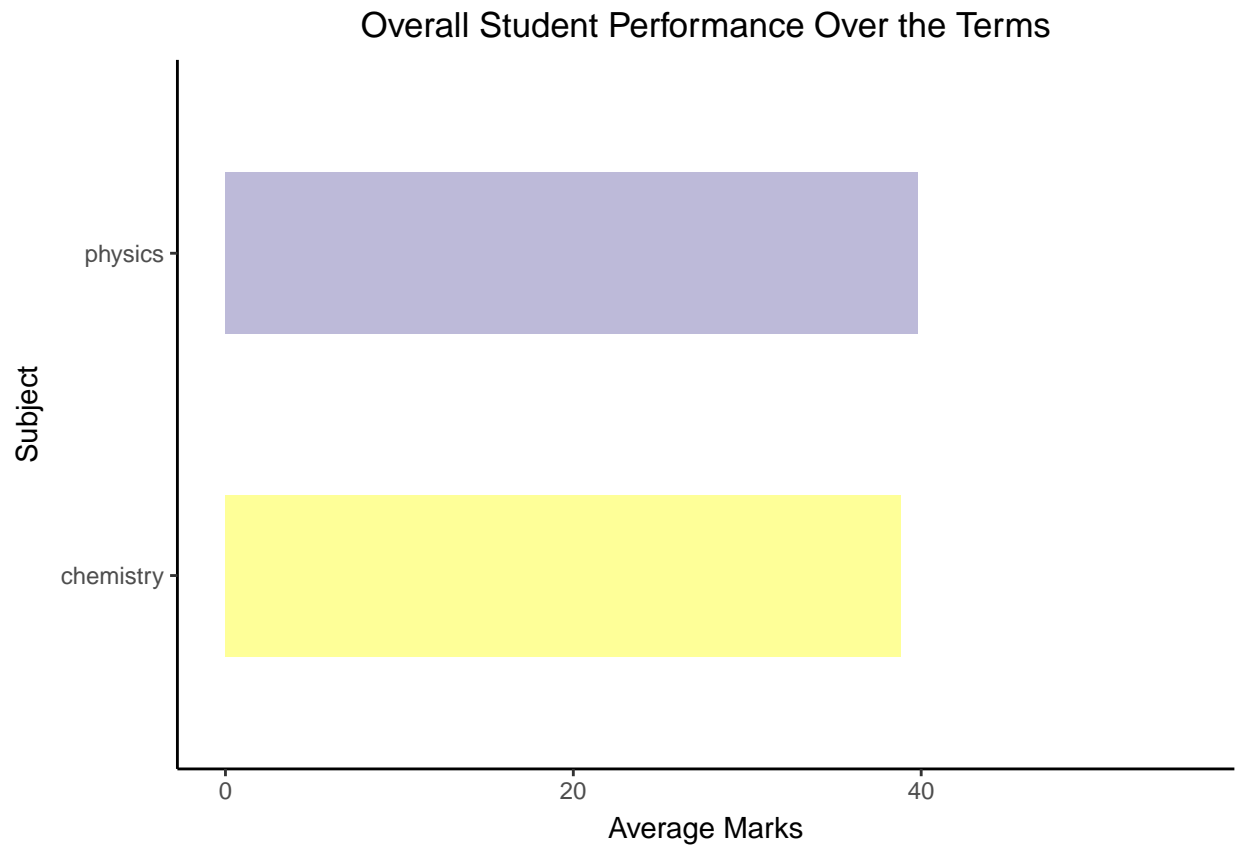
#plotting term-wise performance per subject

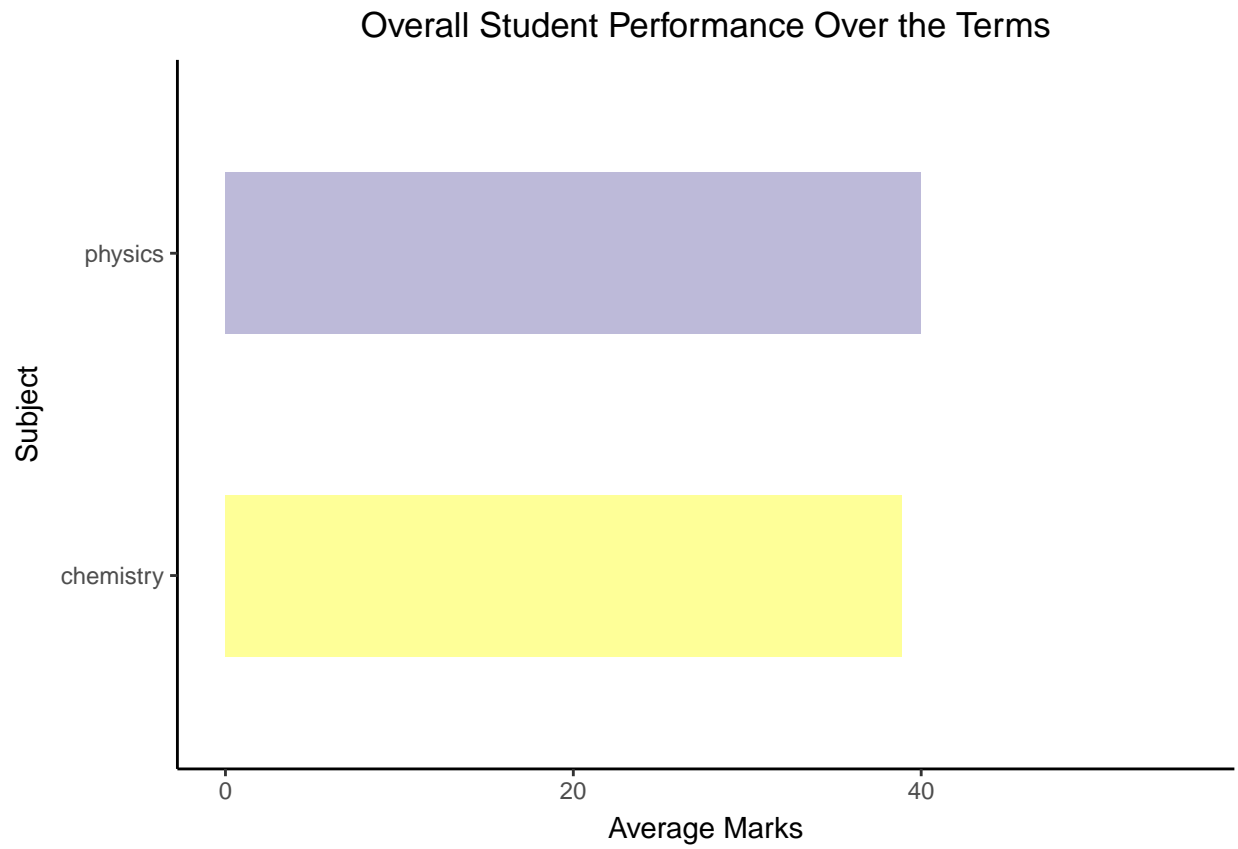
#treatment_plot

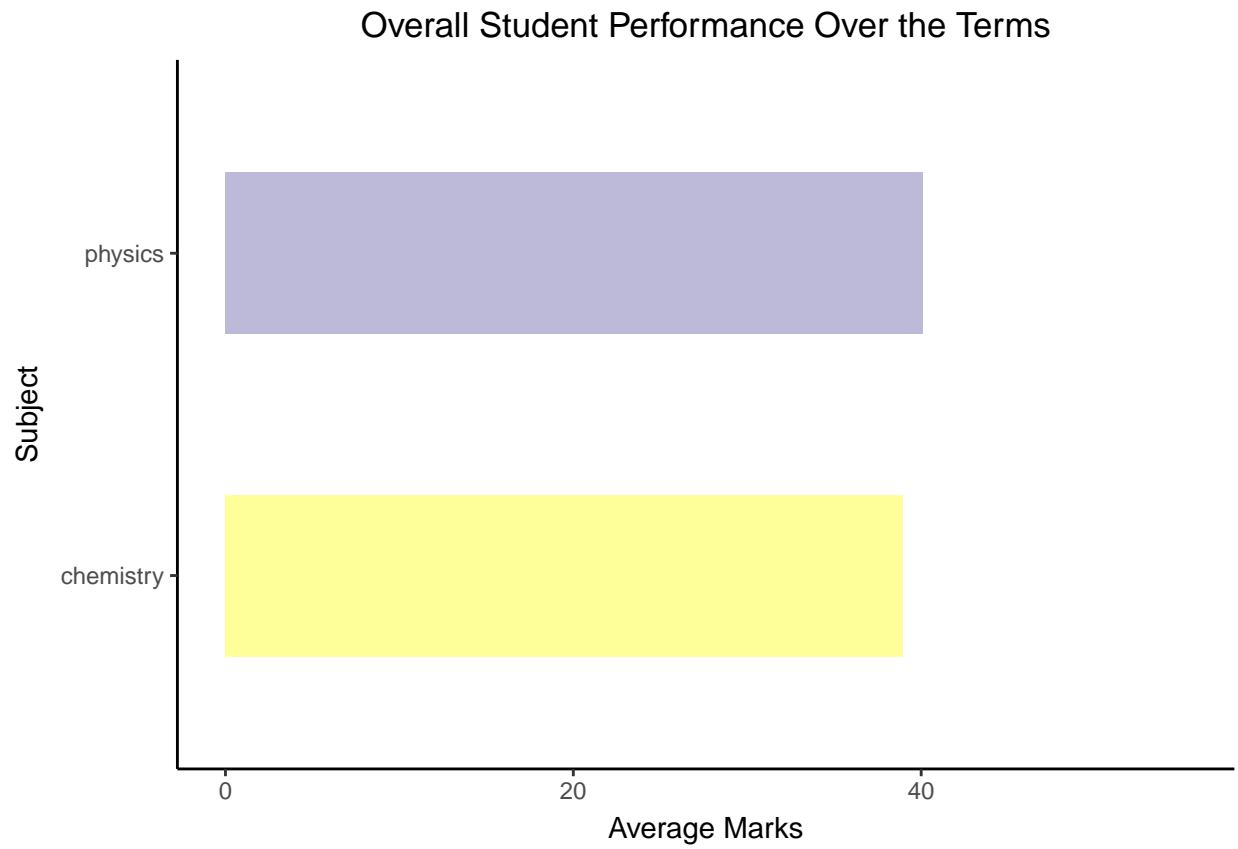
```
ggplot(average_marks_by_subject, aes(modules, Performance, fill = modules)) +  
  geom_bar(stat = "identity", width = 0.5) + theme_classic() + coord_flip() +  
  labs(title = 'Term: {frame_time}', x = 'Subject', y = 'Average Marks') + transition_time(term) +  
  ggtitle("Overall Student Performance Over the Terms") +  
  theme(legend.position = "none", plot.title = element_text(hjust = 0.5)) +  
  scale_fill_manual(values = sample(col_vector, n))
```



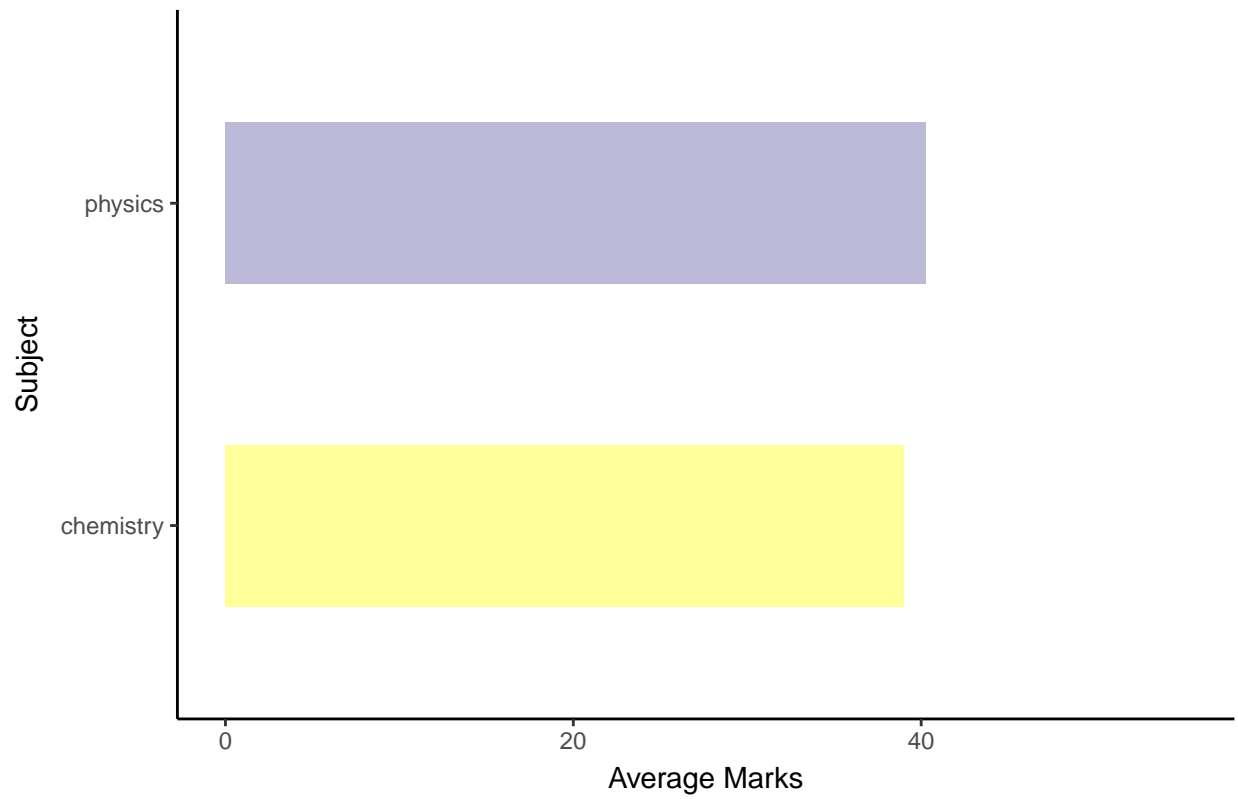




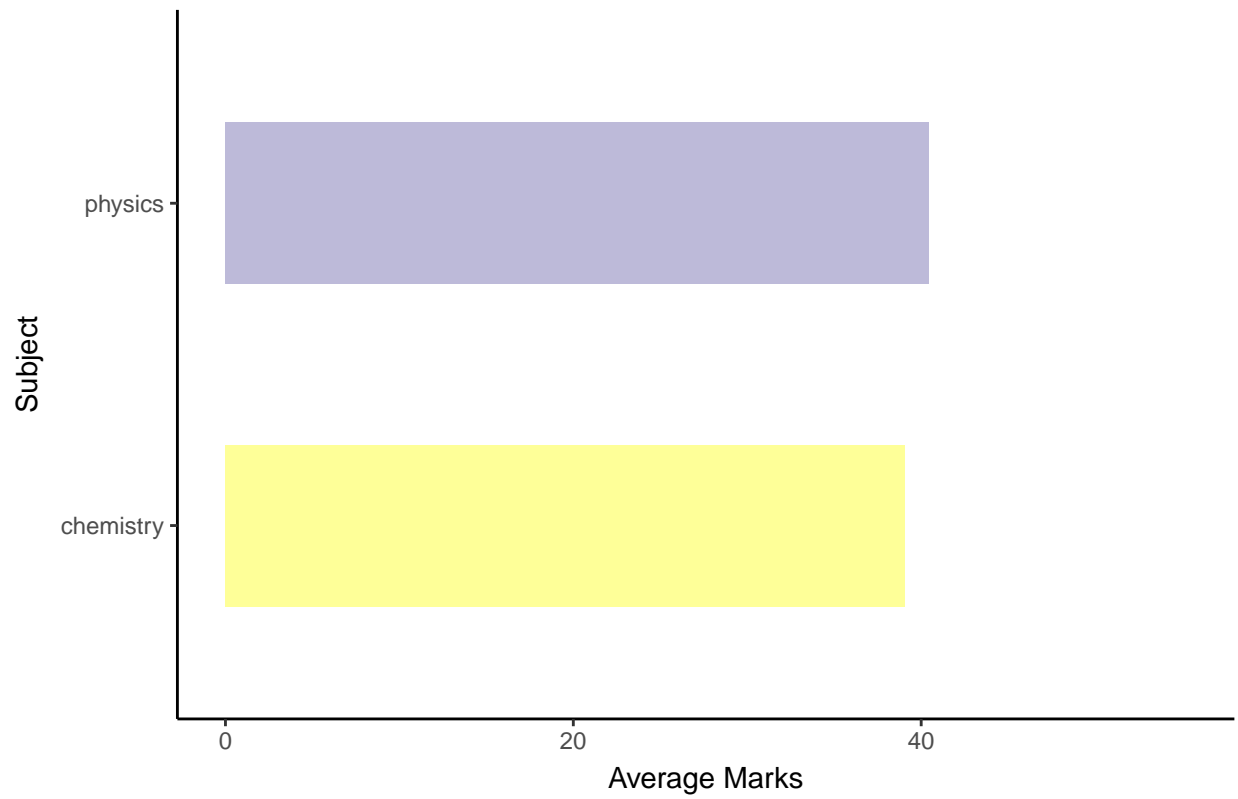


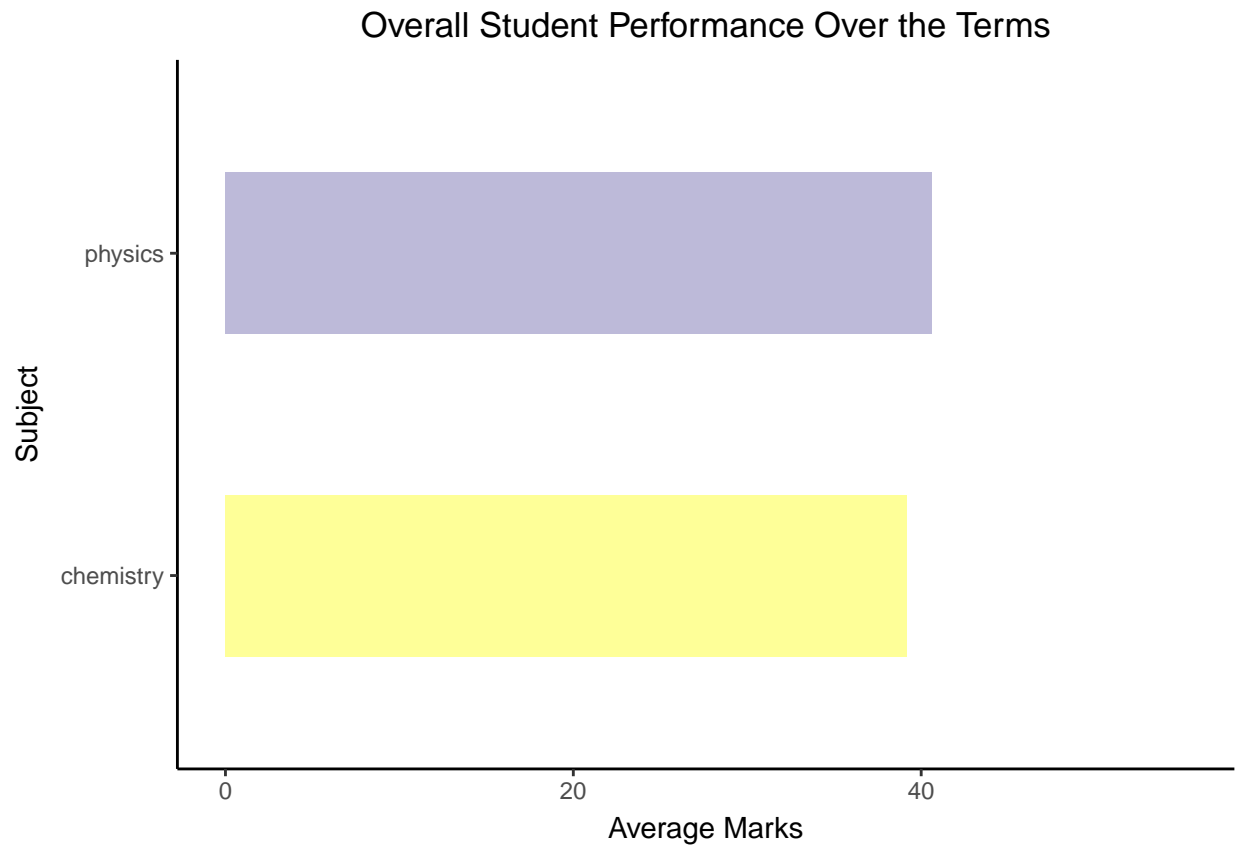


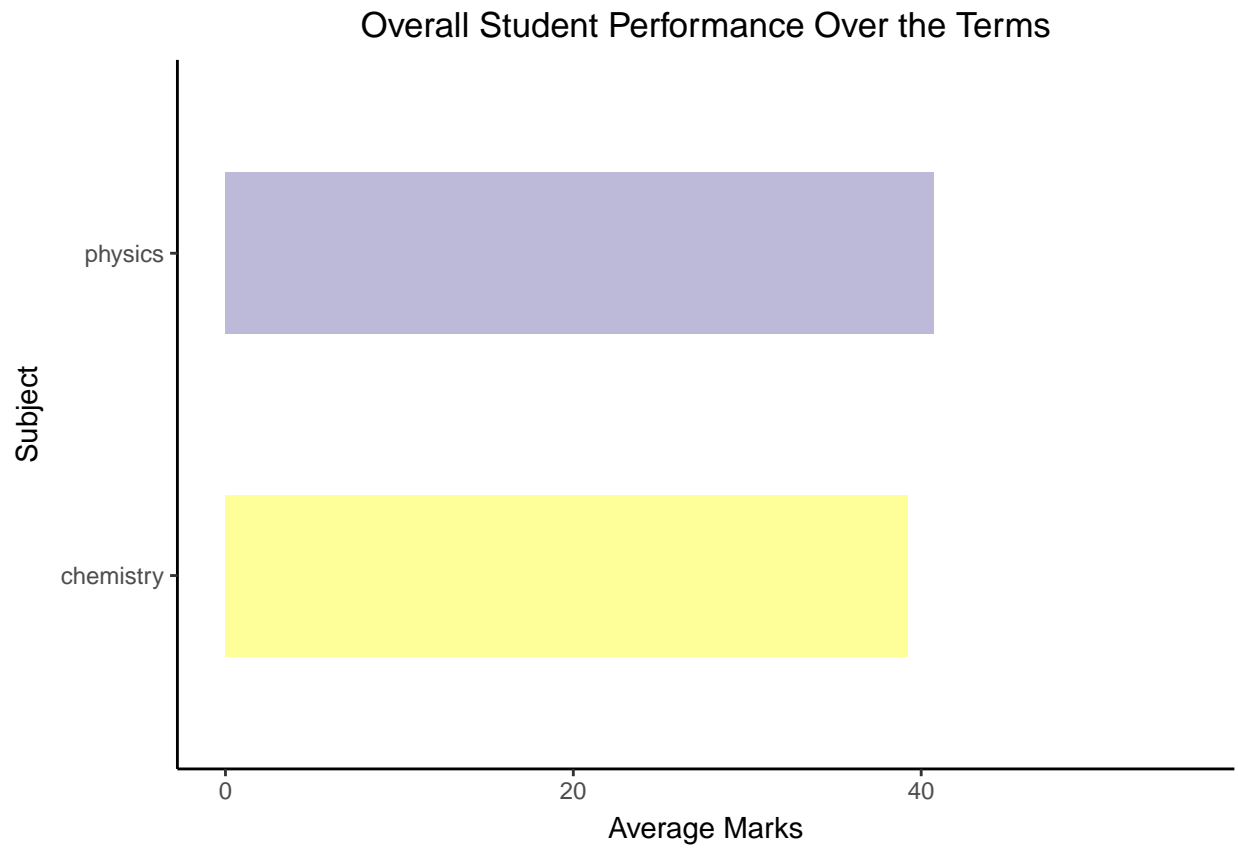
Overall Student Performance Over the Terms

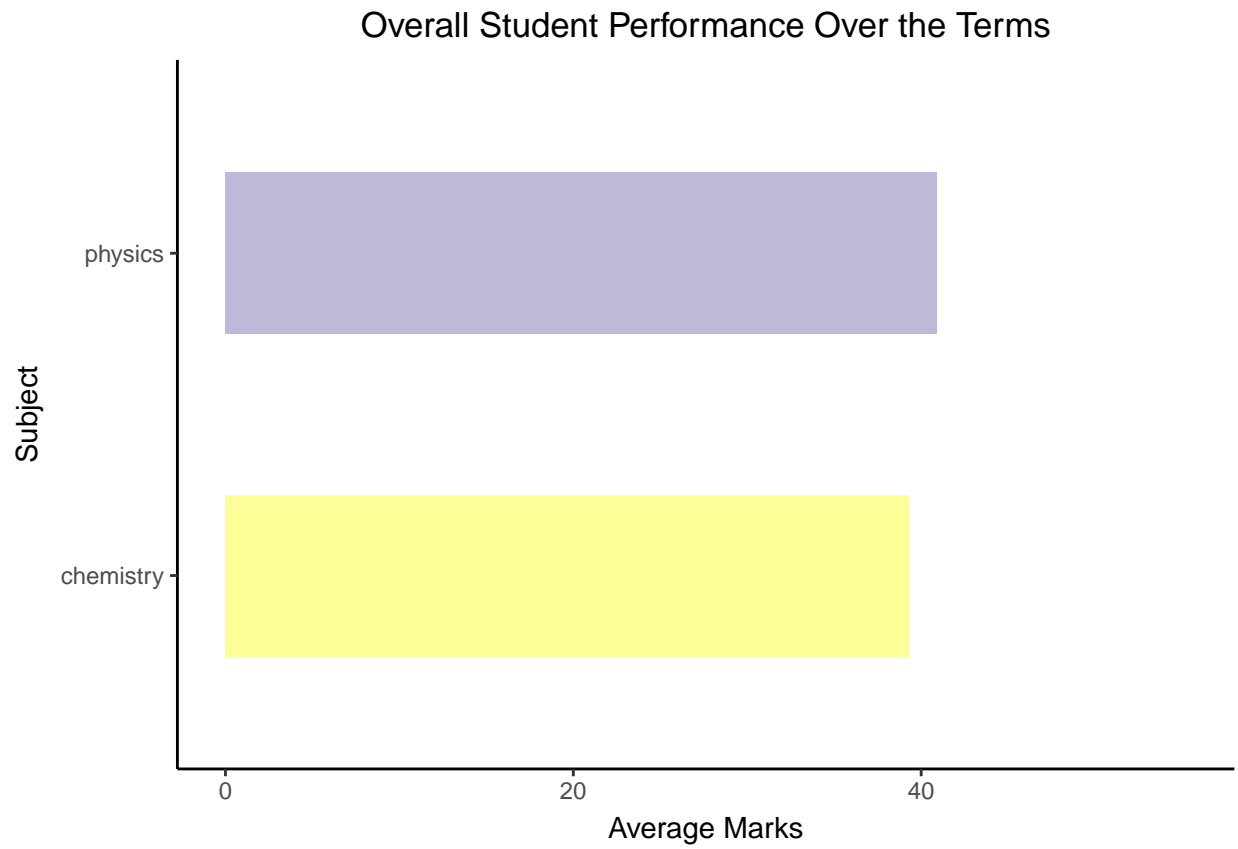


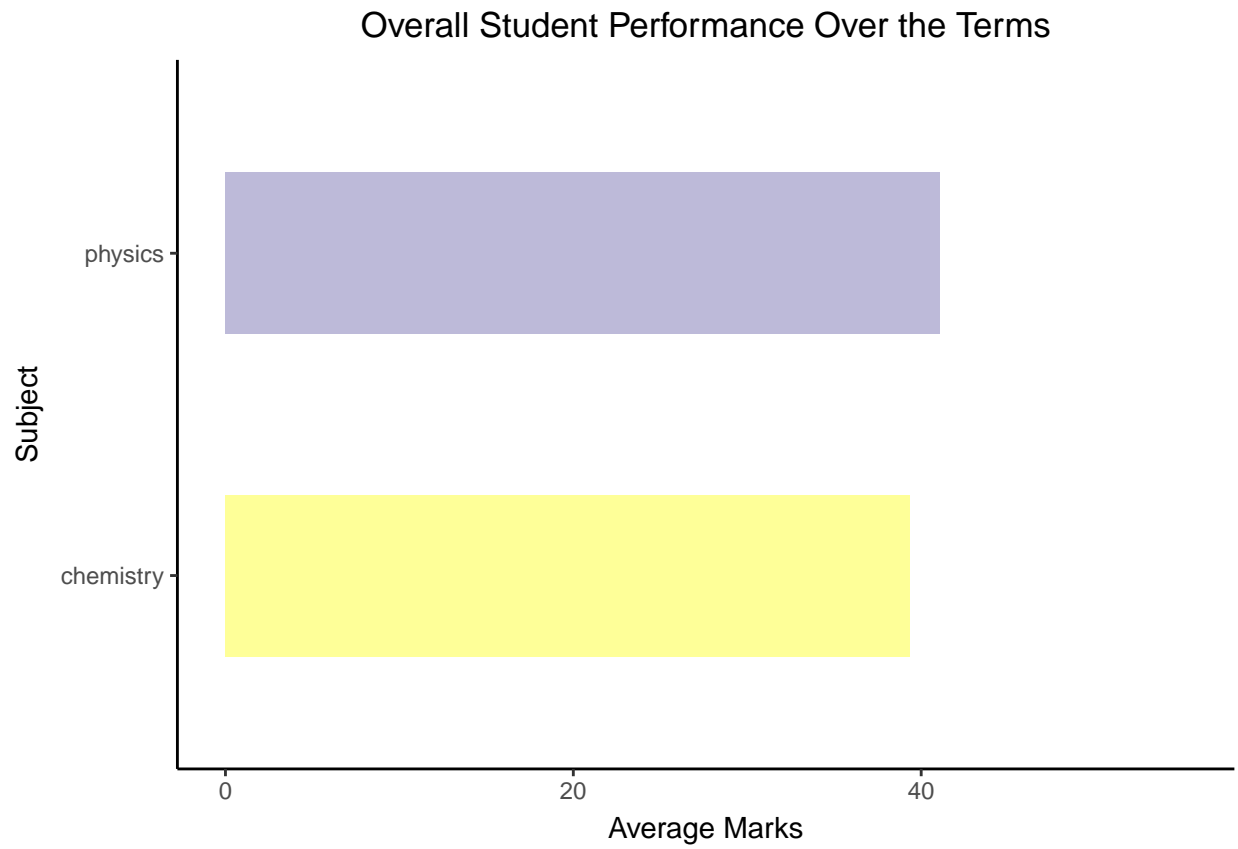
Overall Student Performance Over the Terms

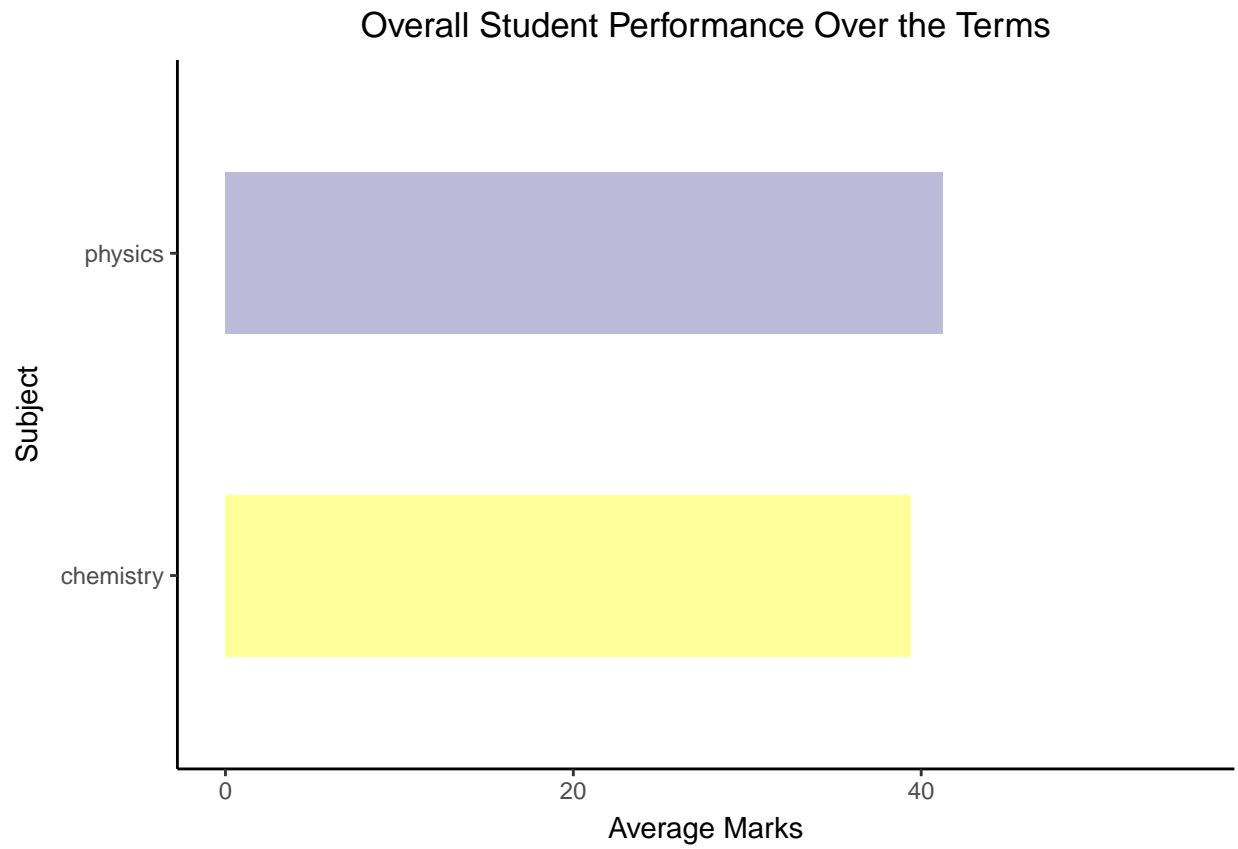




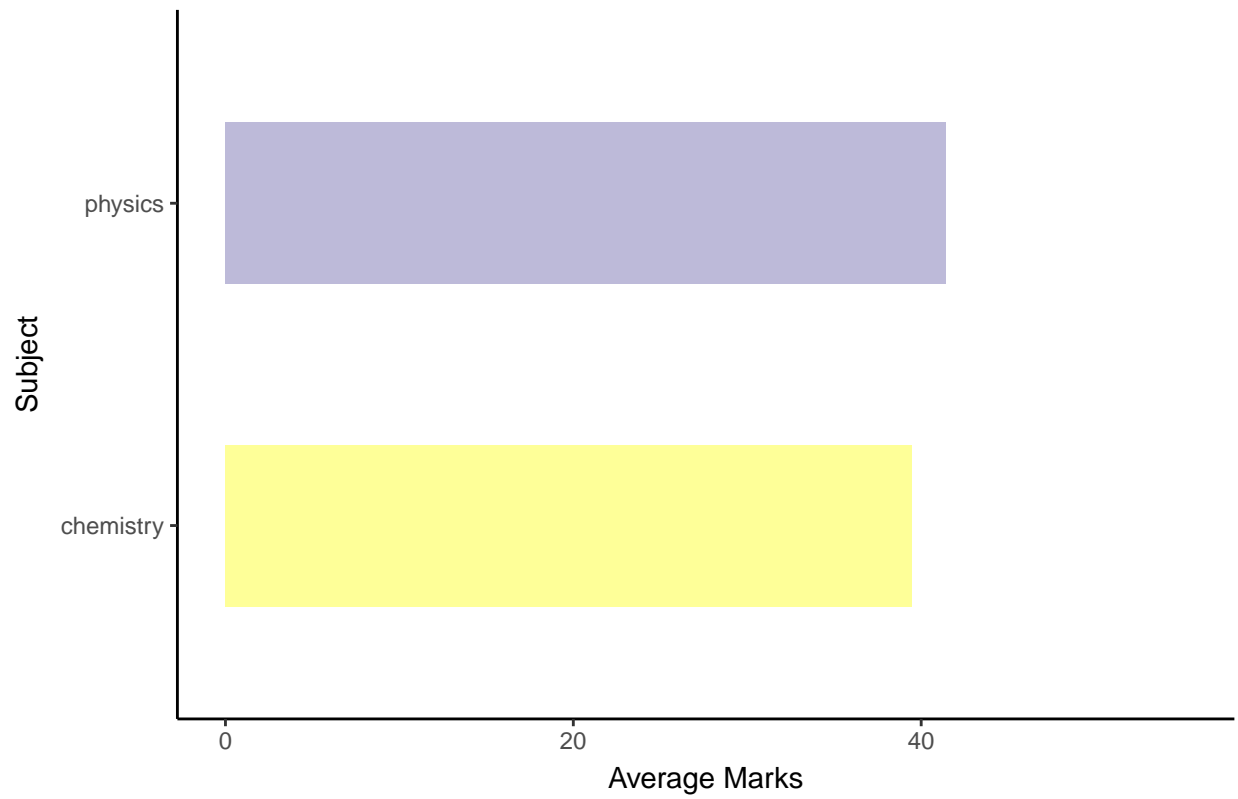


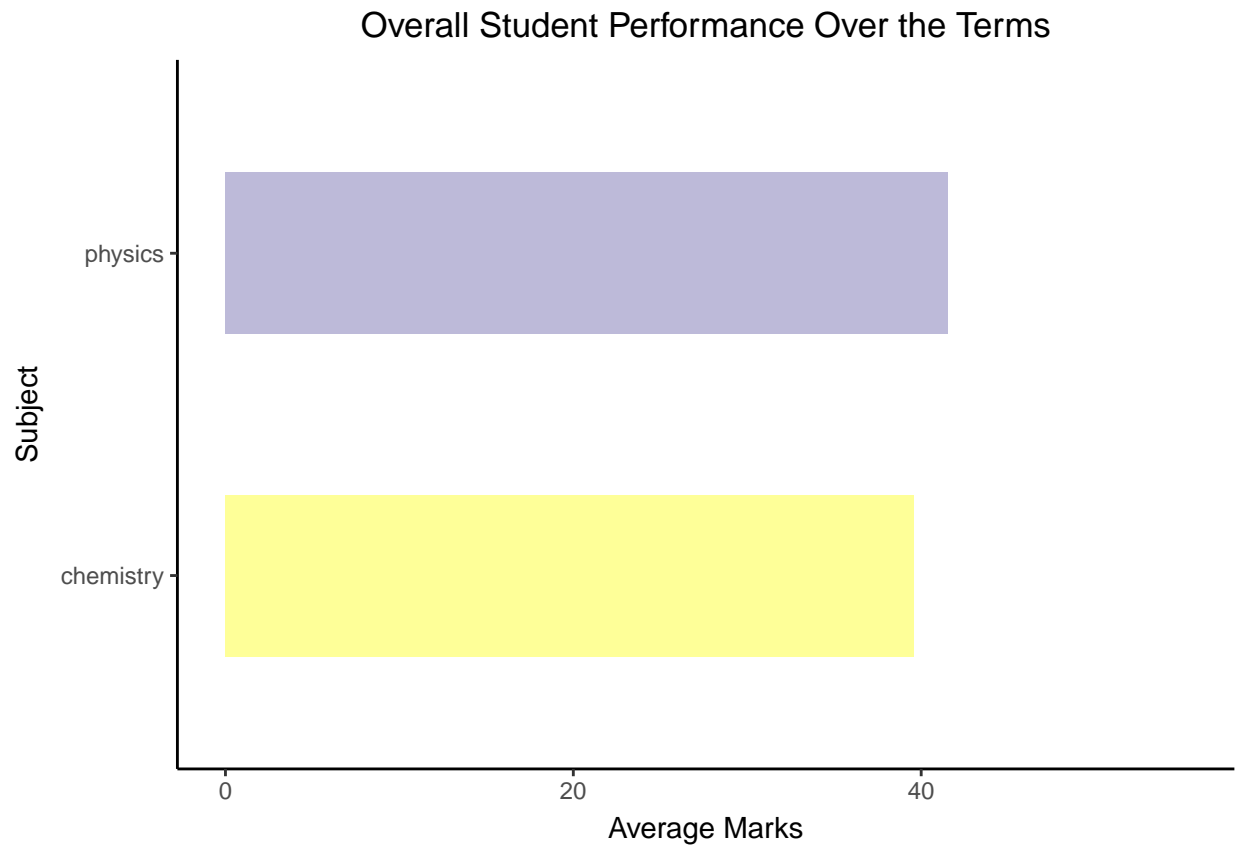




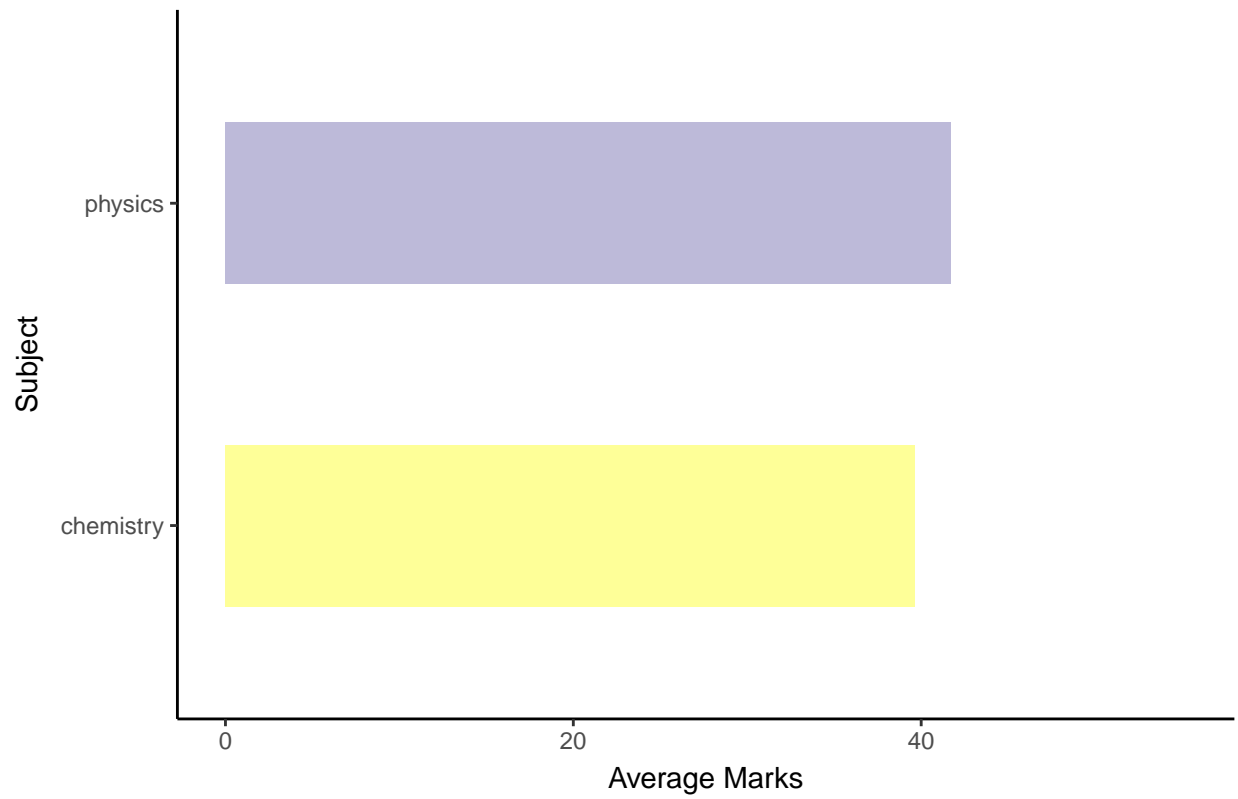


Overall Student Performance Over the Terms

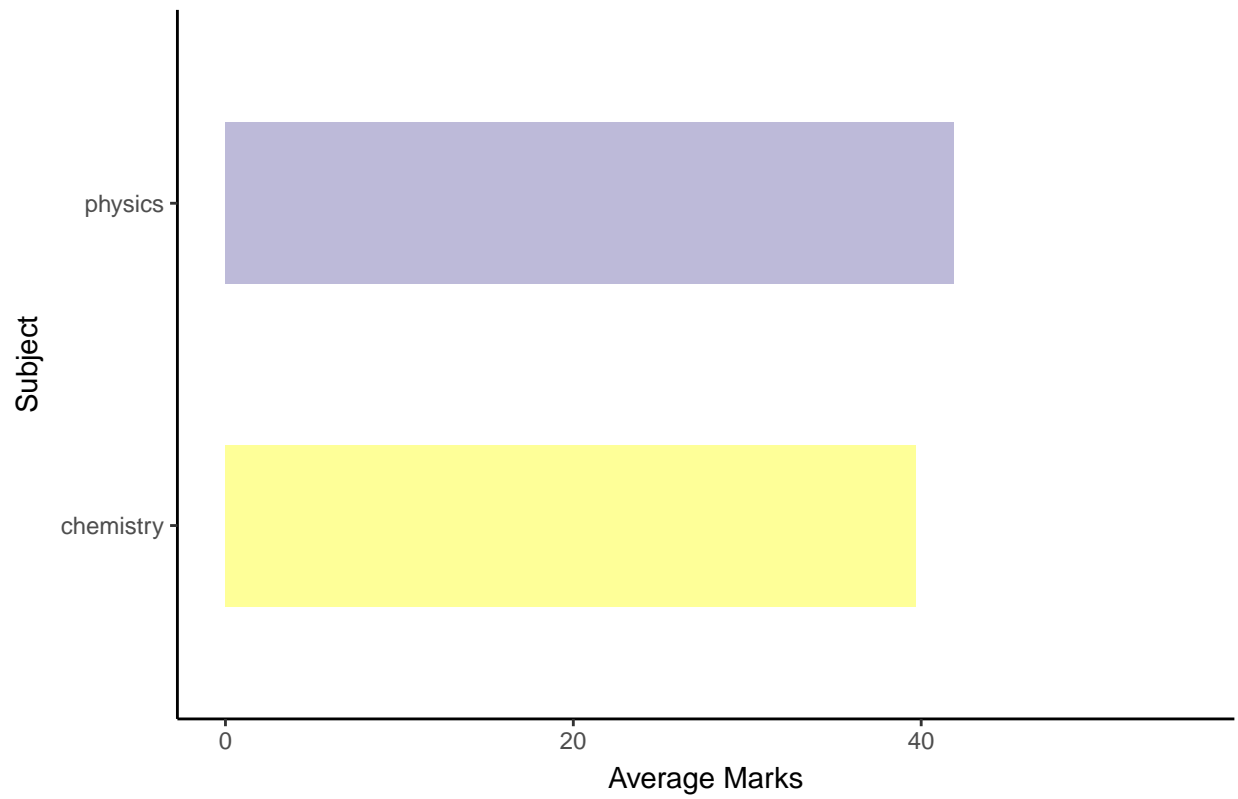


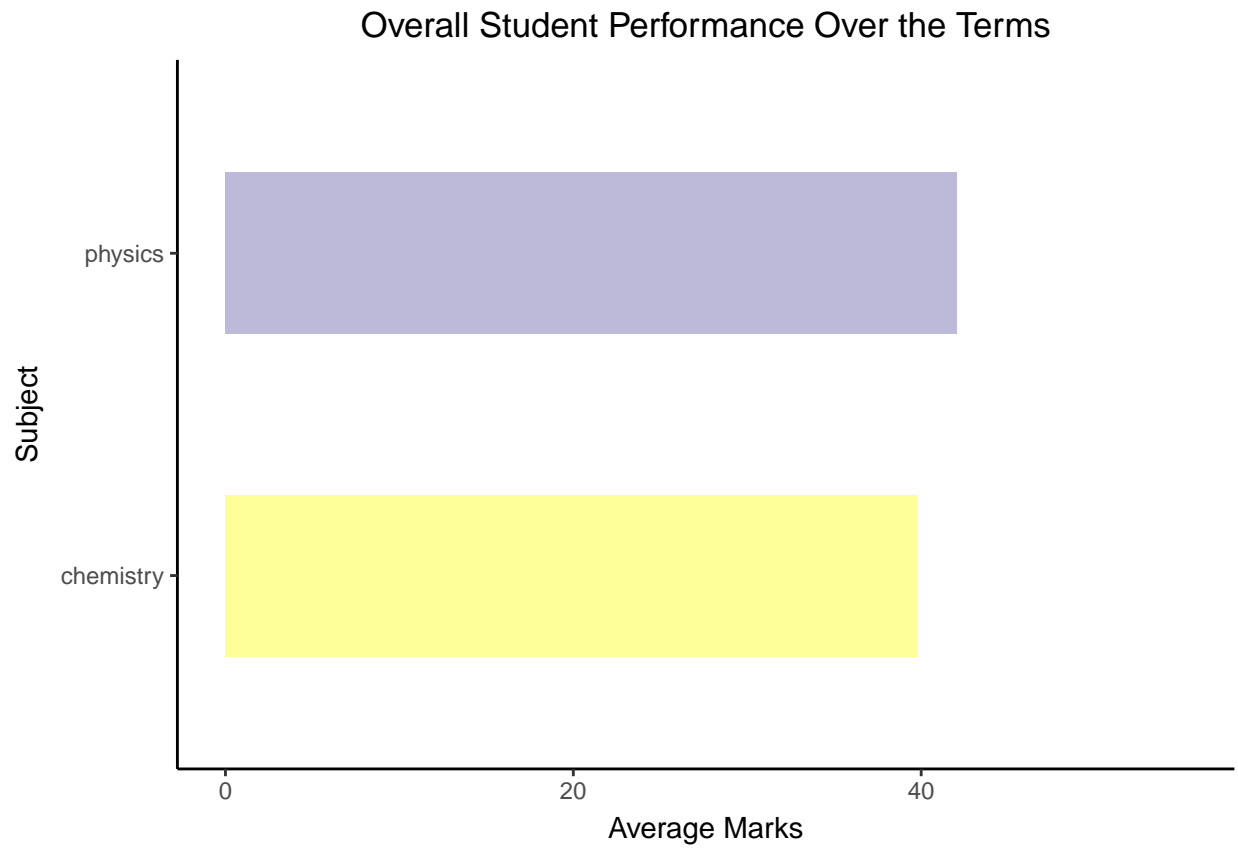


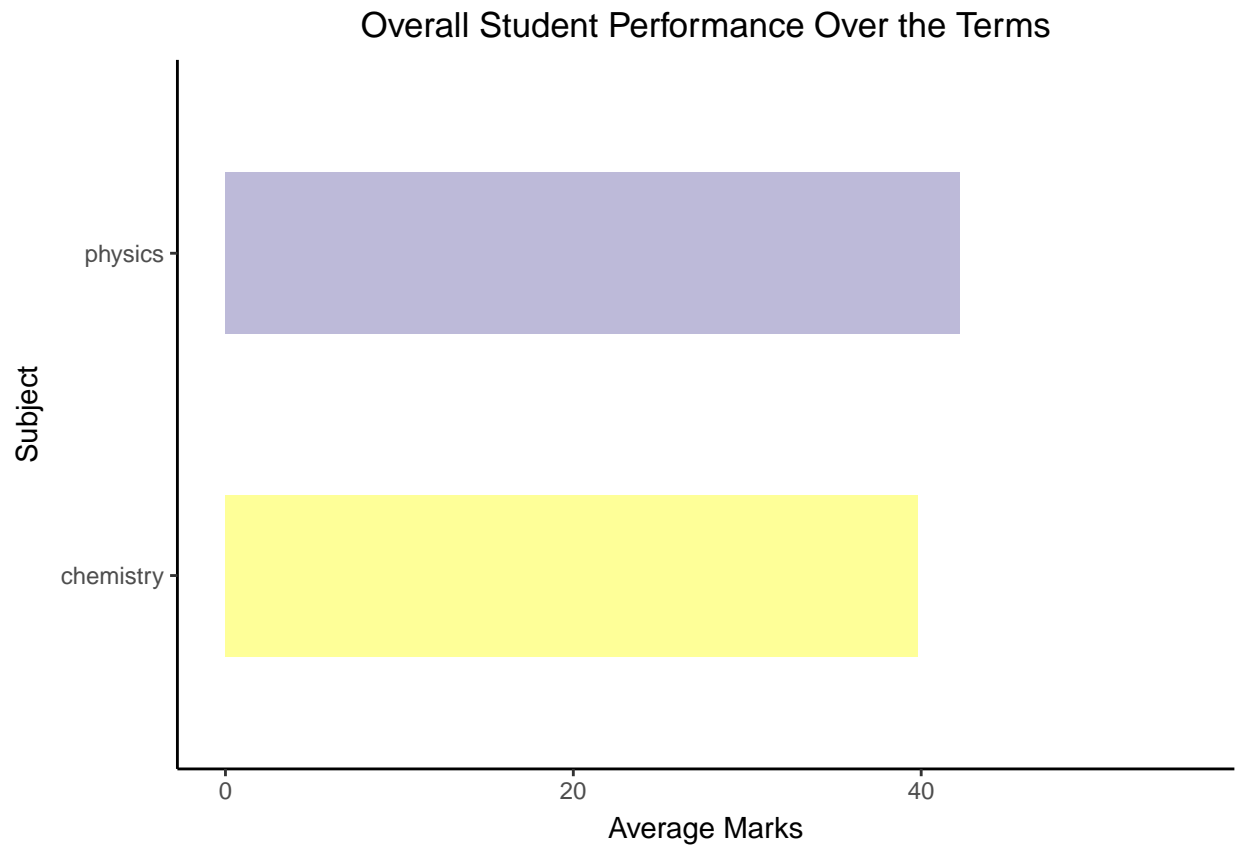
Overall Student Performance Over the Terms



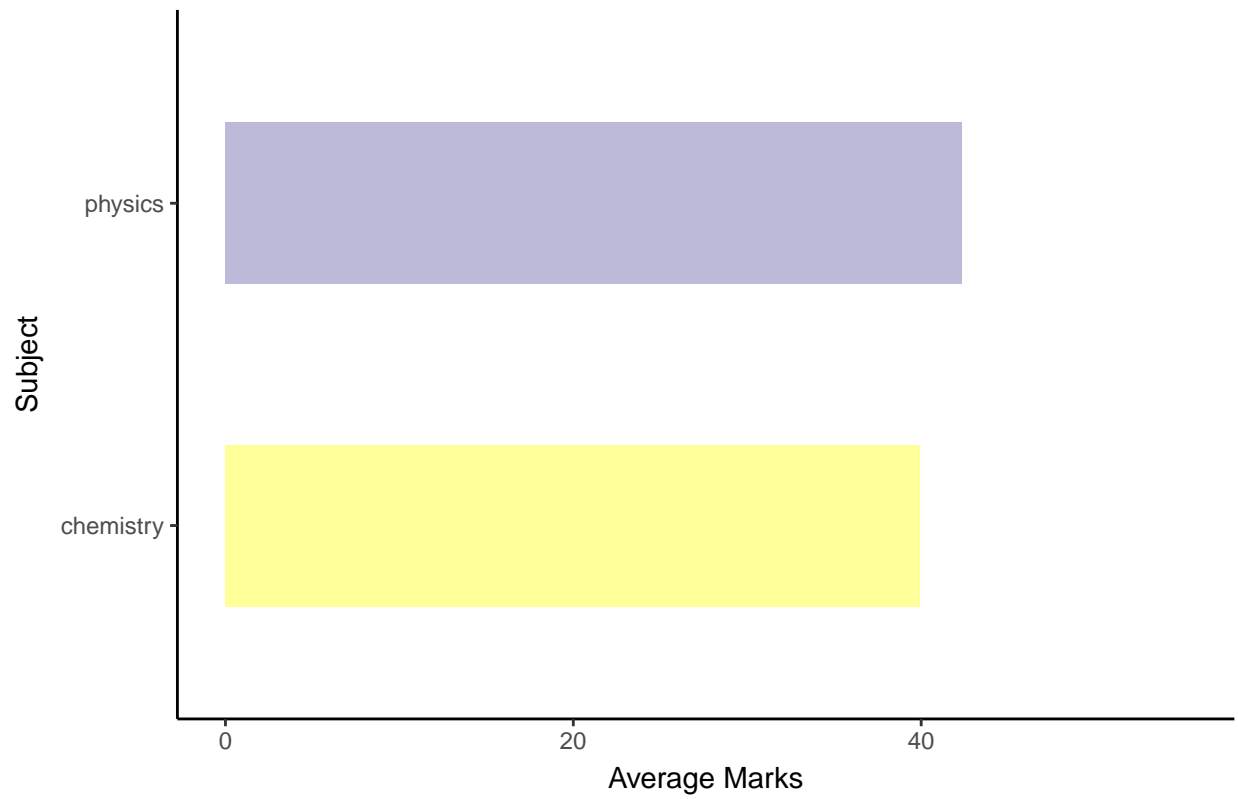
Overall Student Performance Over the Terms



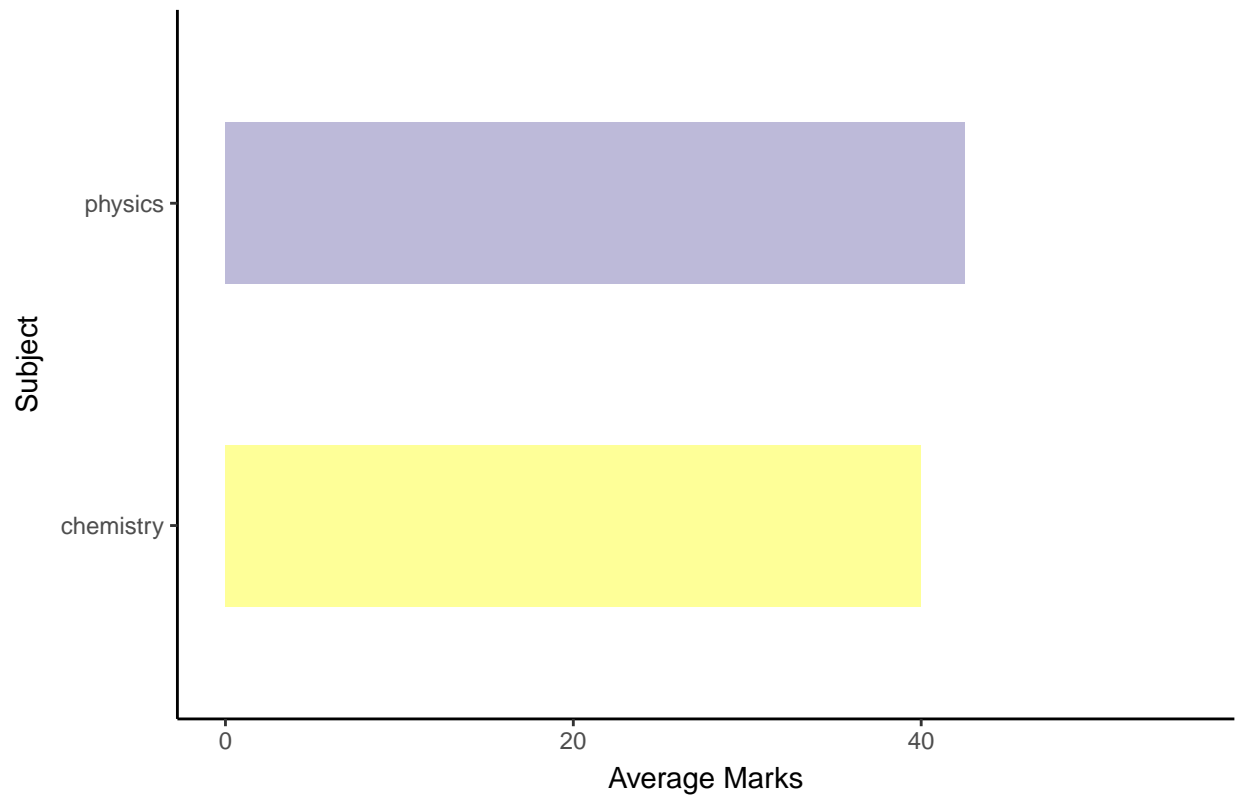




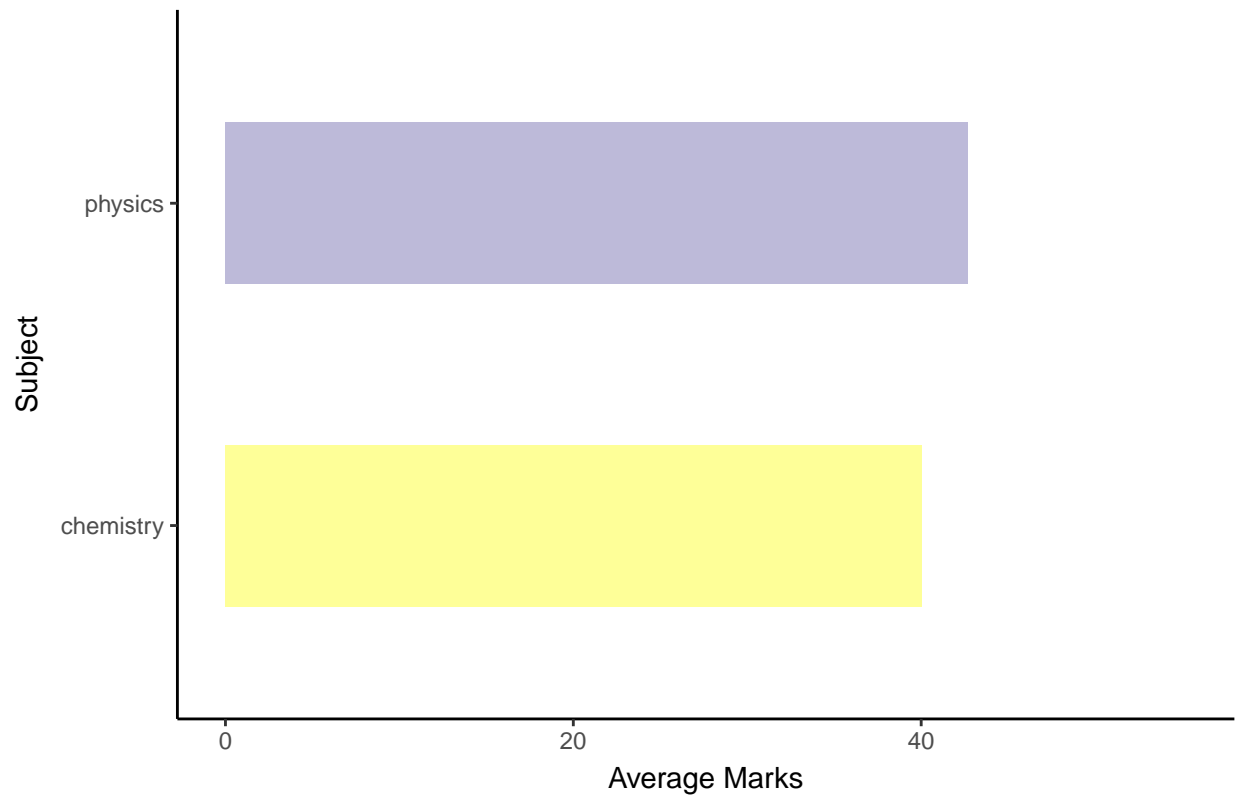
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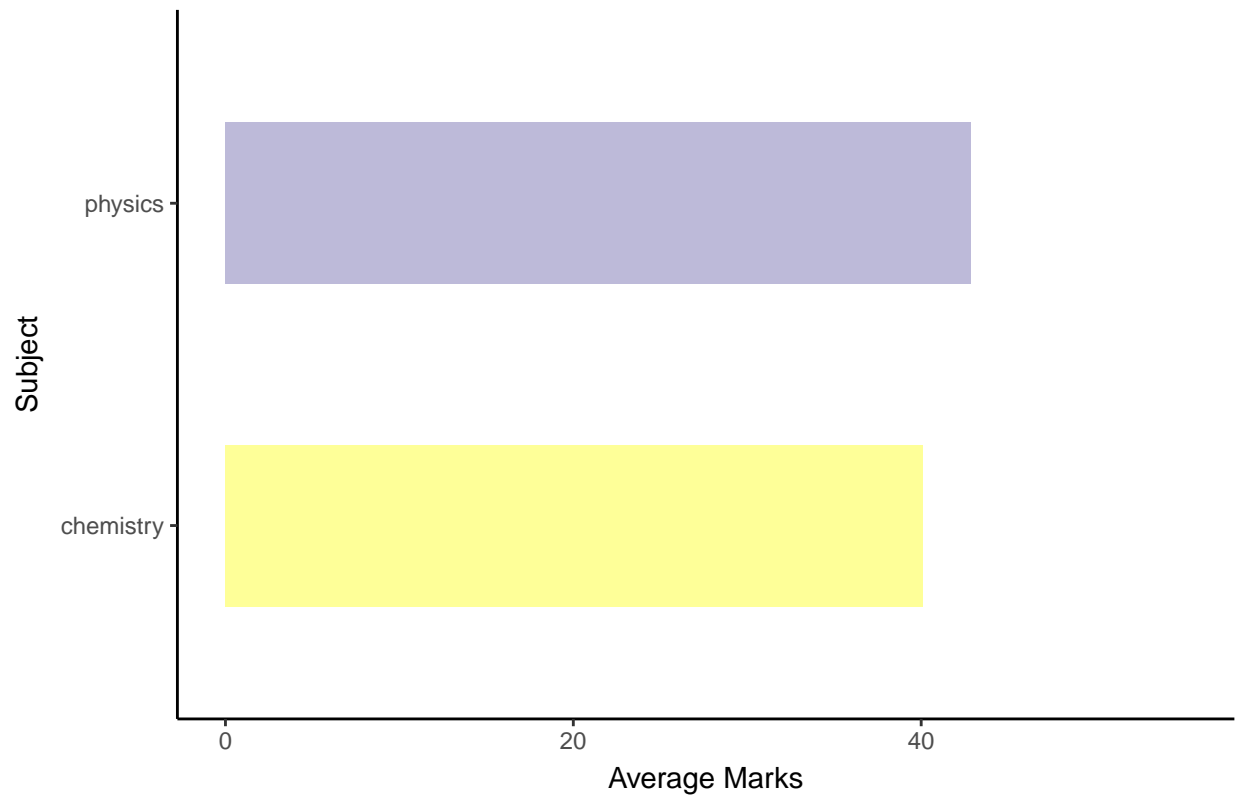
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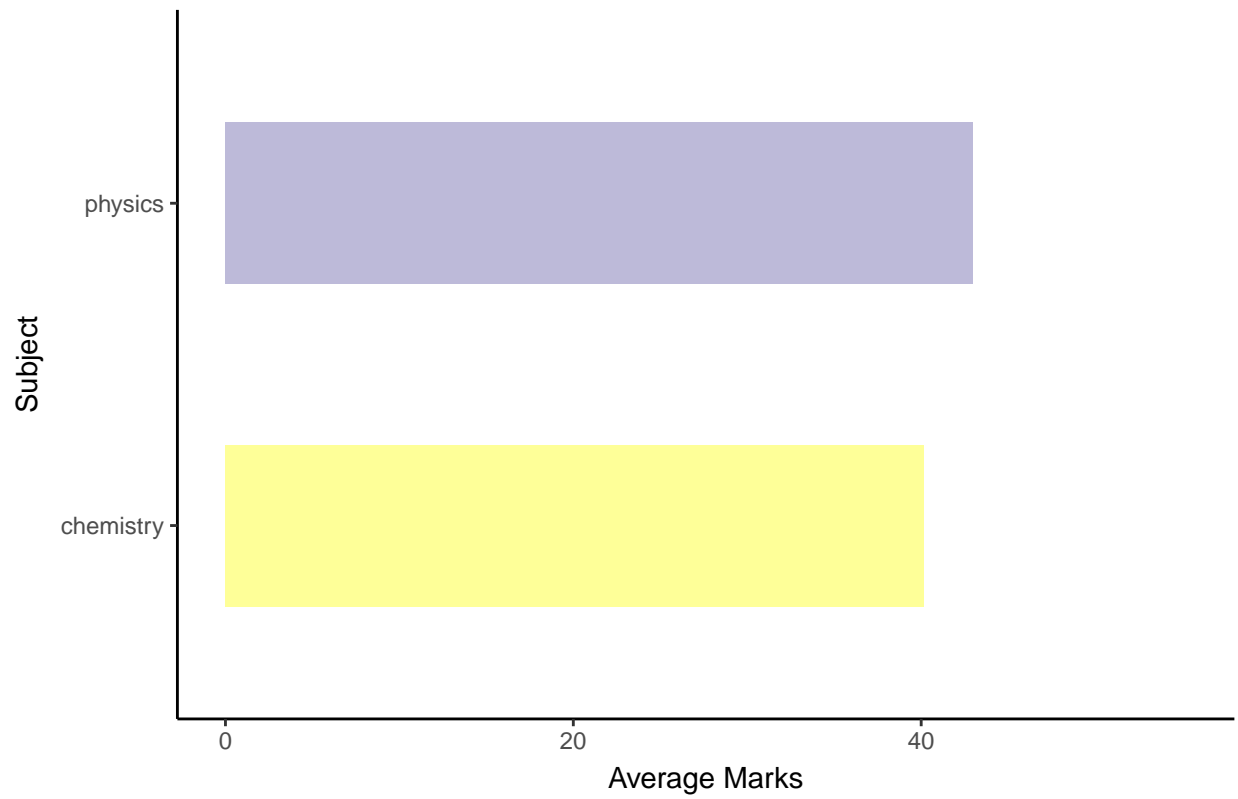
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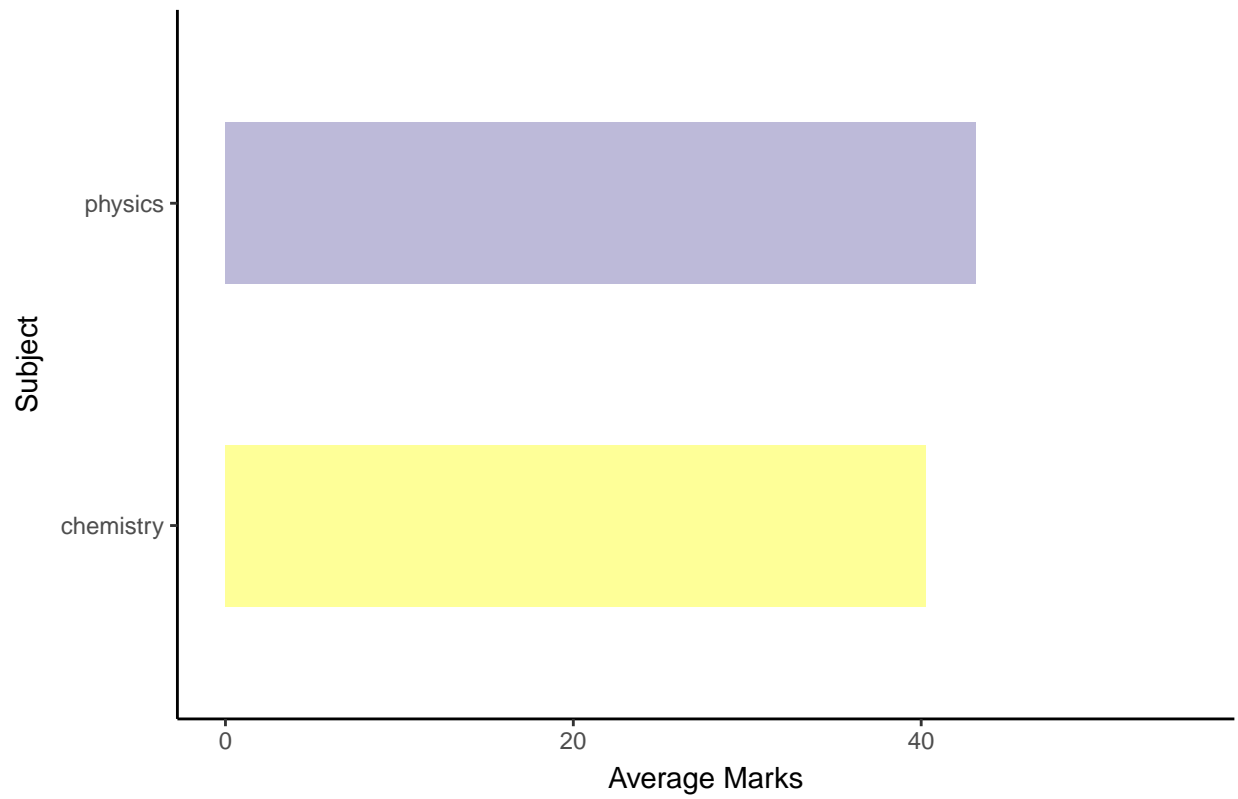
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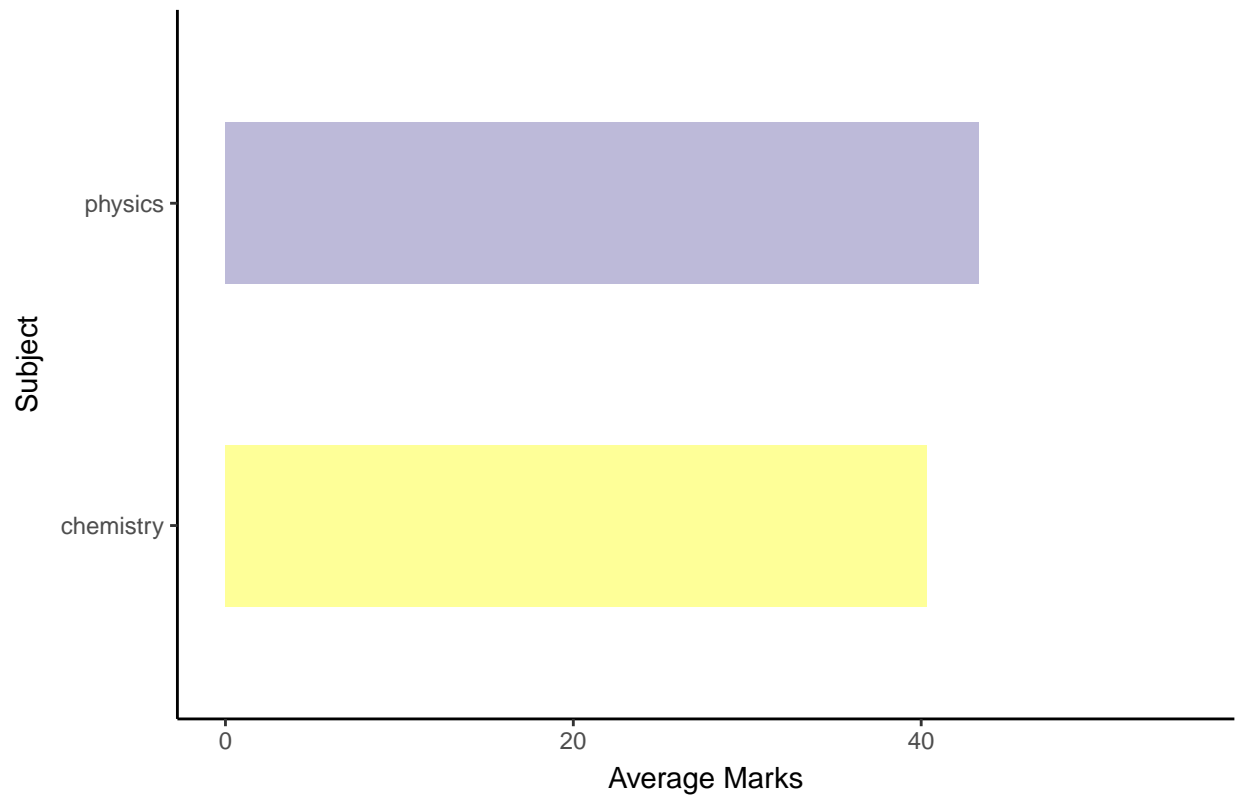
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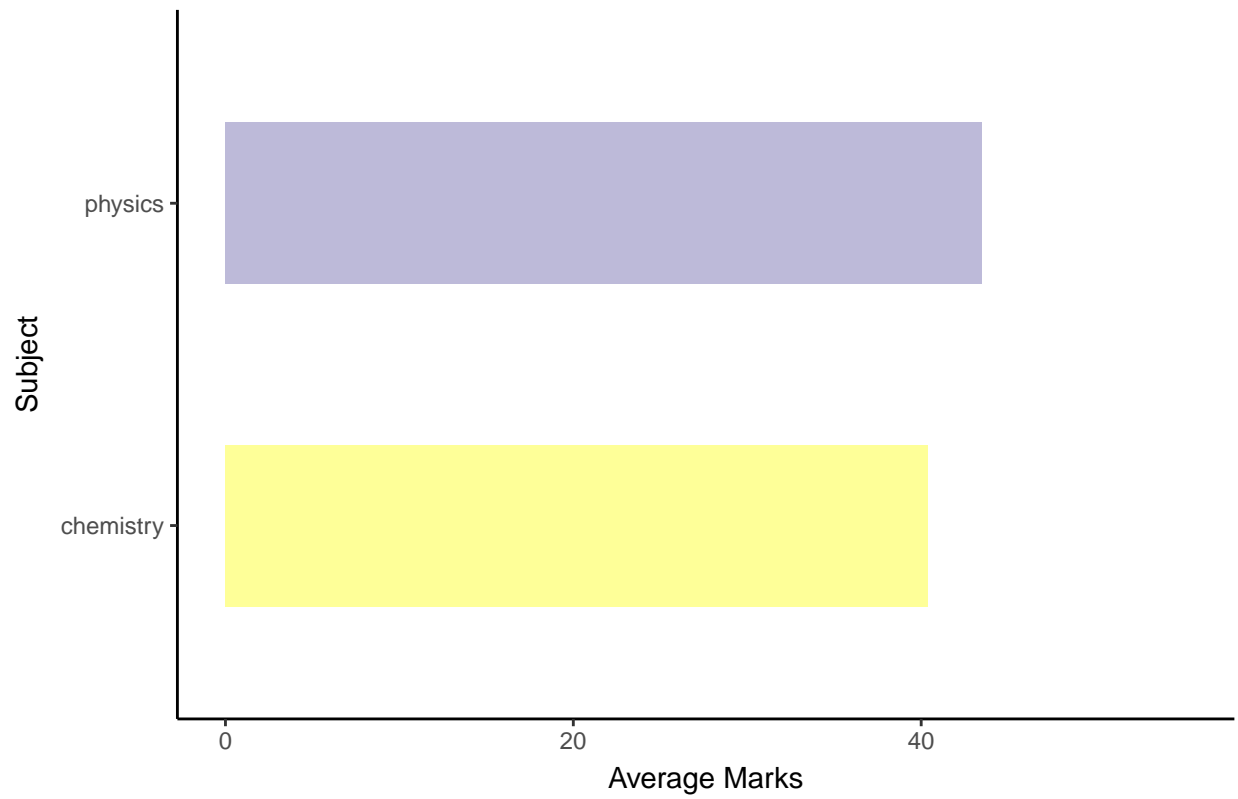
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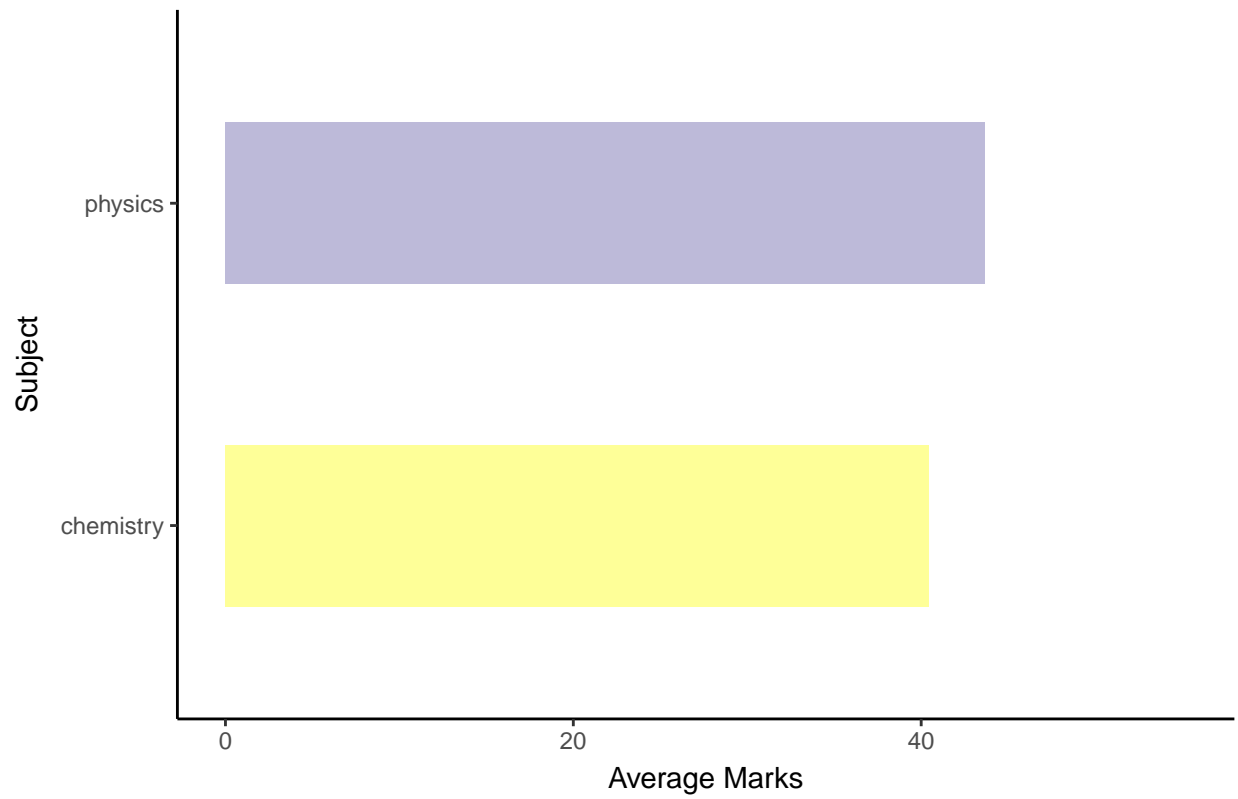
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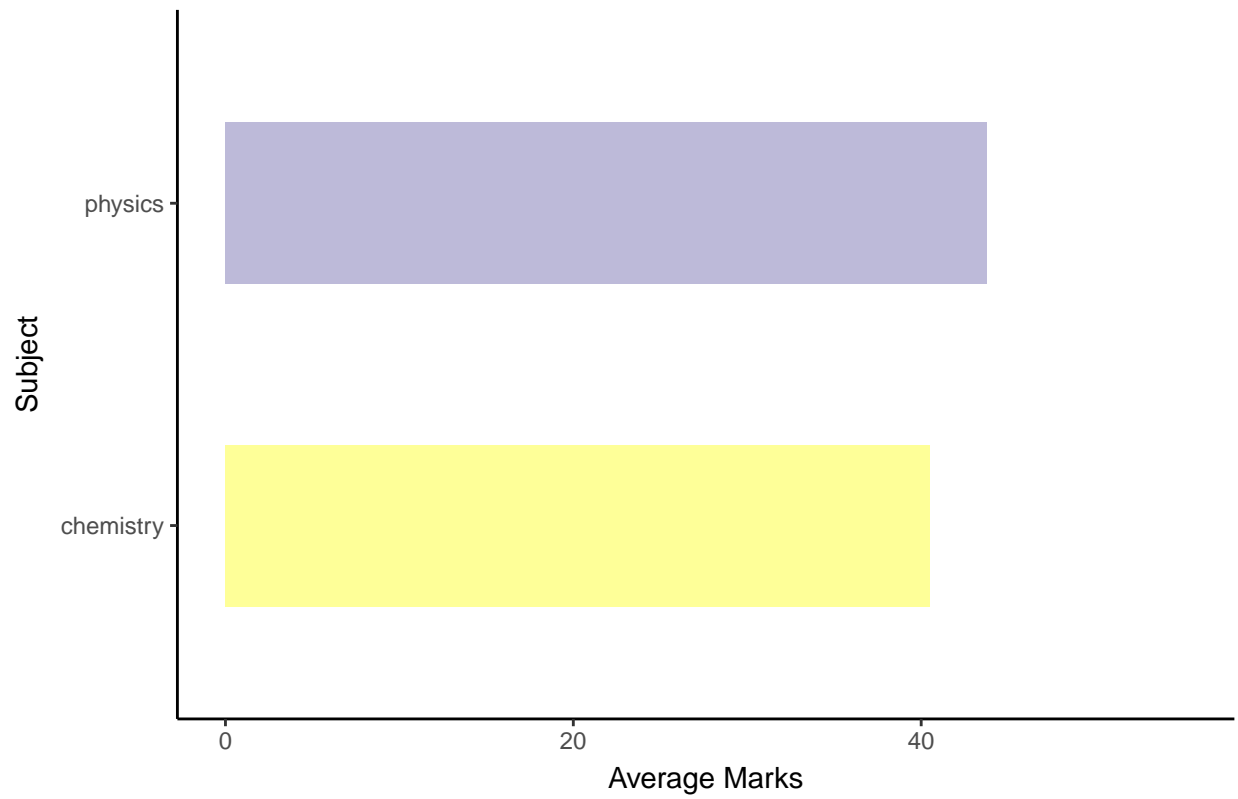
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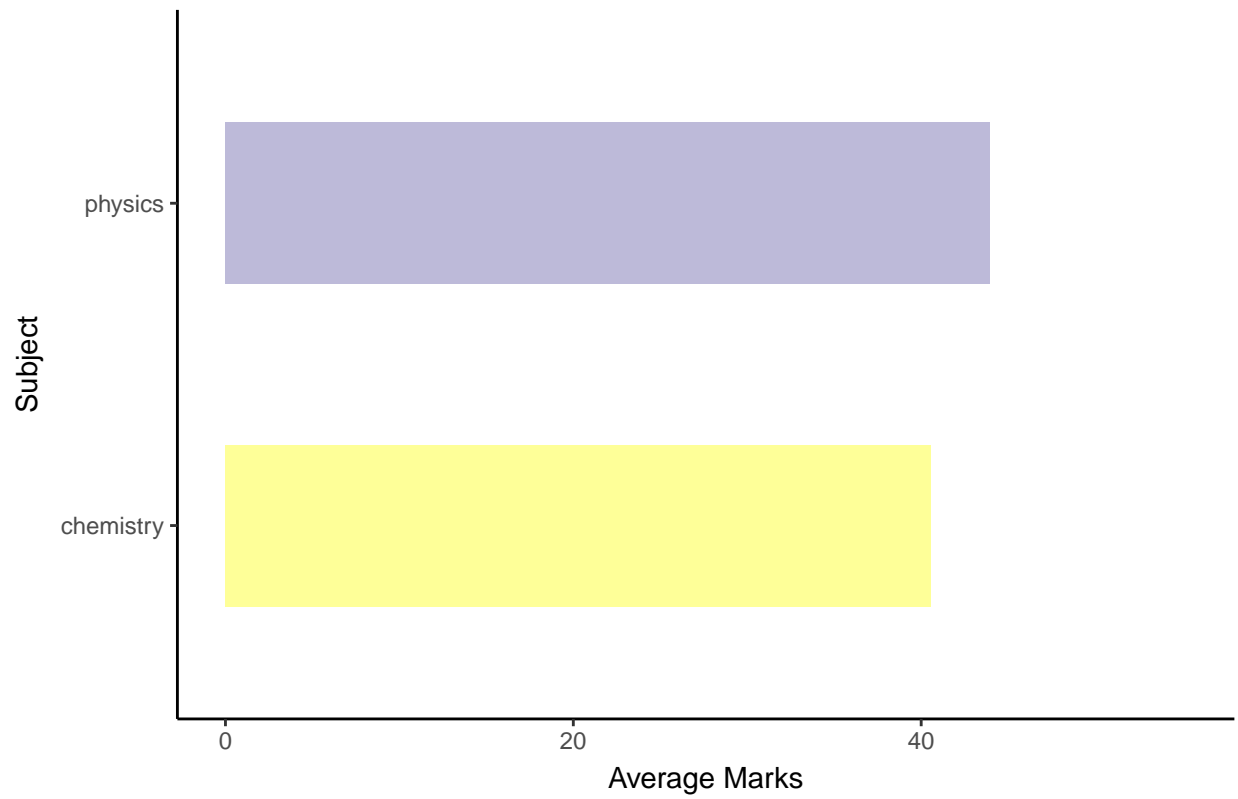
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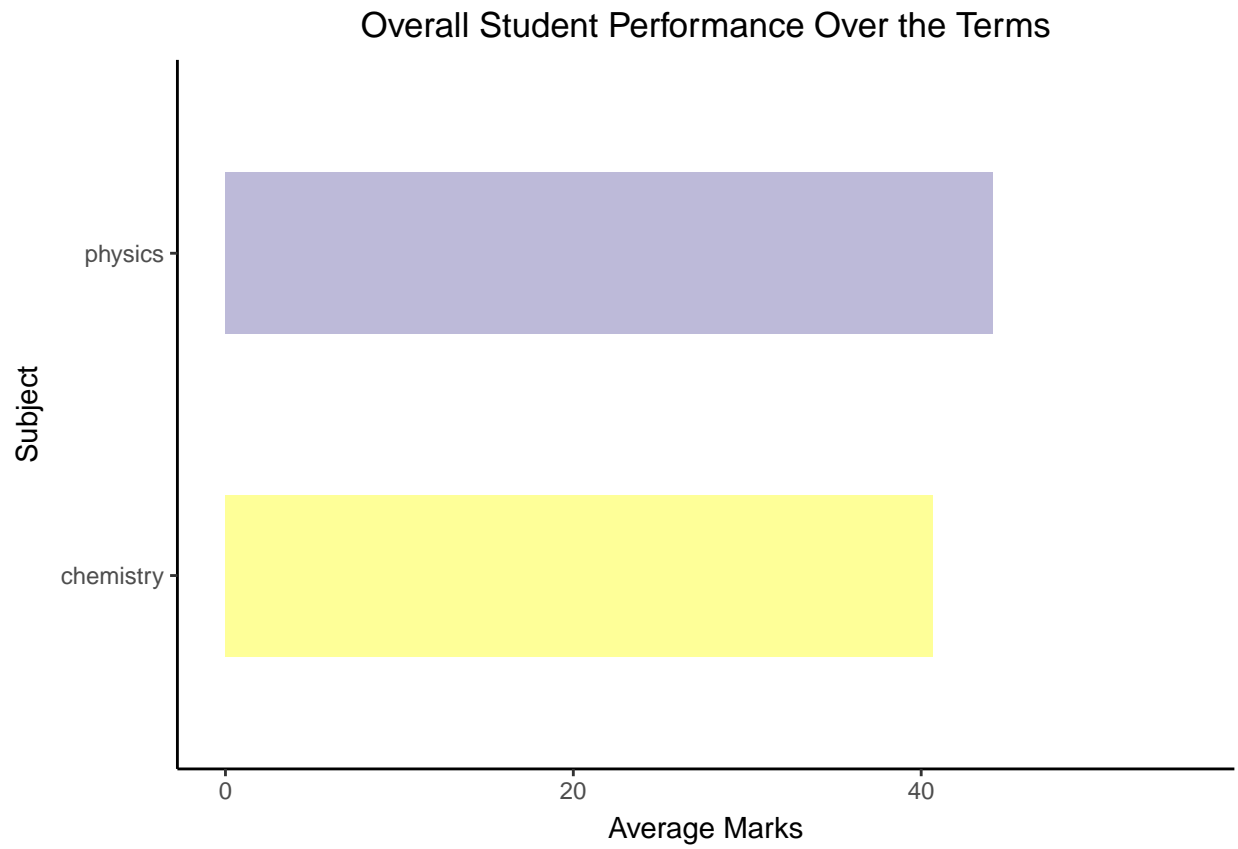


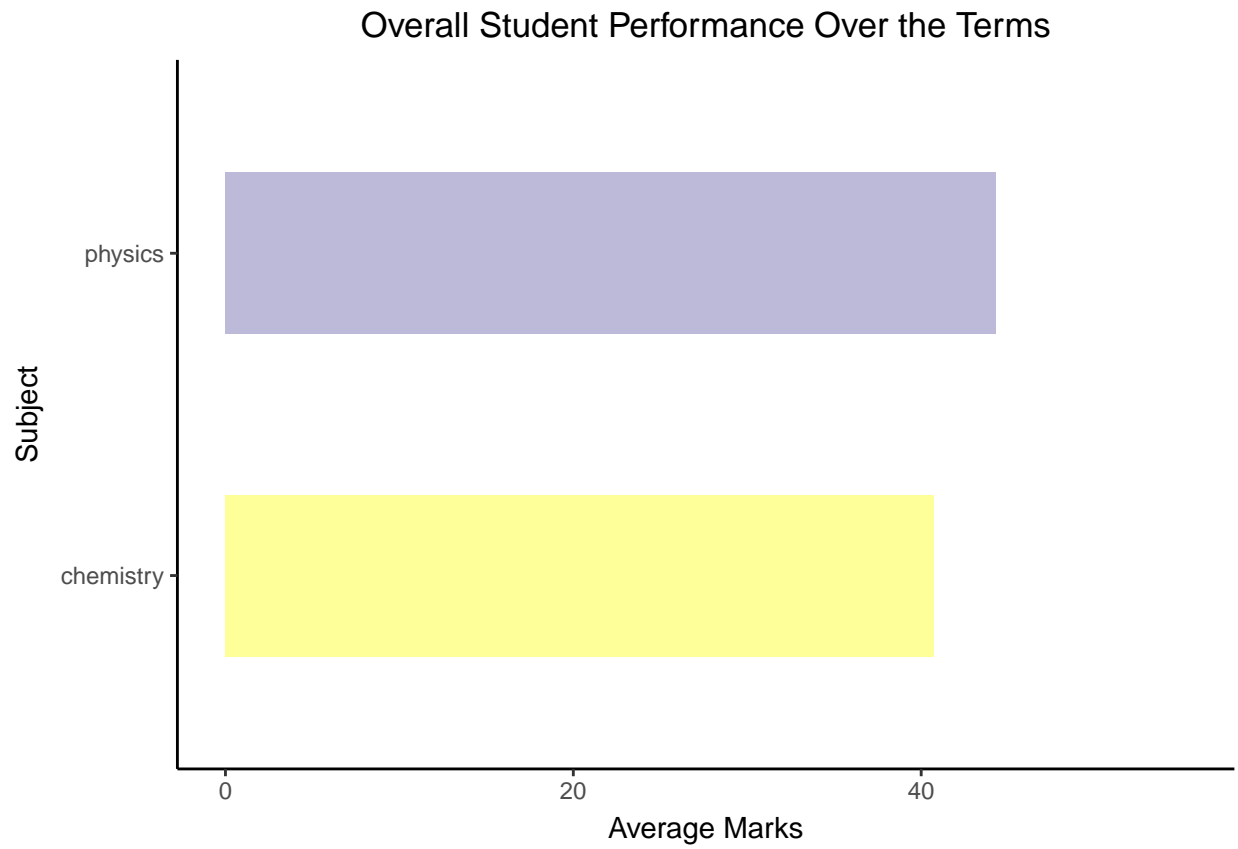
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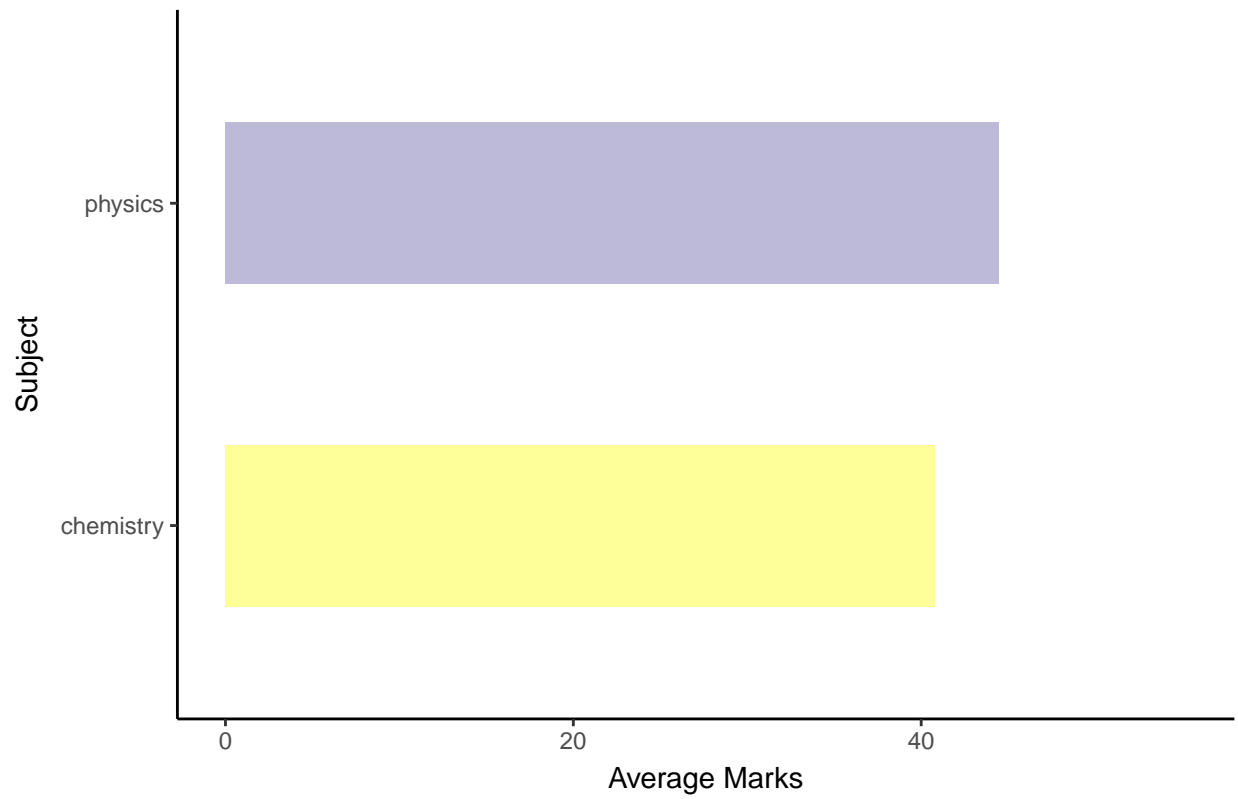
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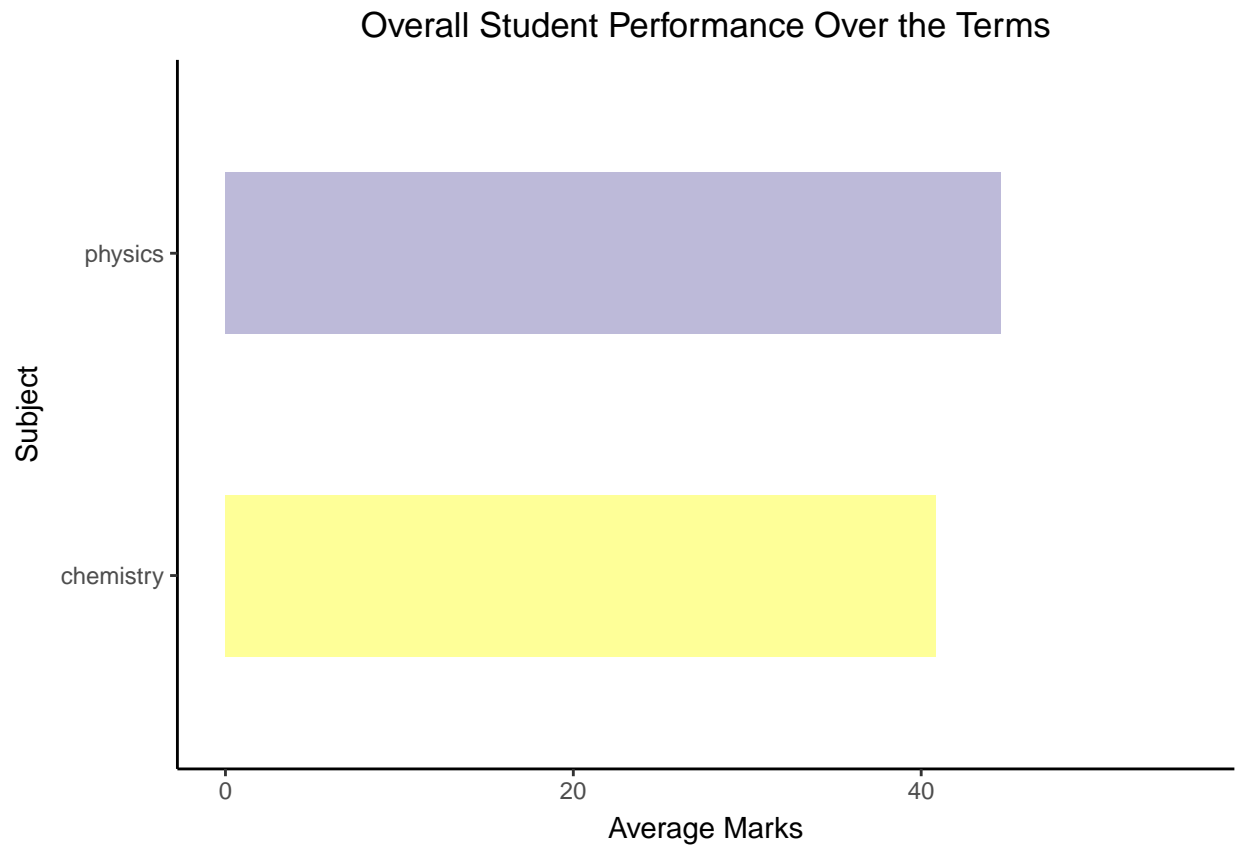


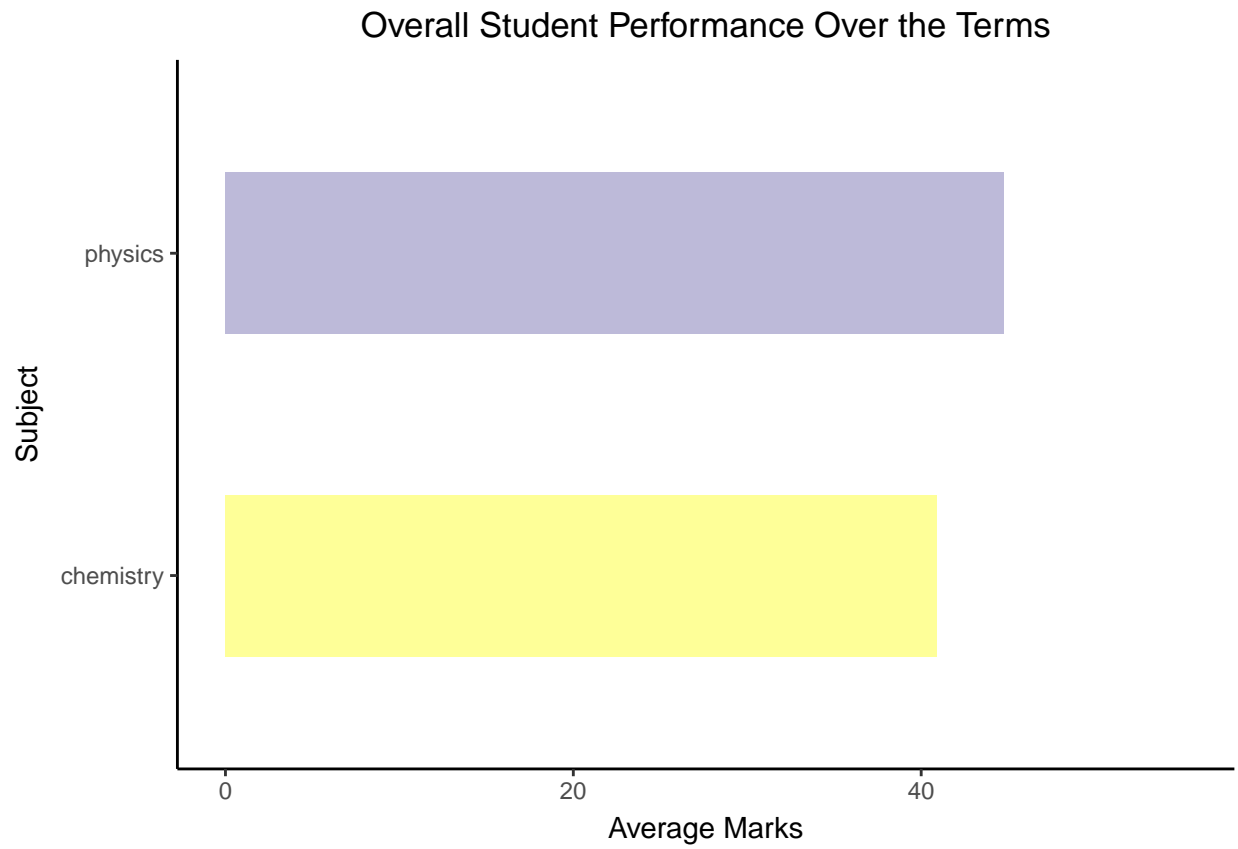




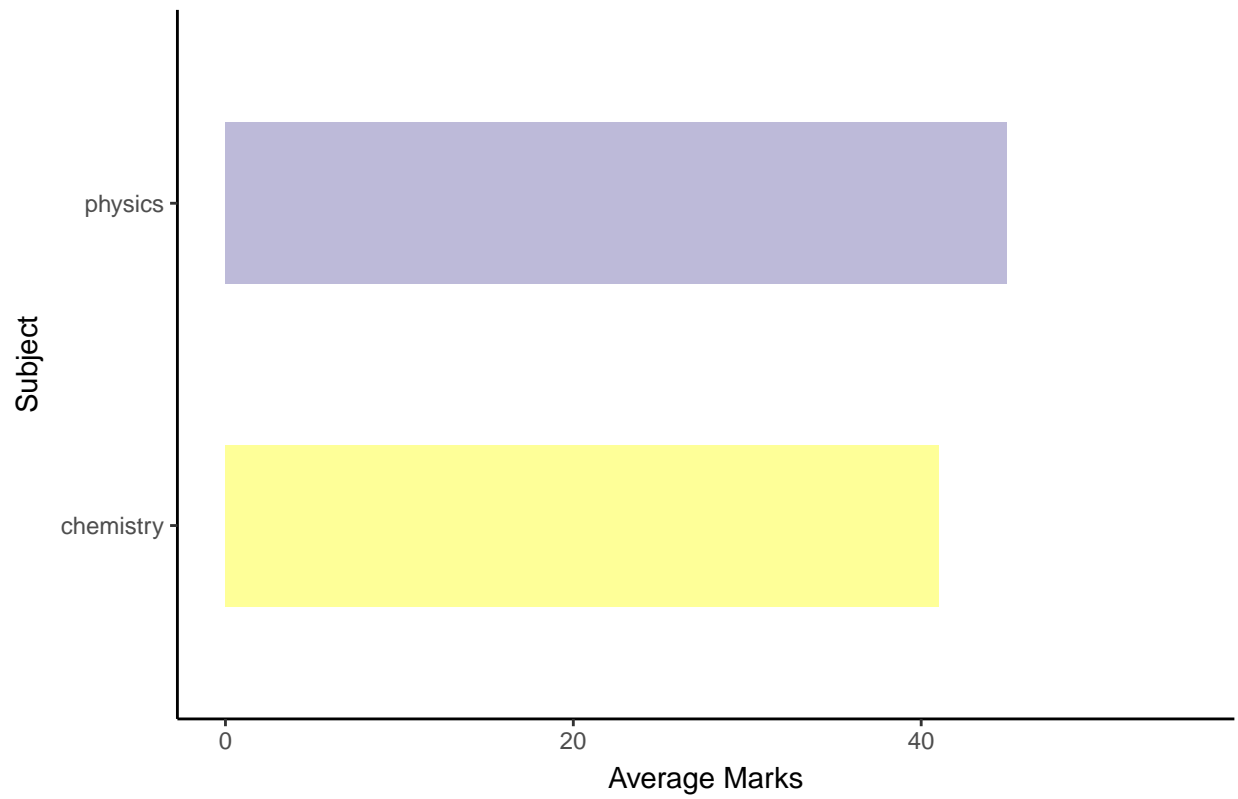
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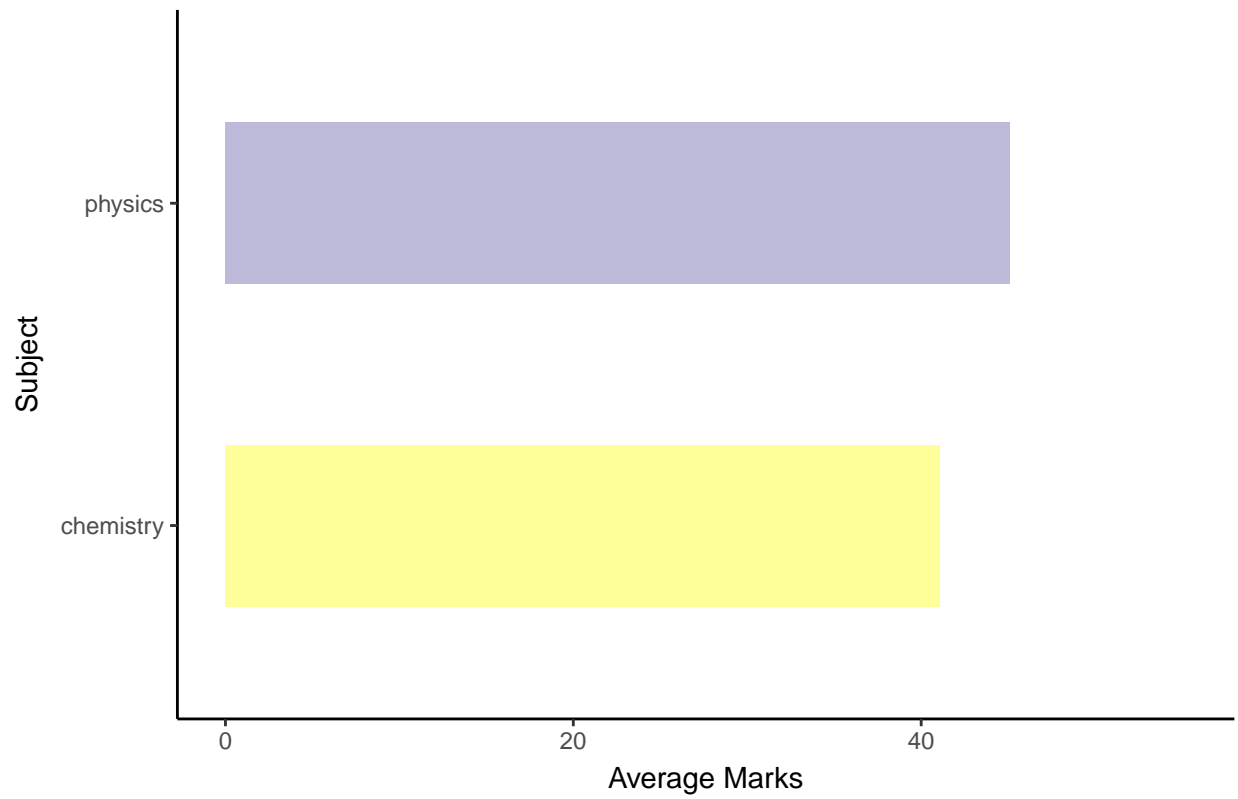


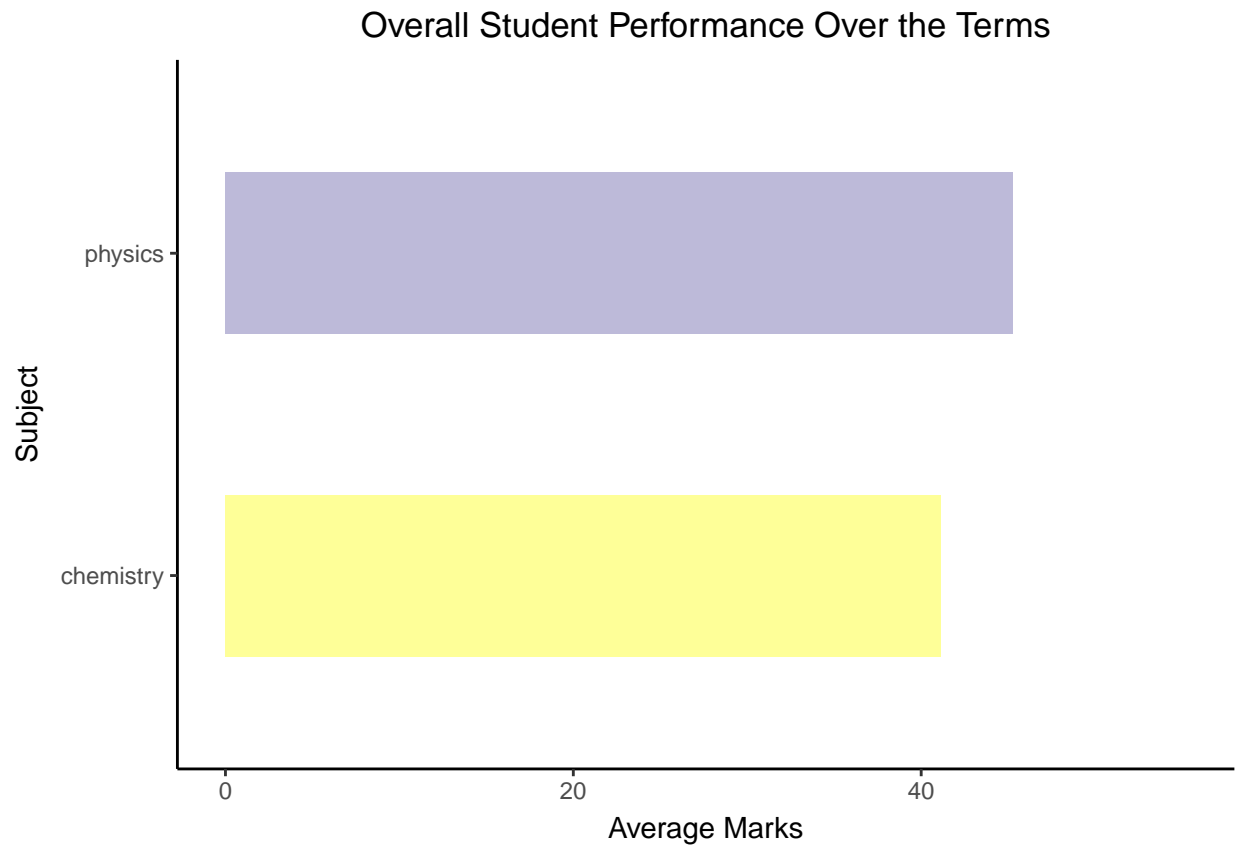


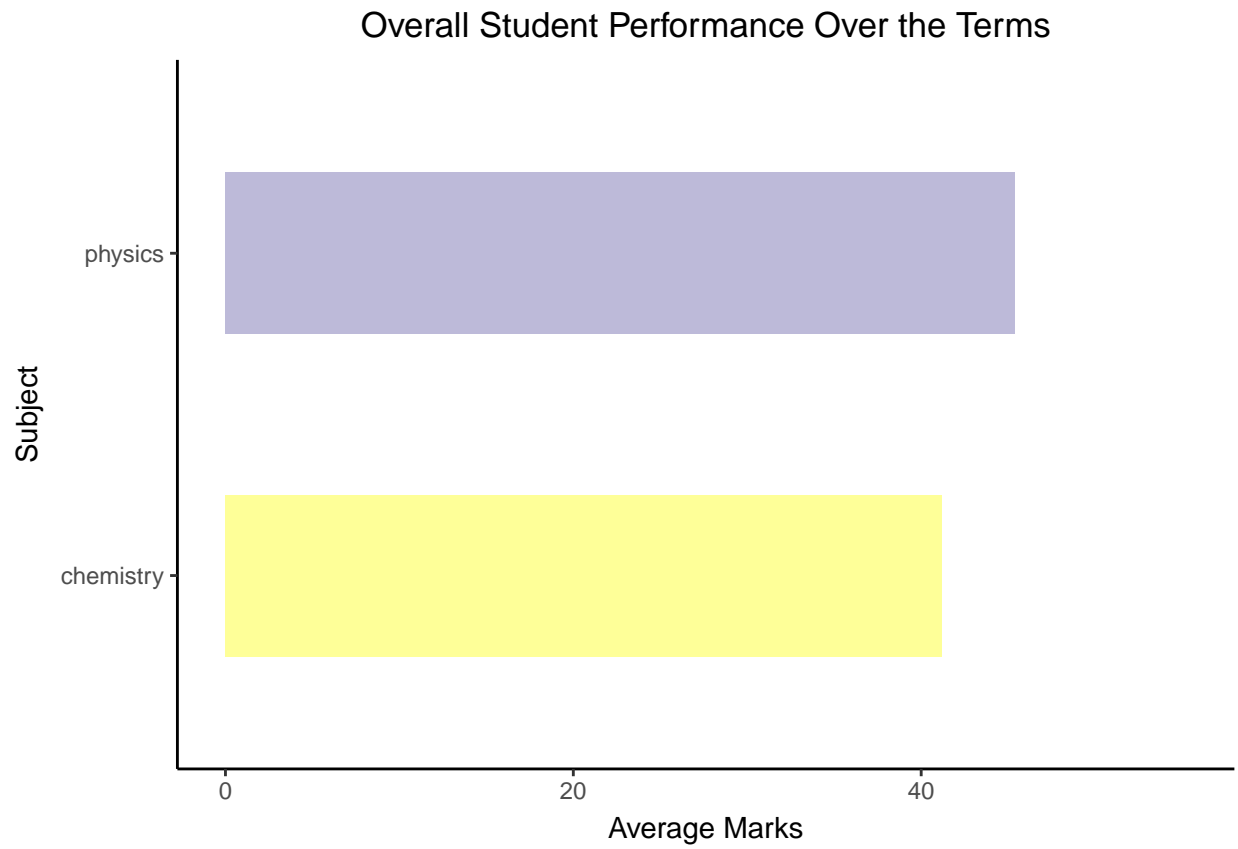
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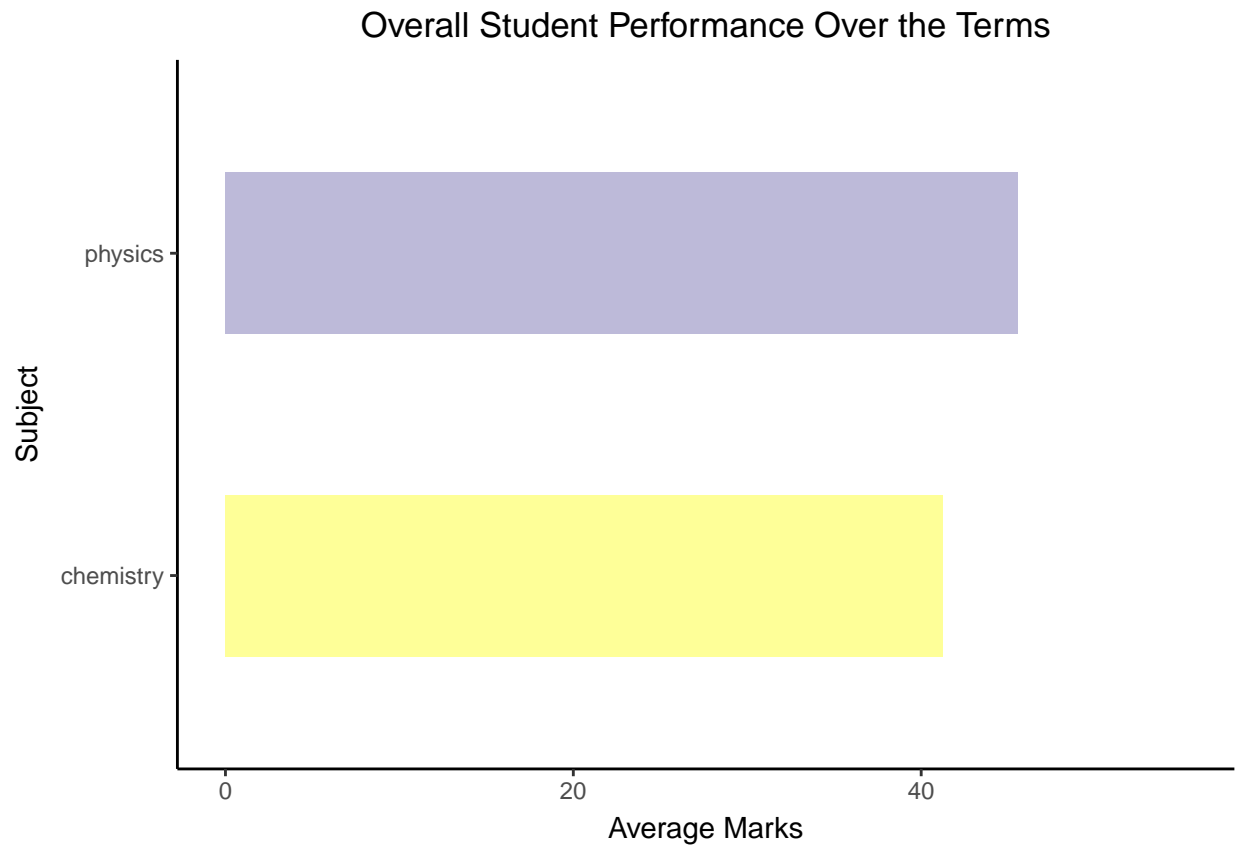


Overall Student Performance Over the Terms

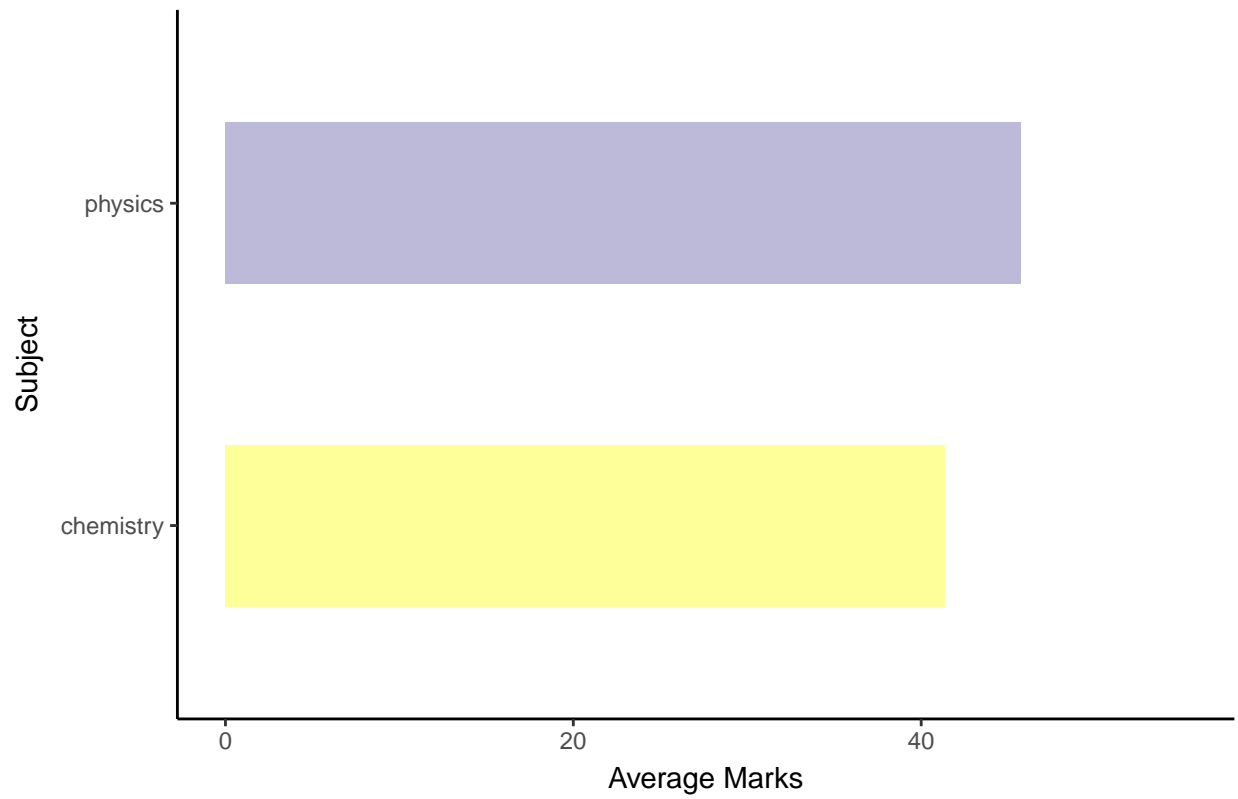




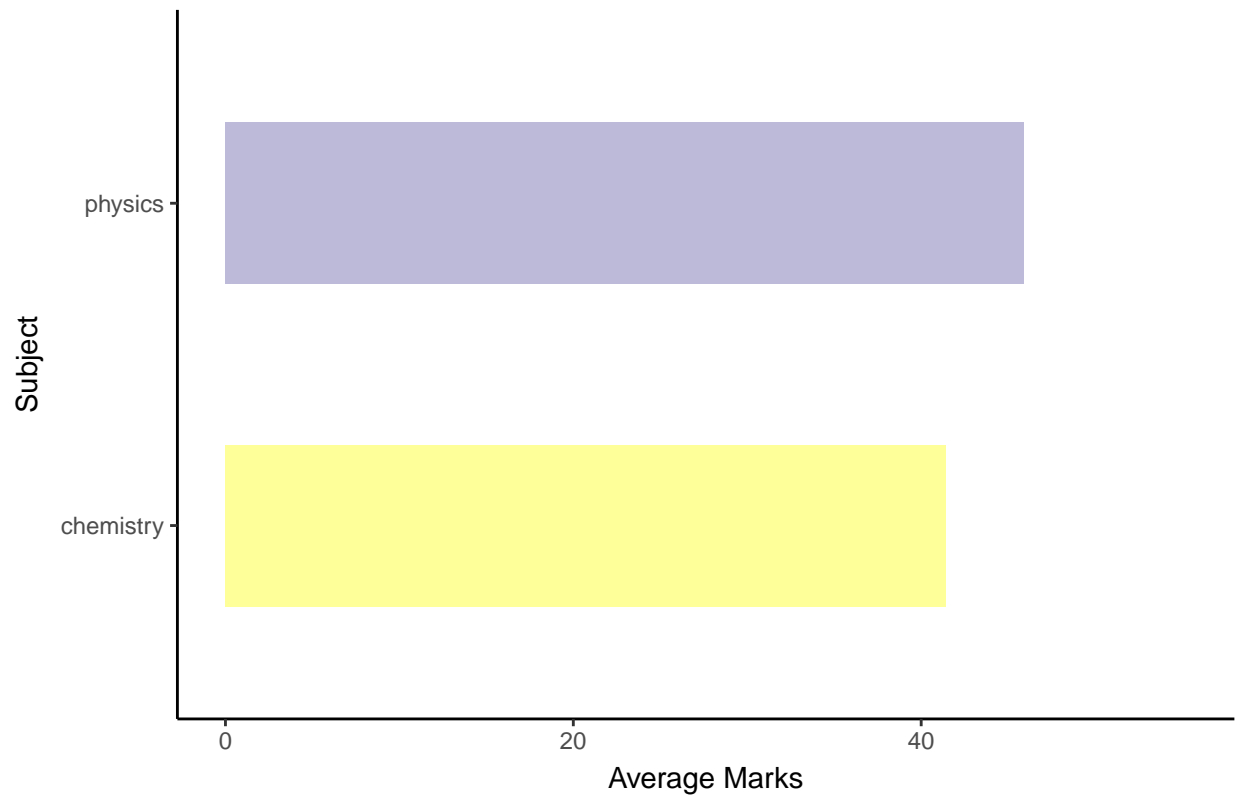




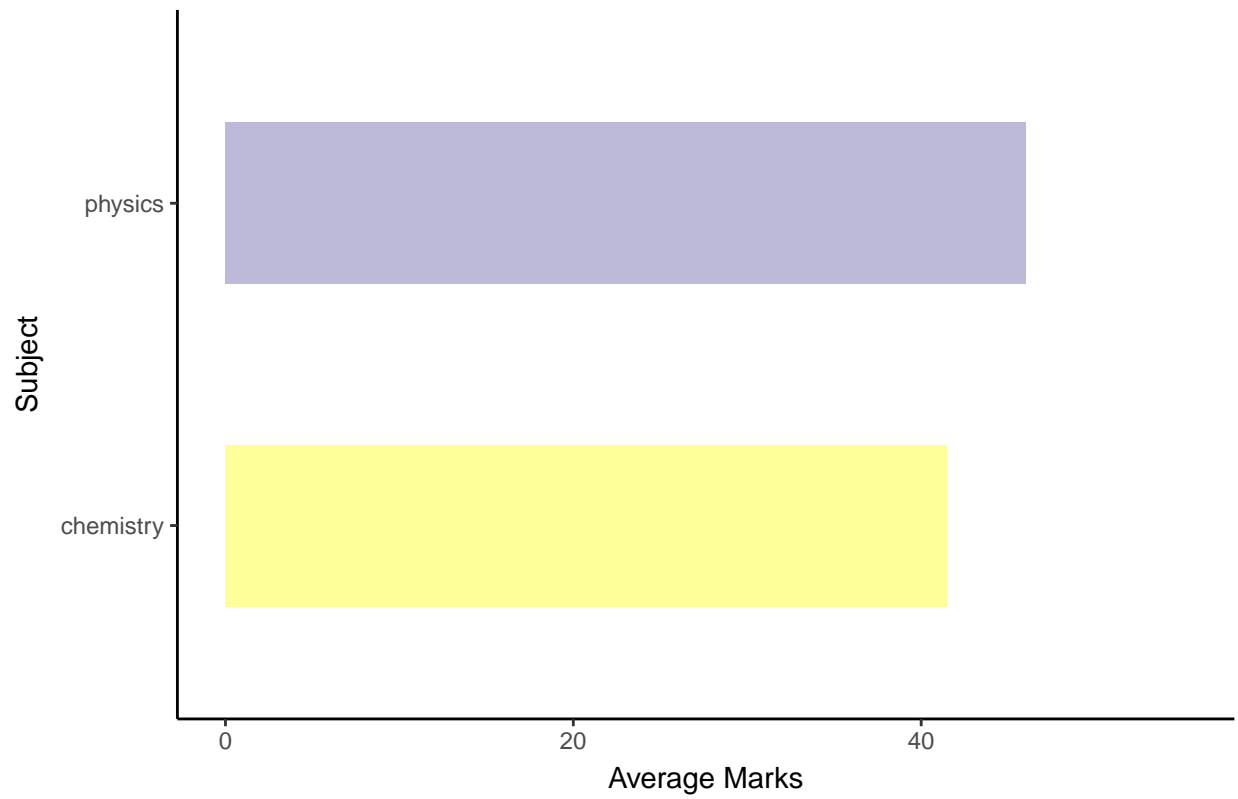
Overall Student Performance Over the Terms

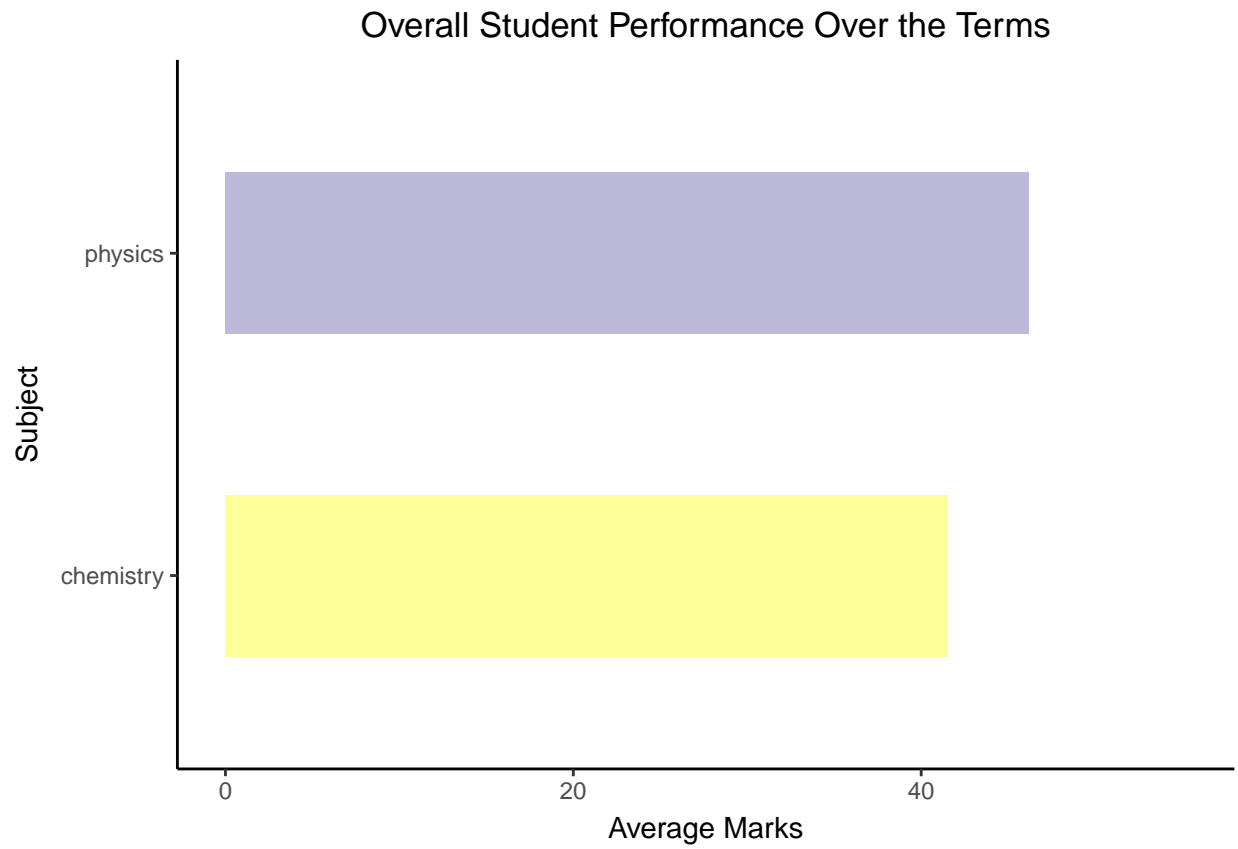


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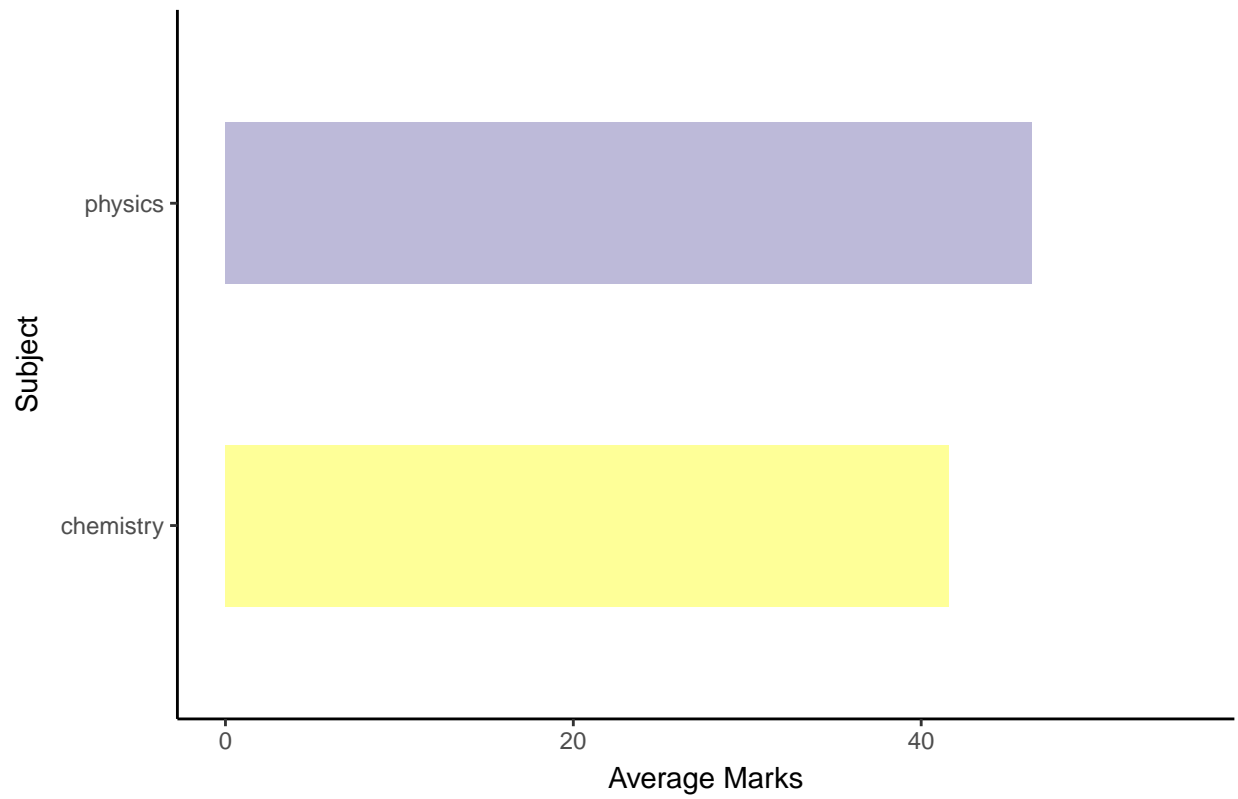


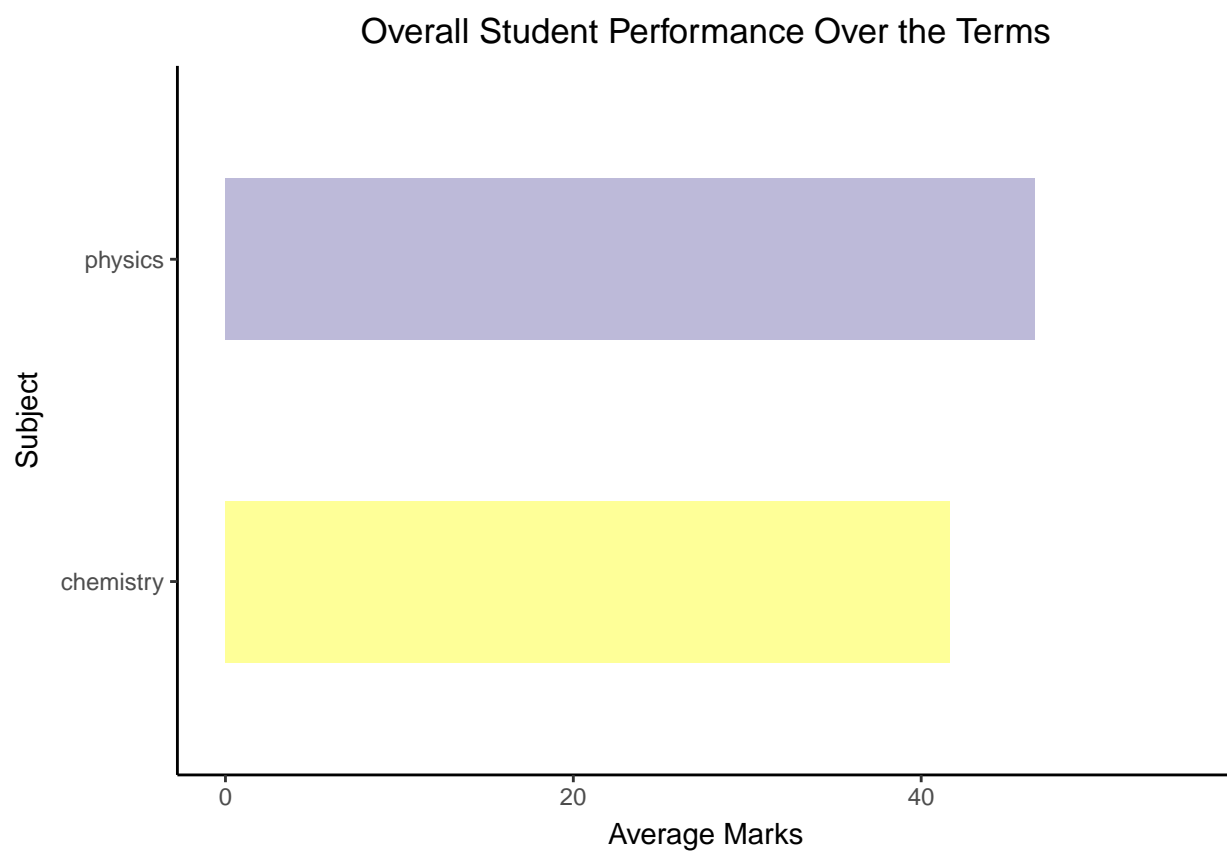
Overall Student Performance Over the Terms



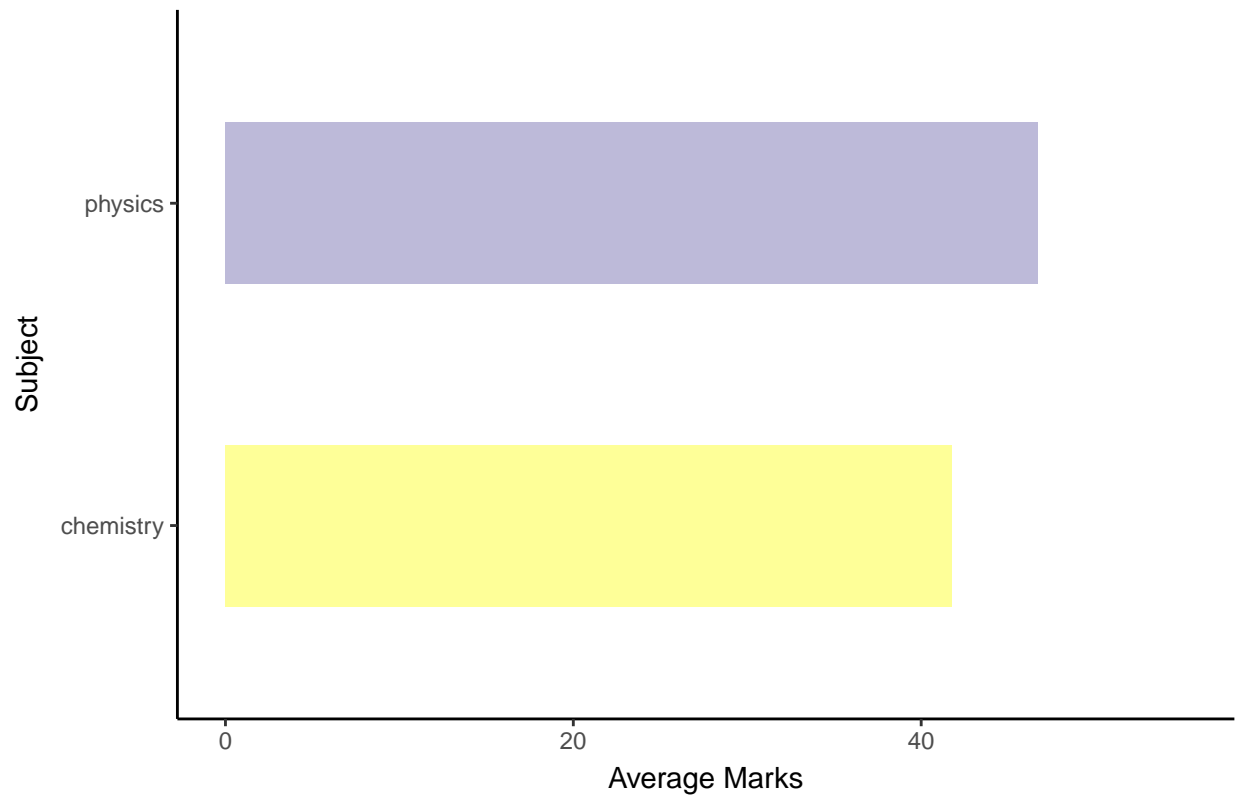


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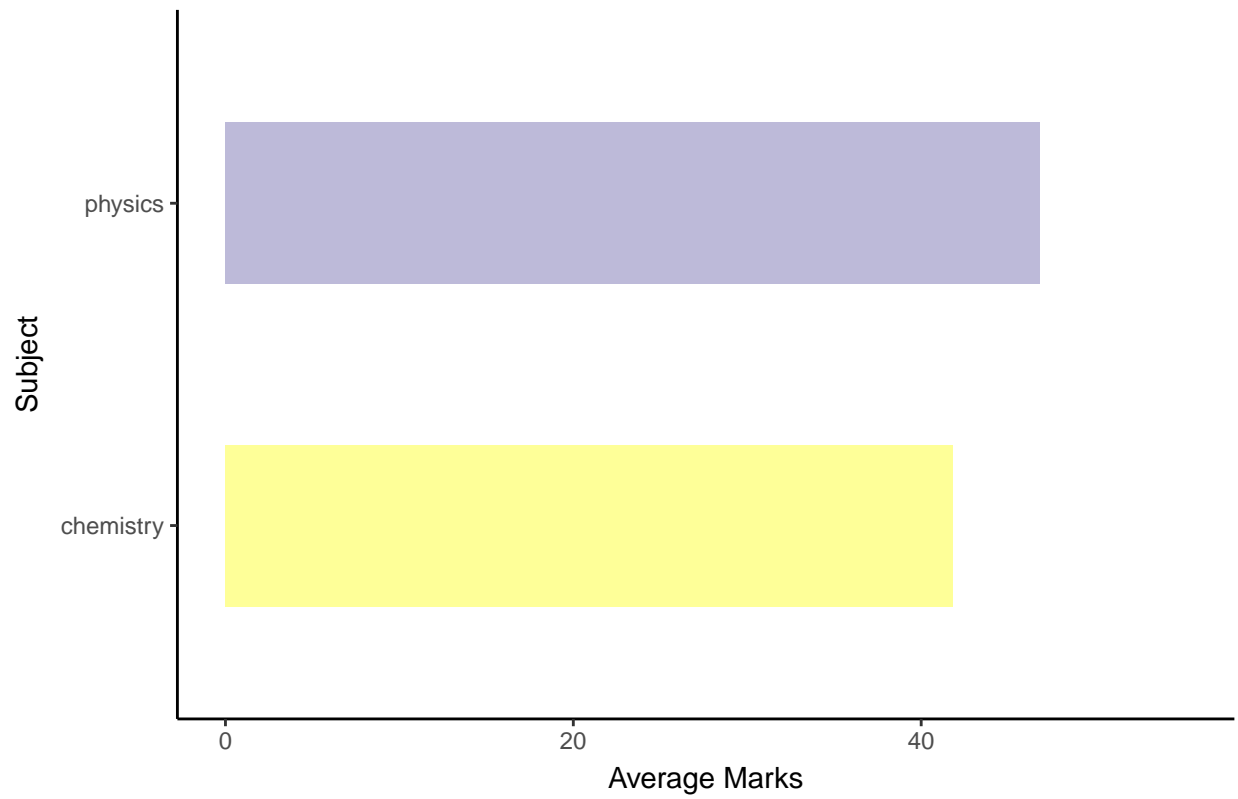




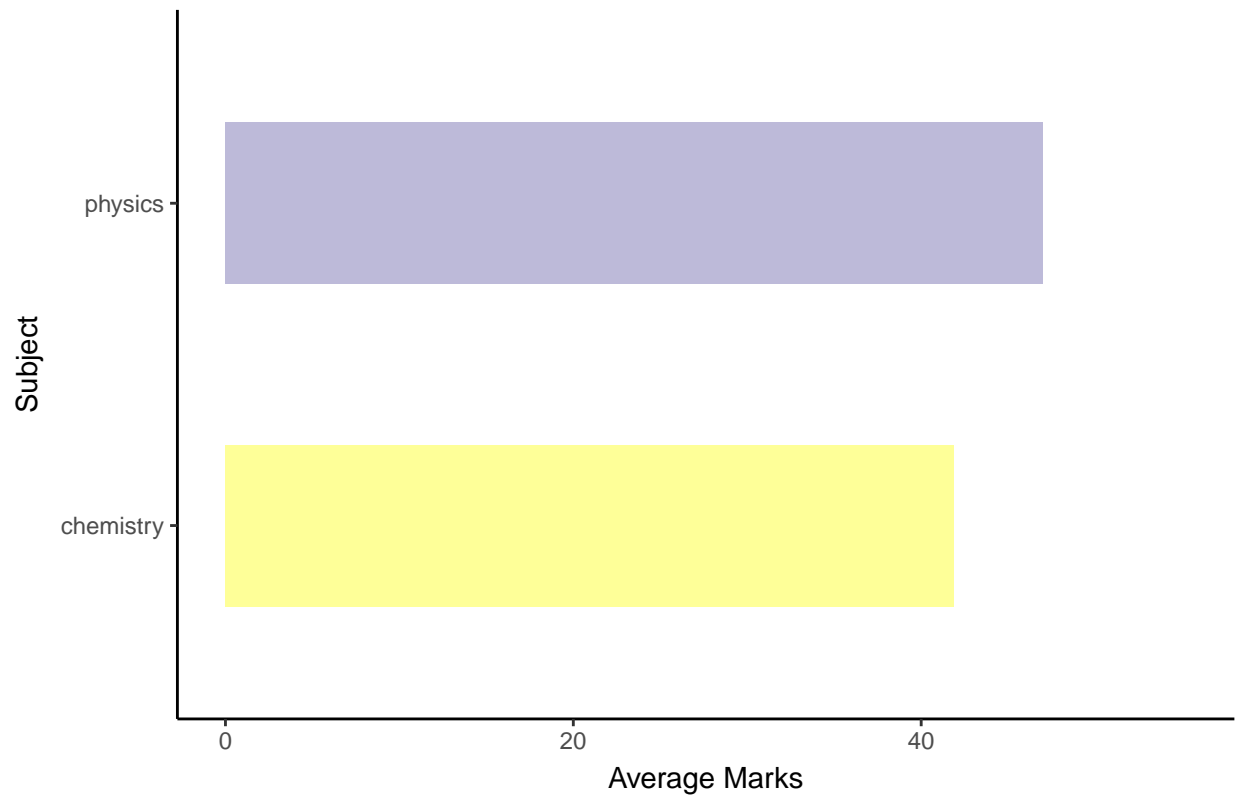
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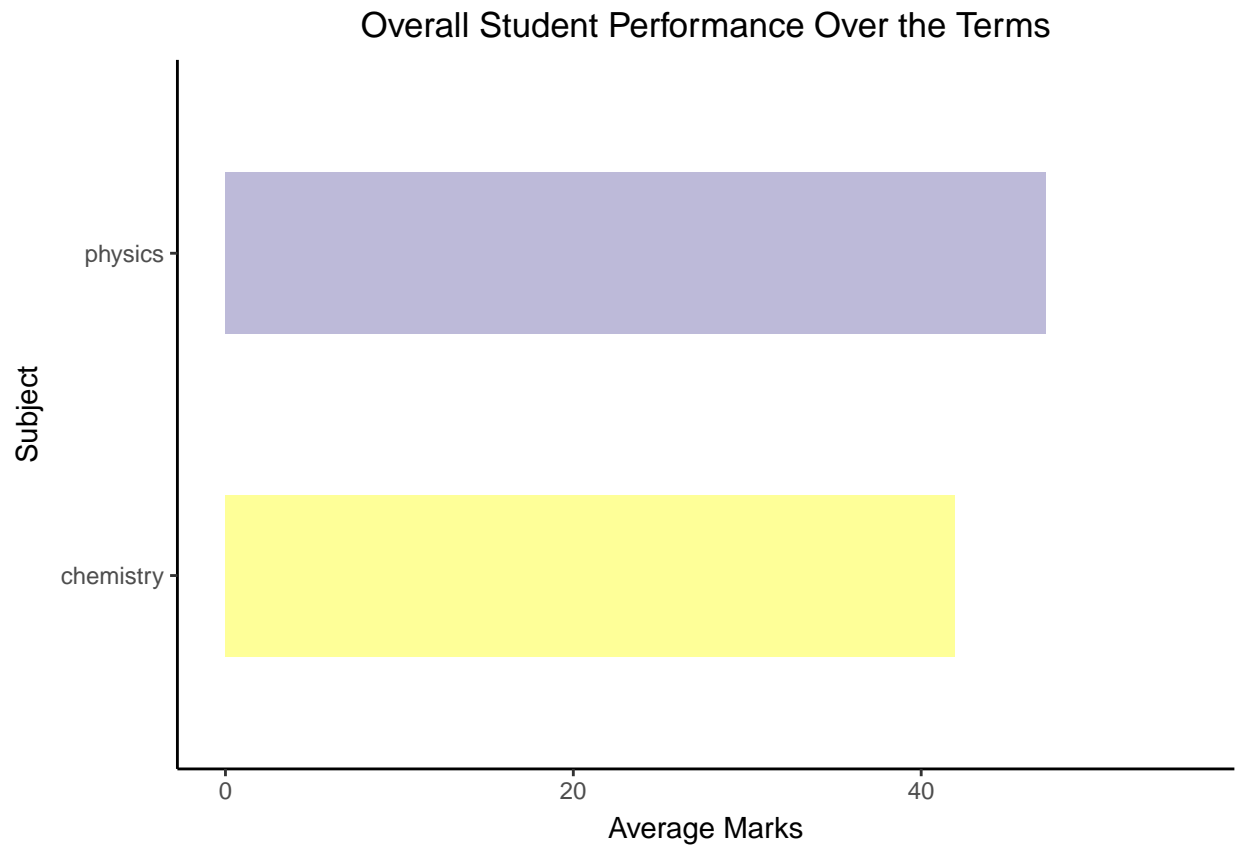


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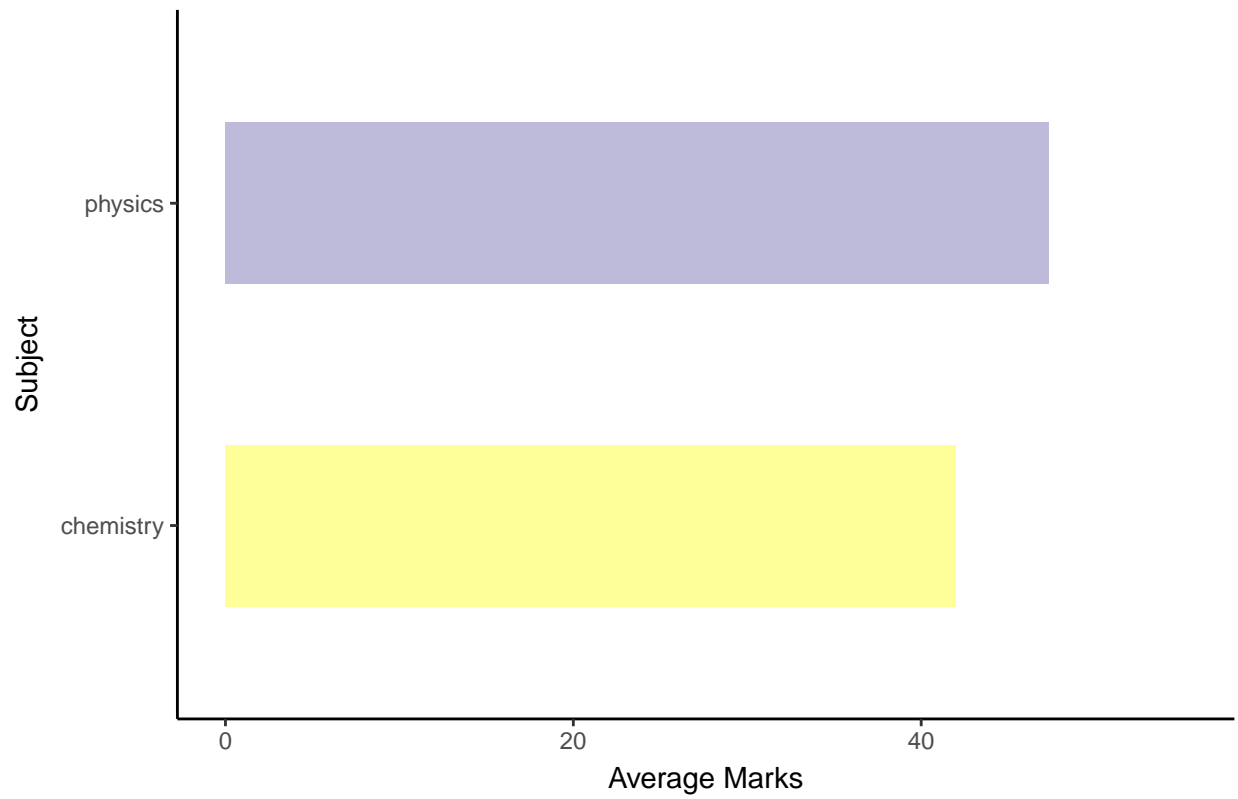


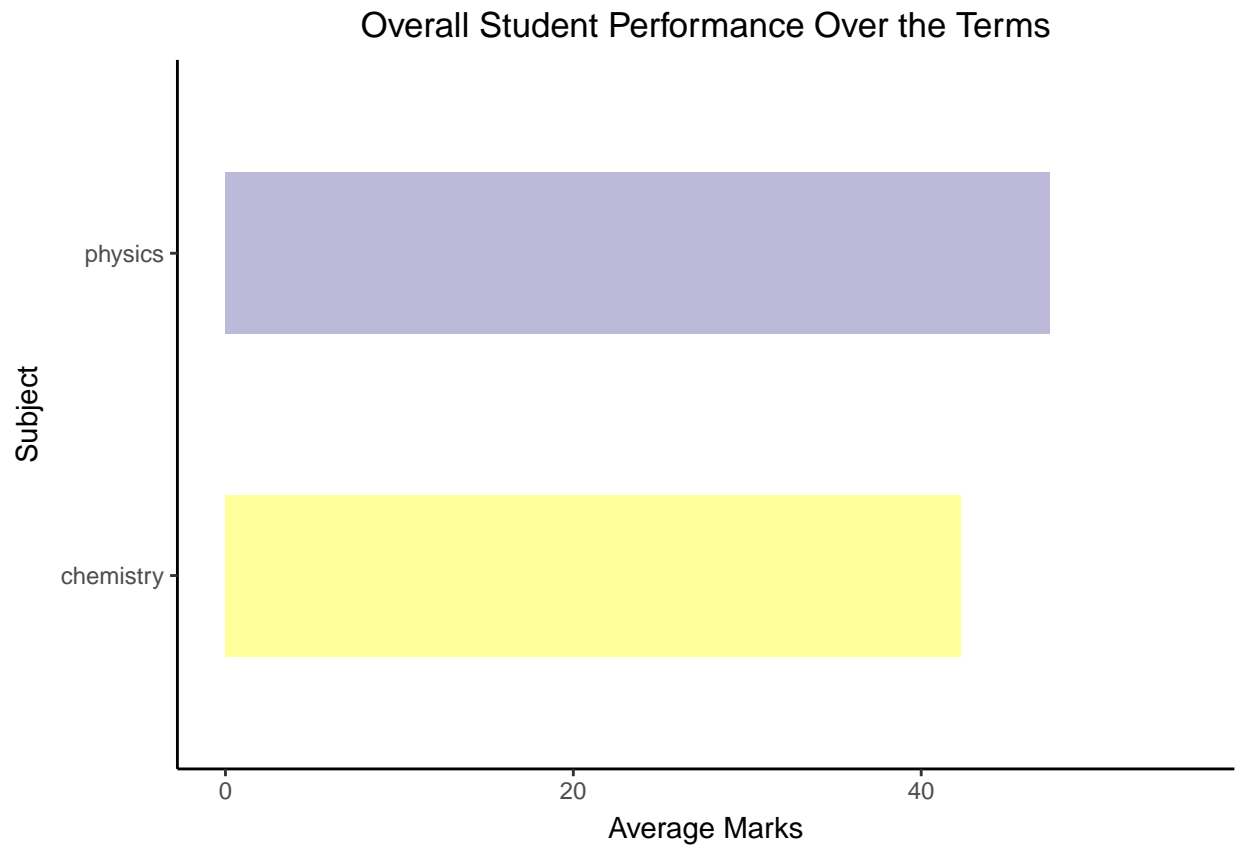
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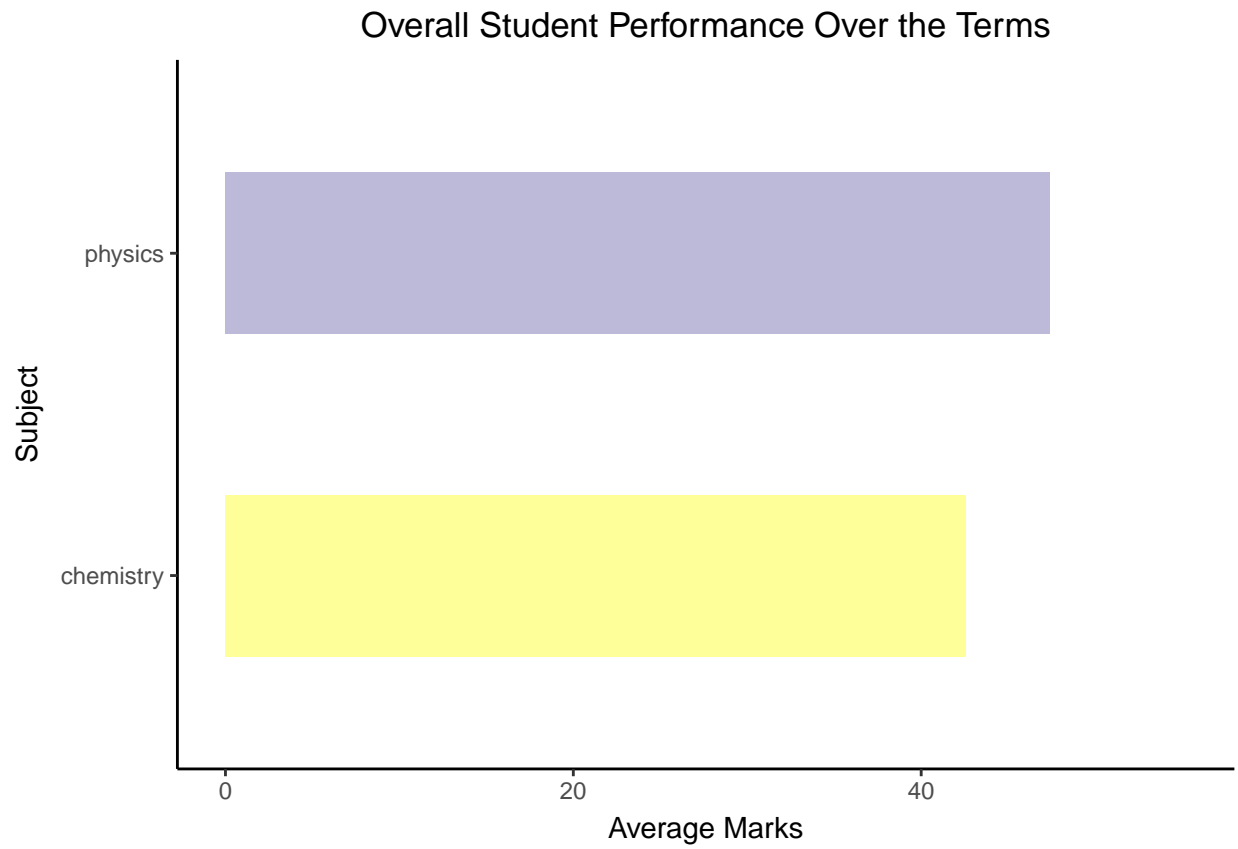


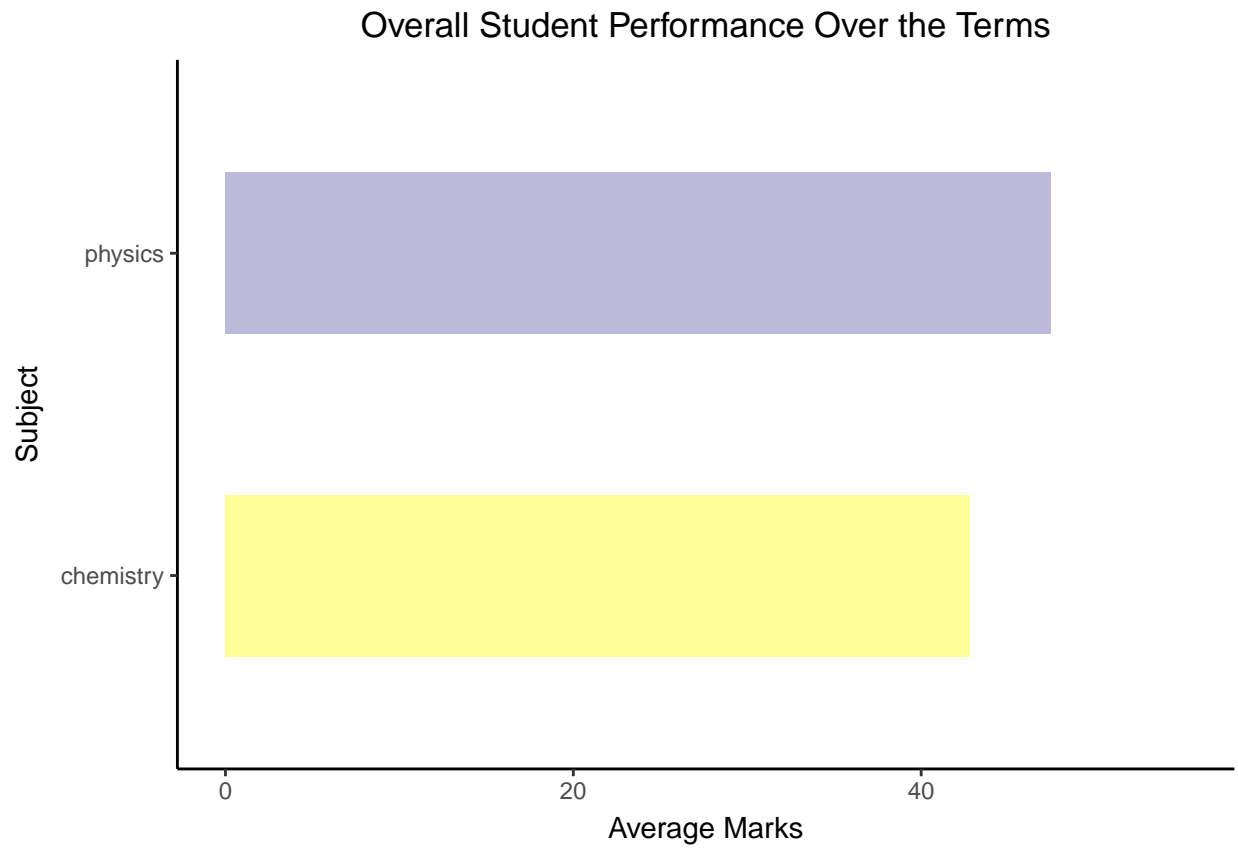


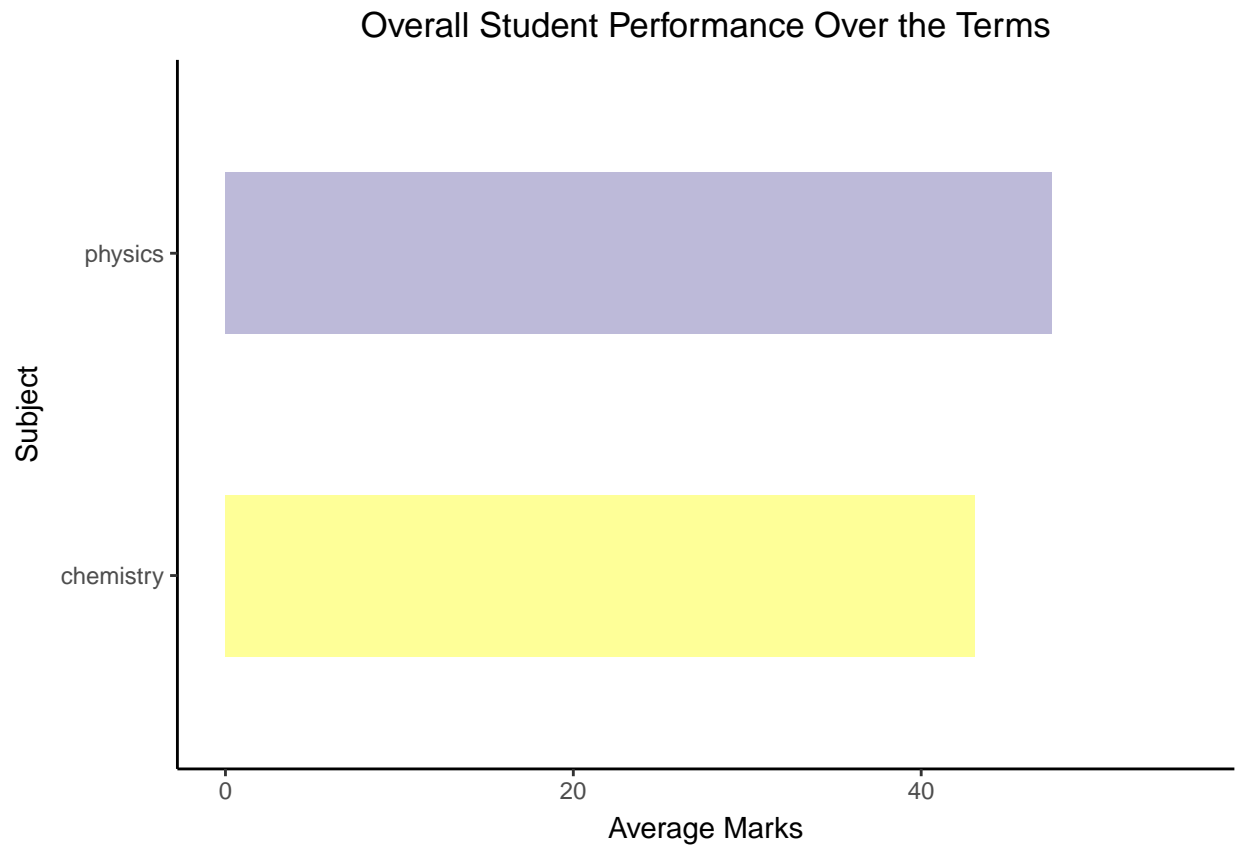
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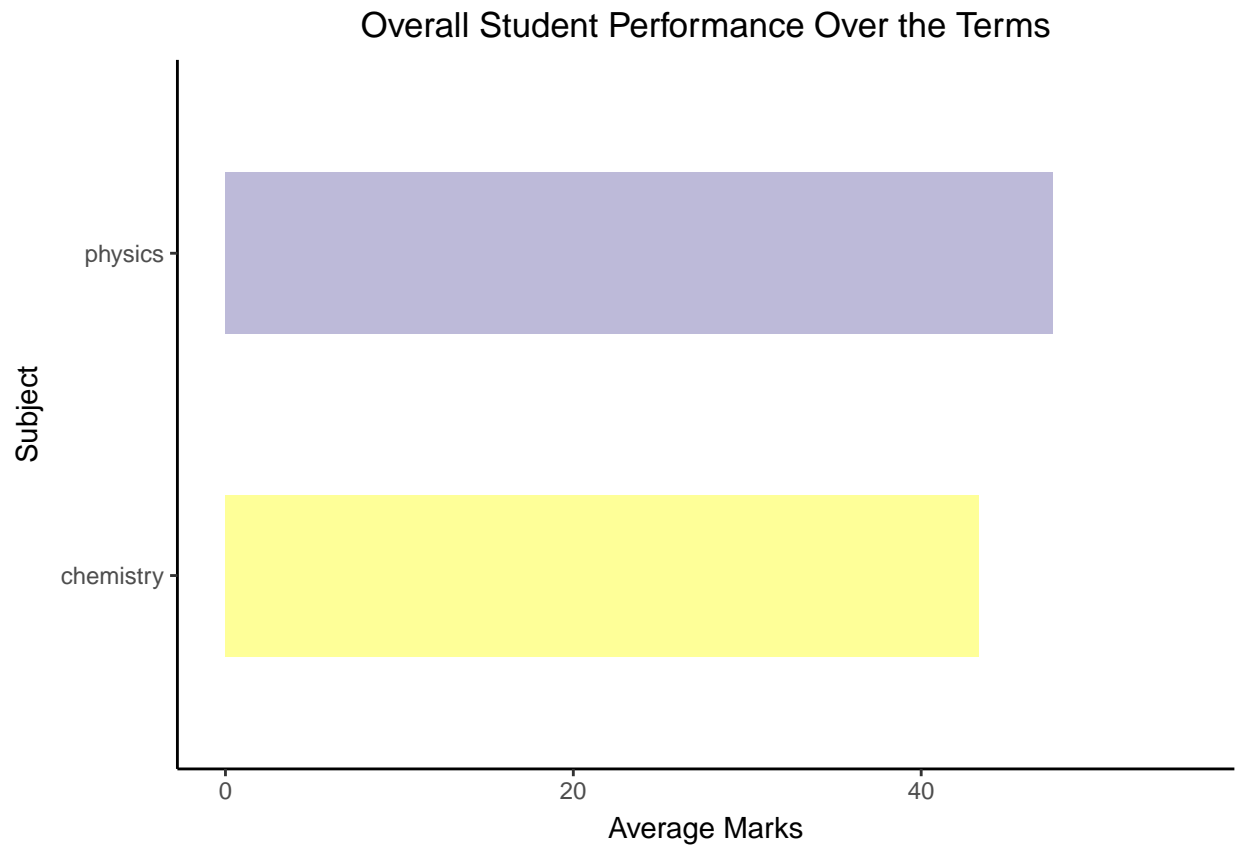


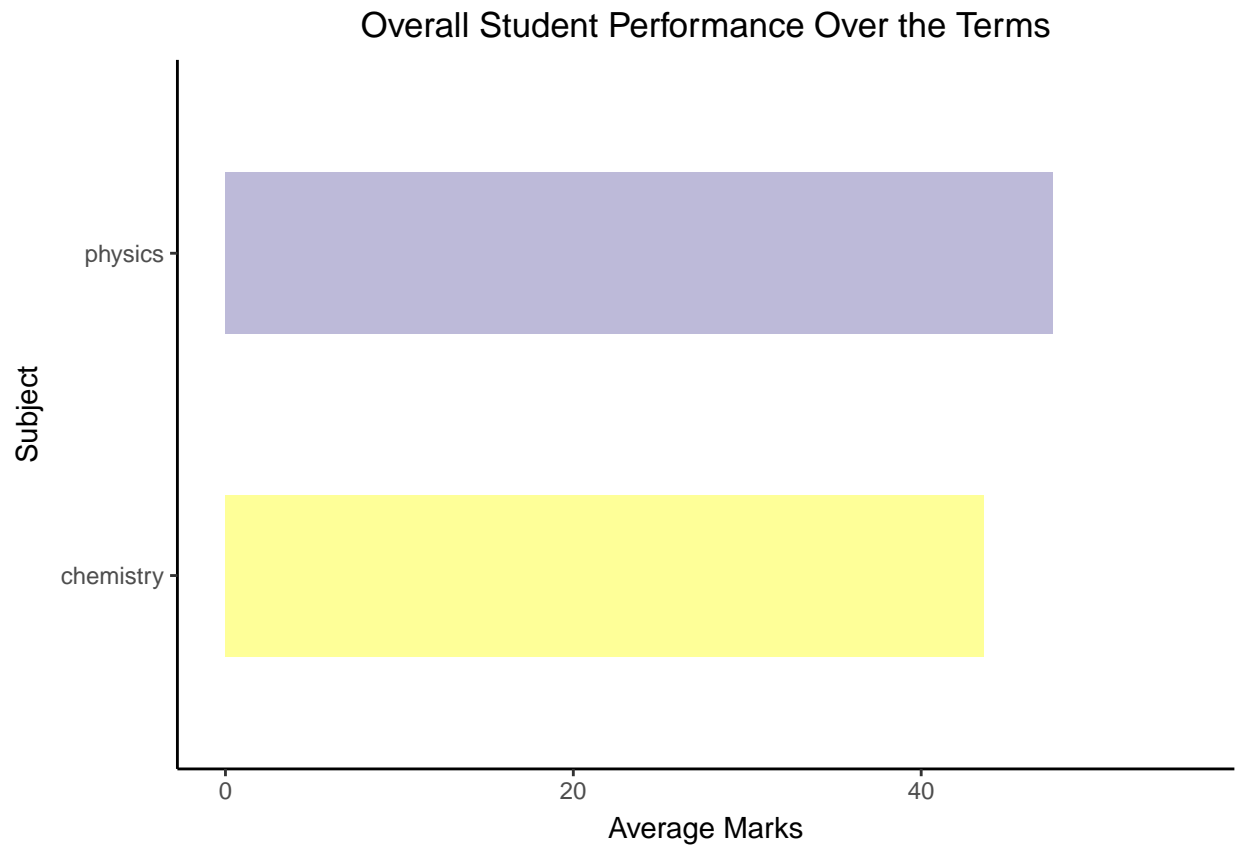


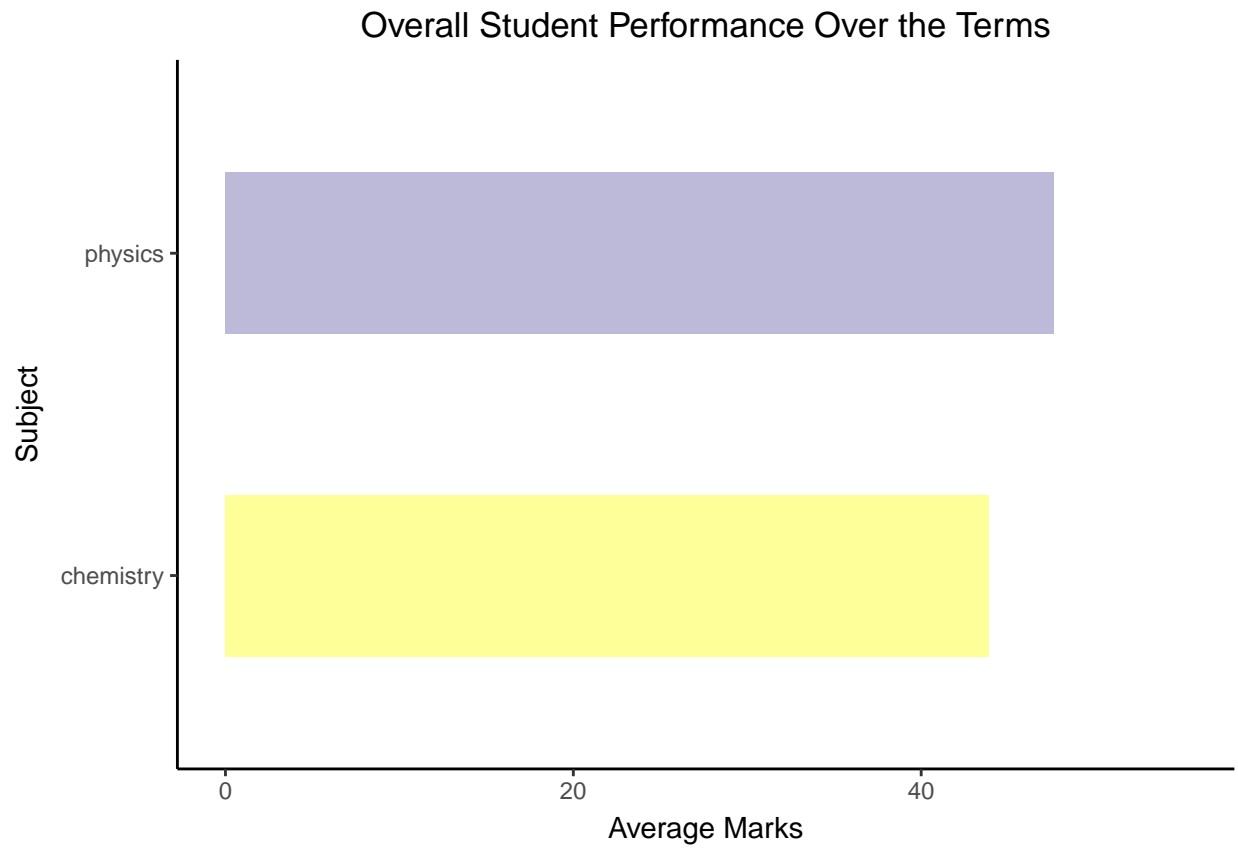


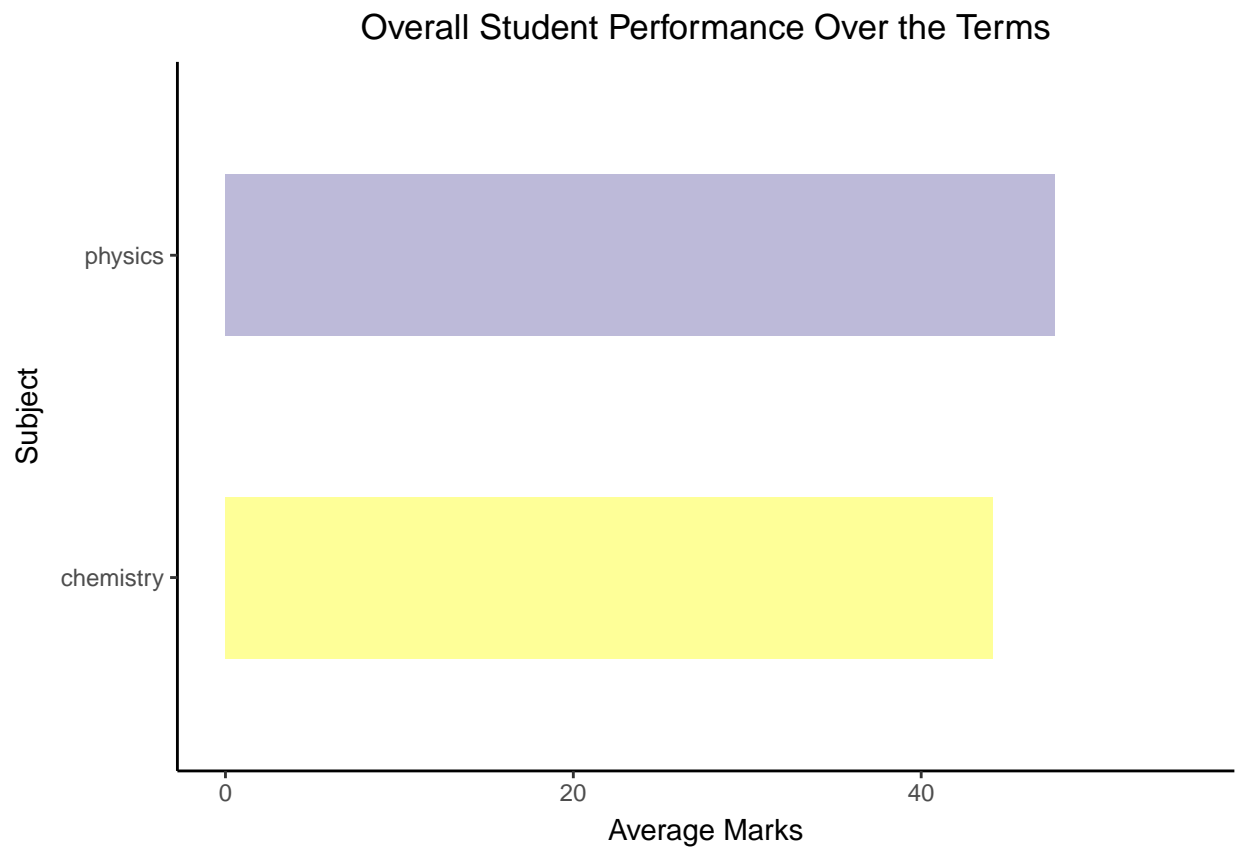


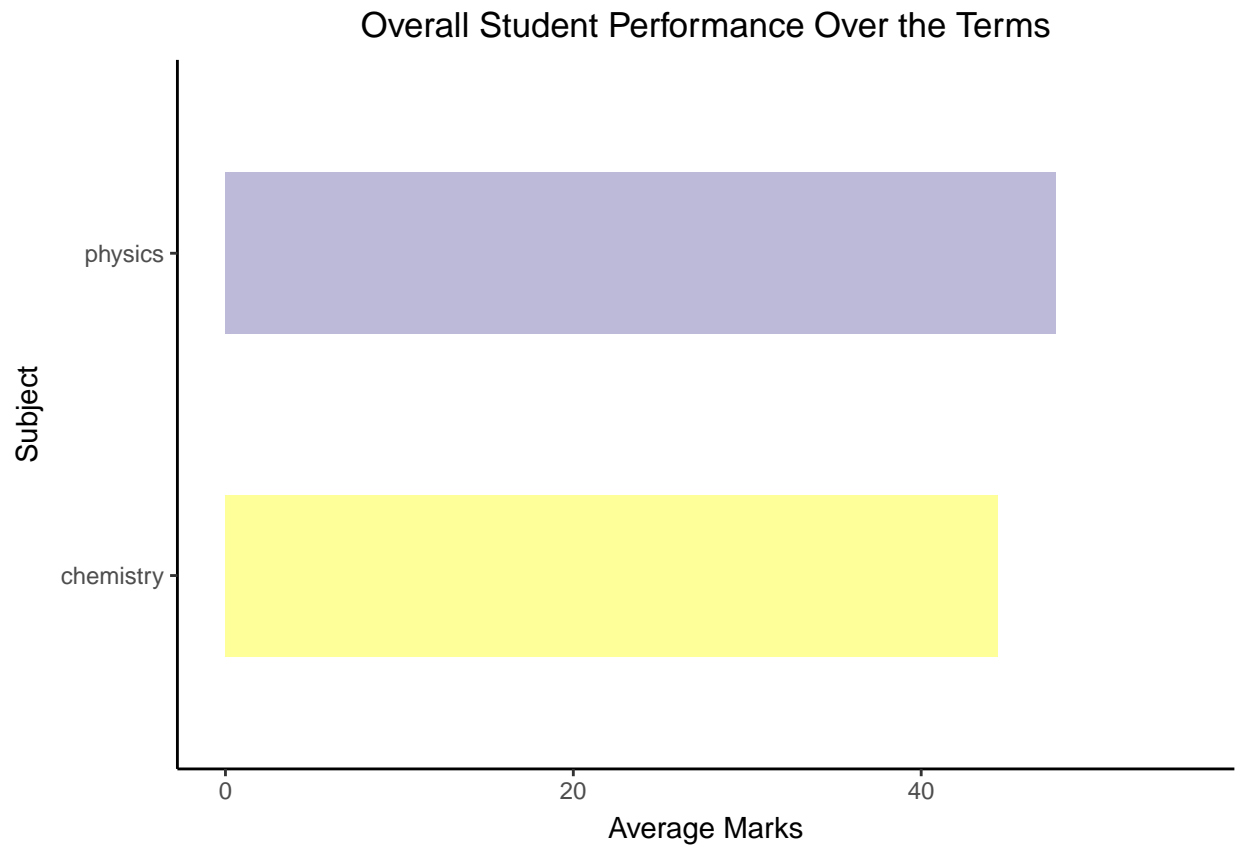


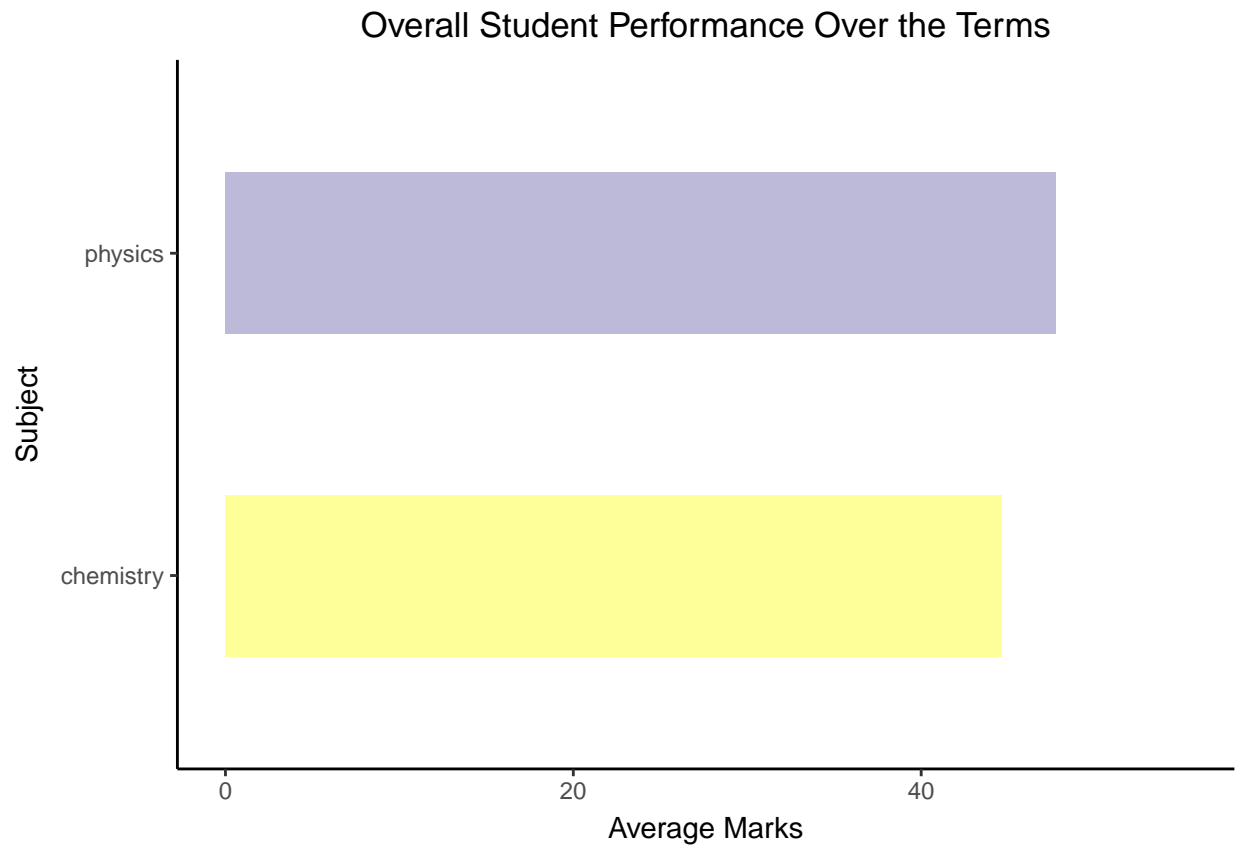


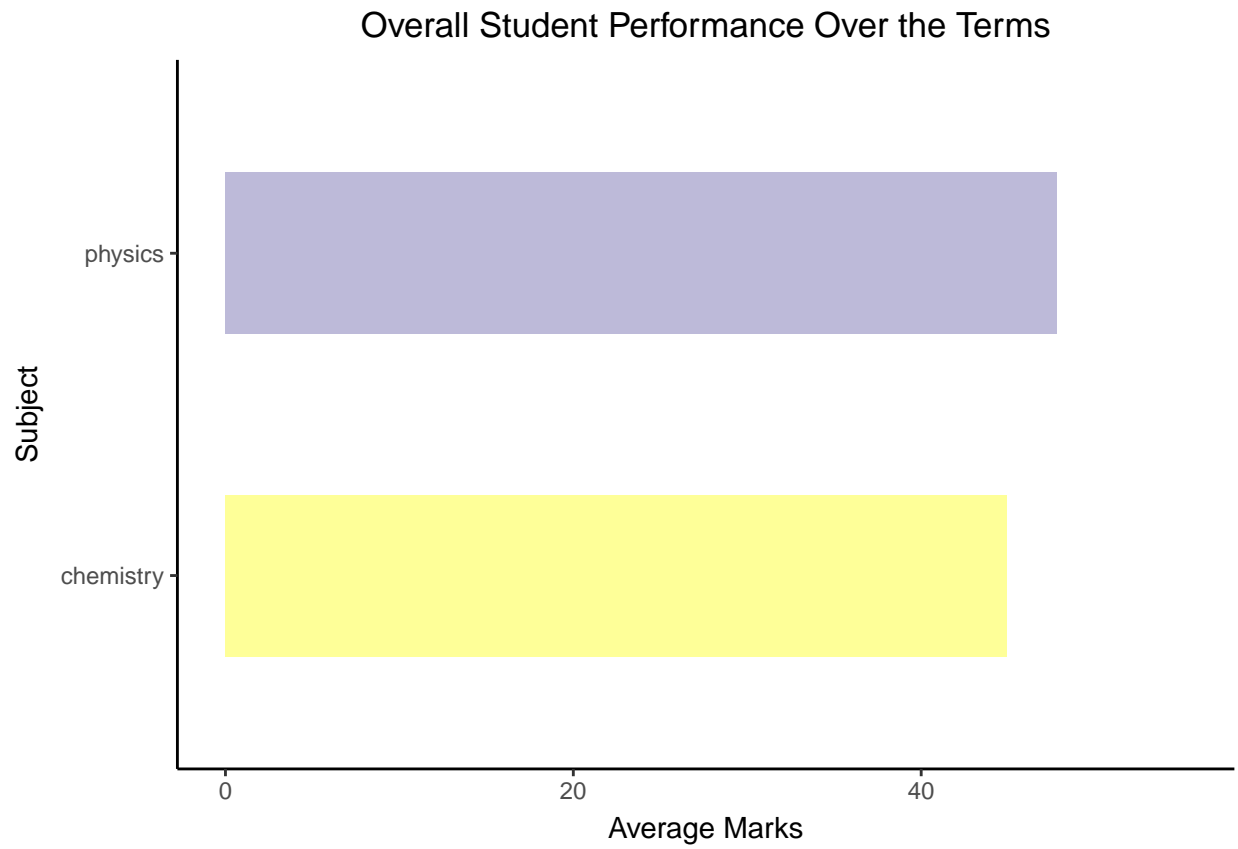


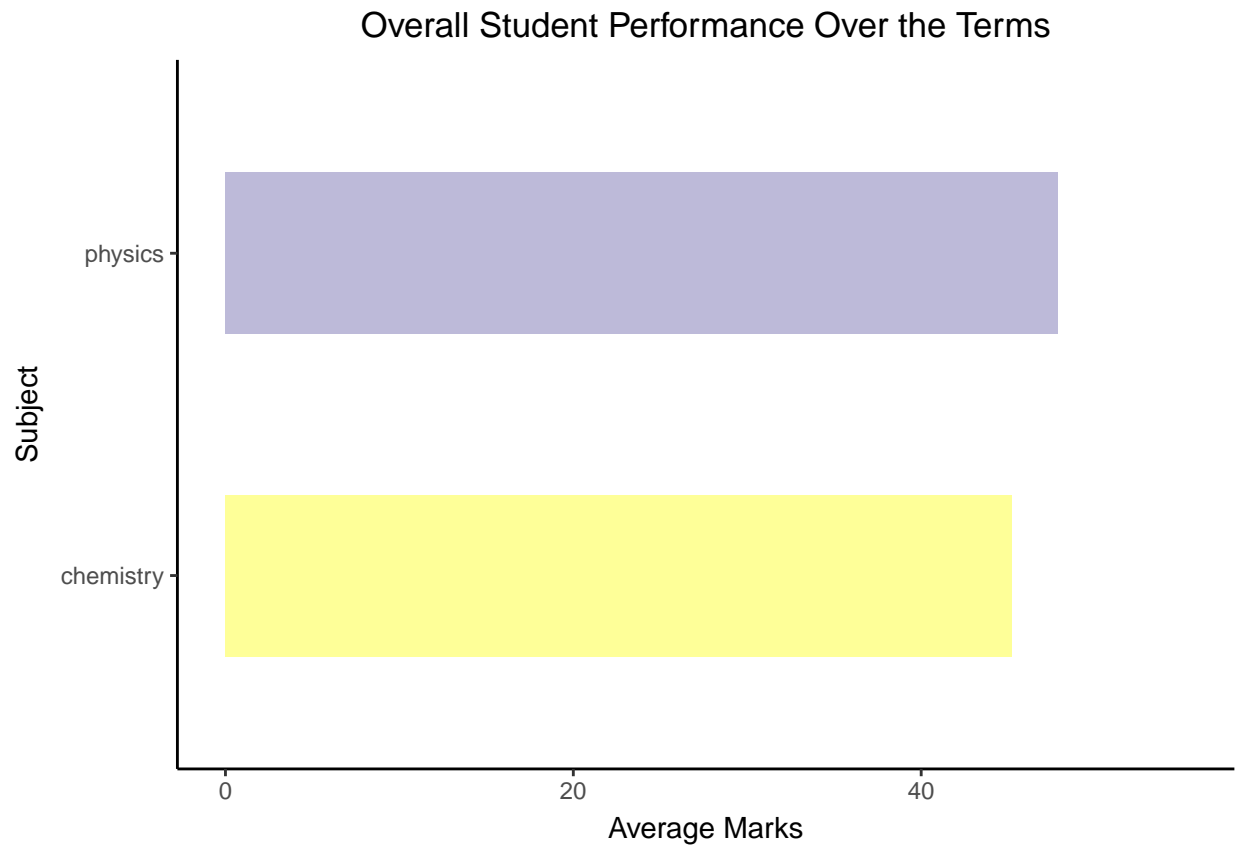


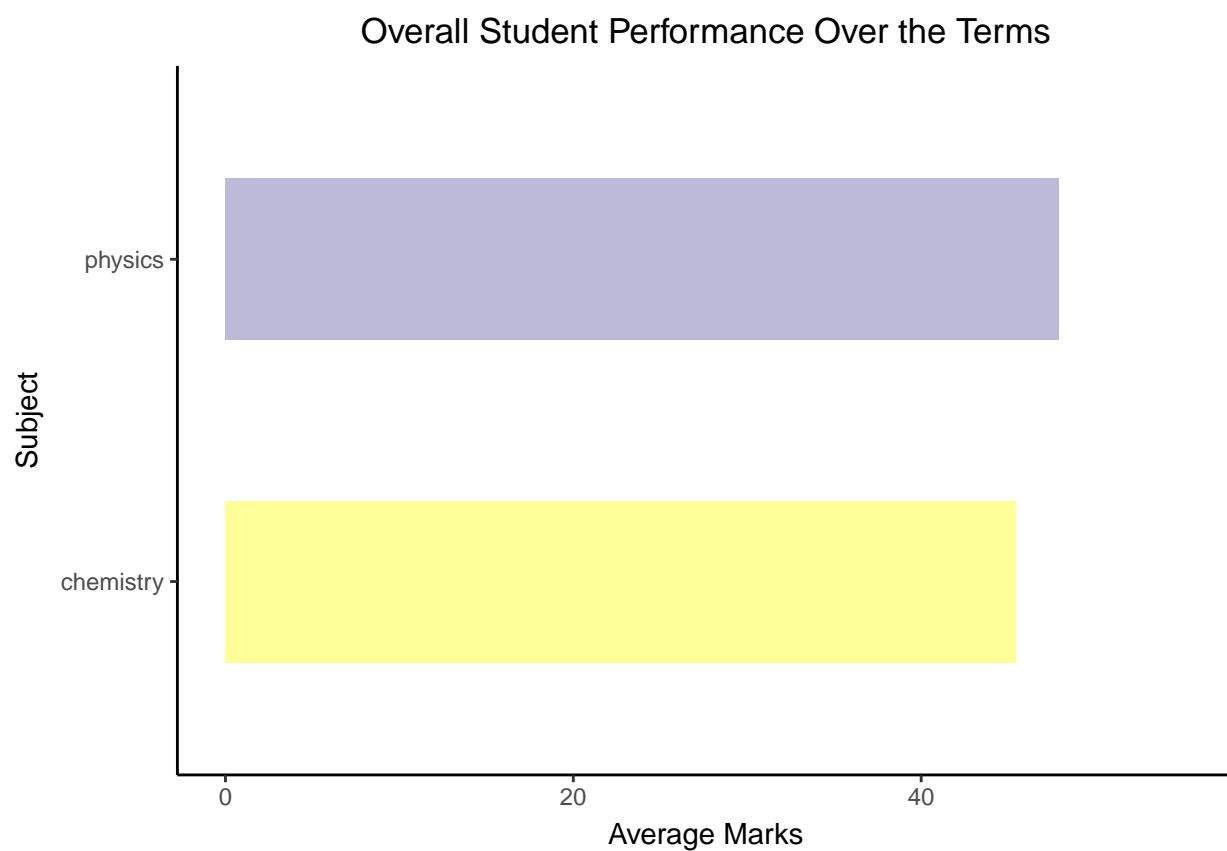


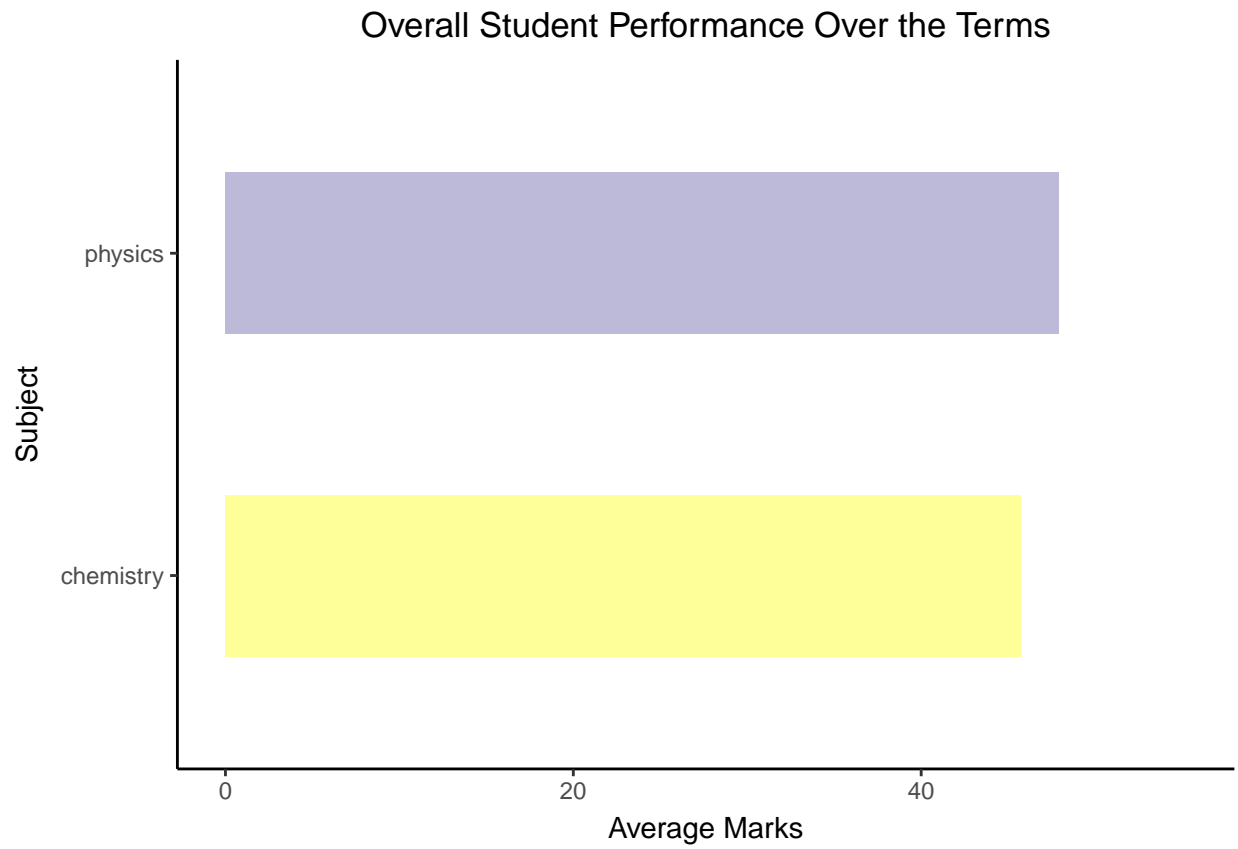


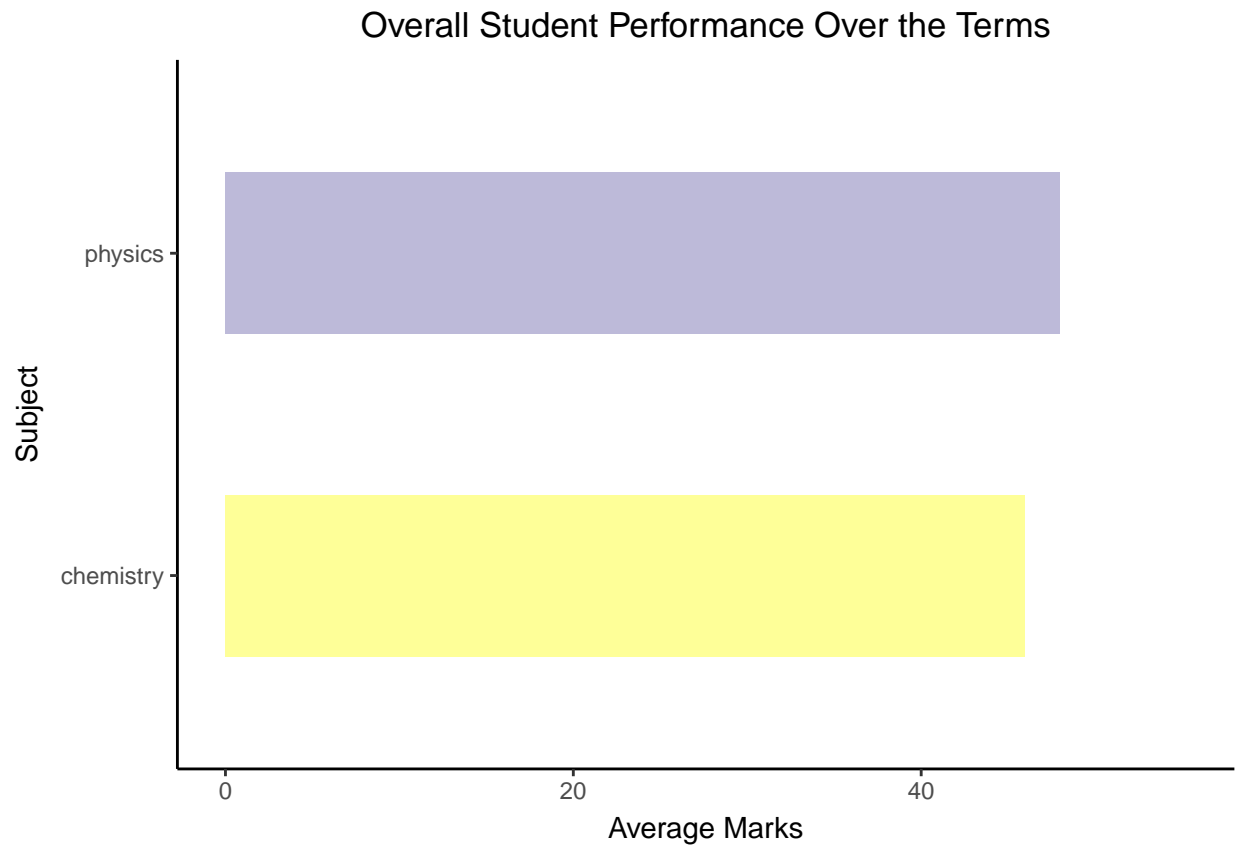




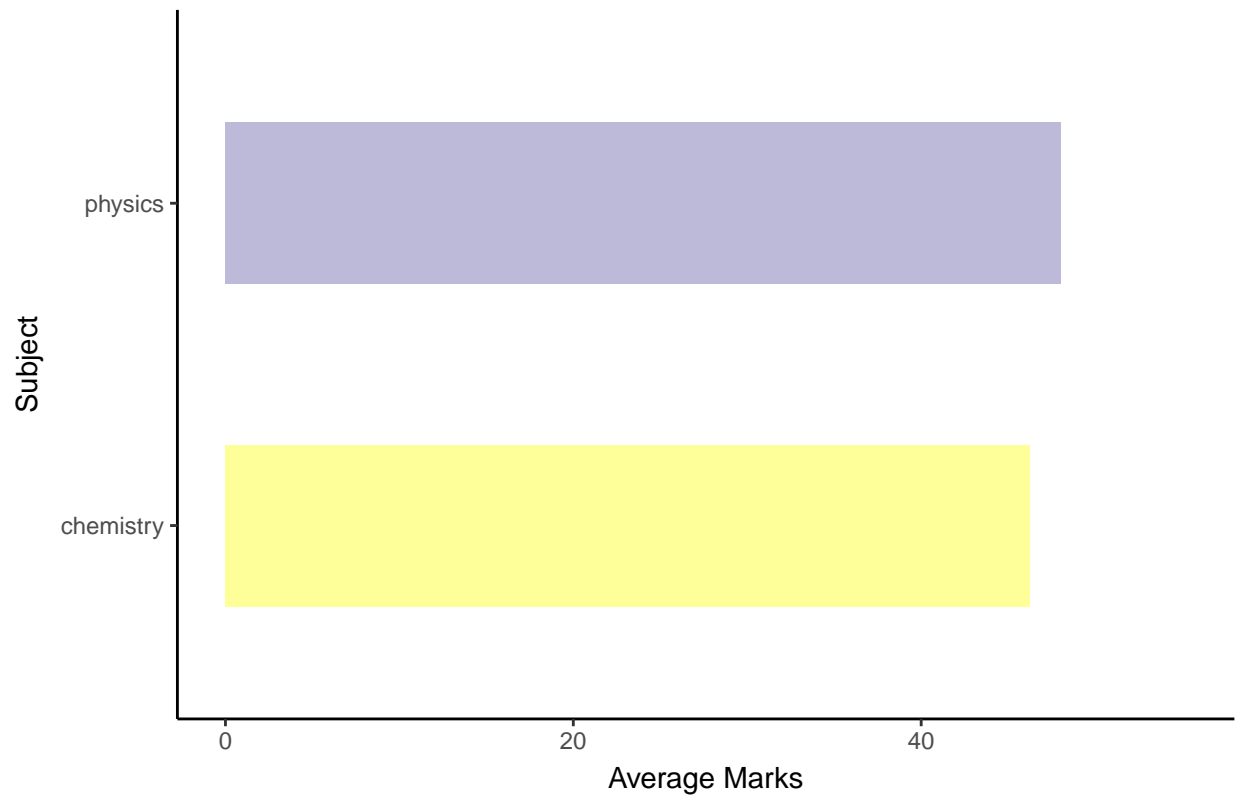


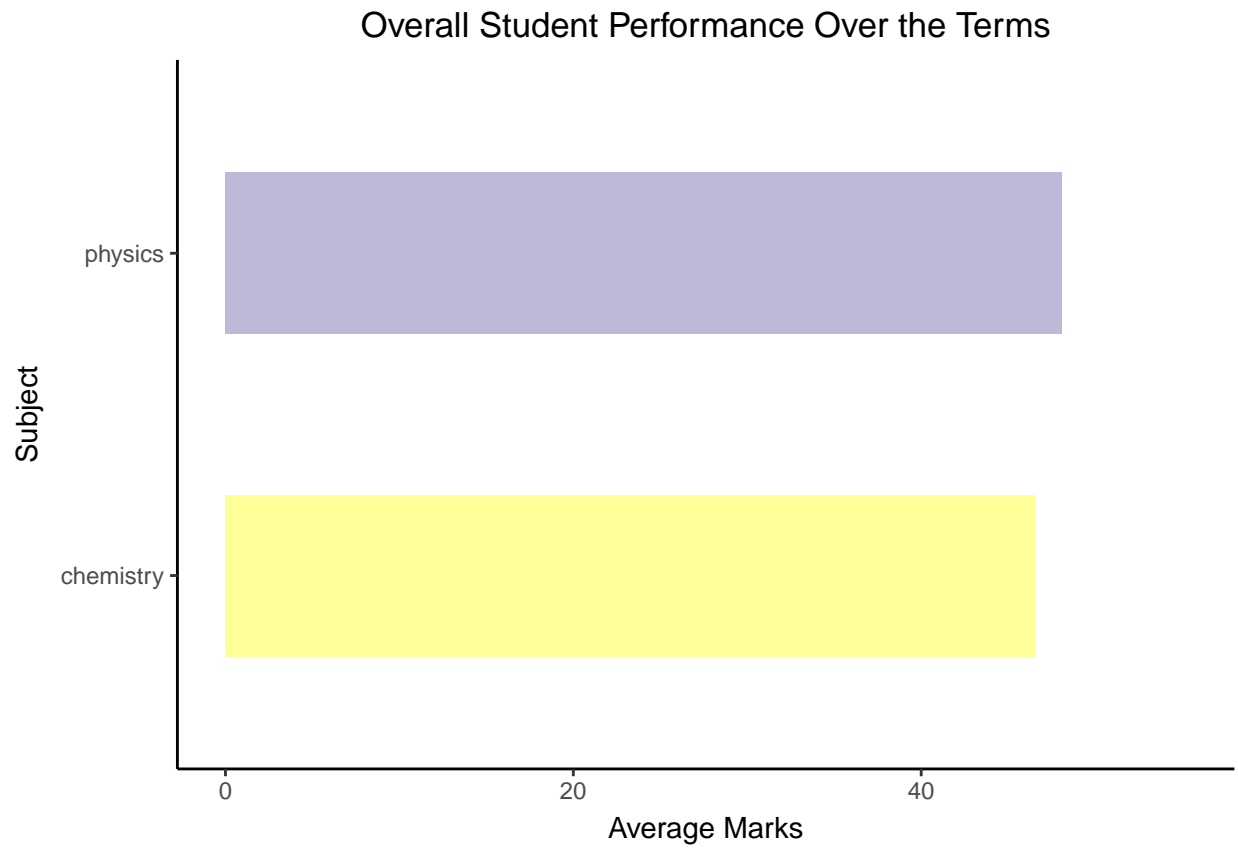


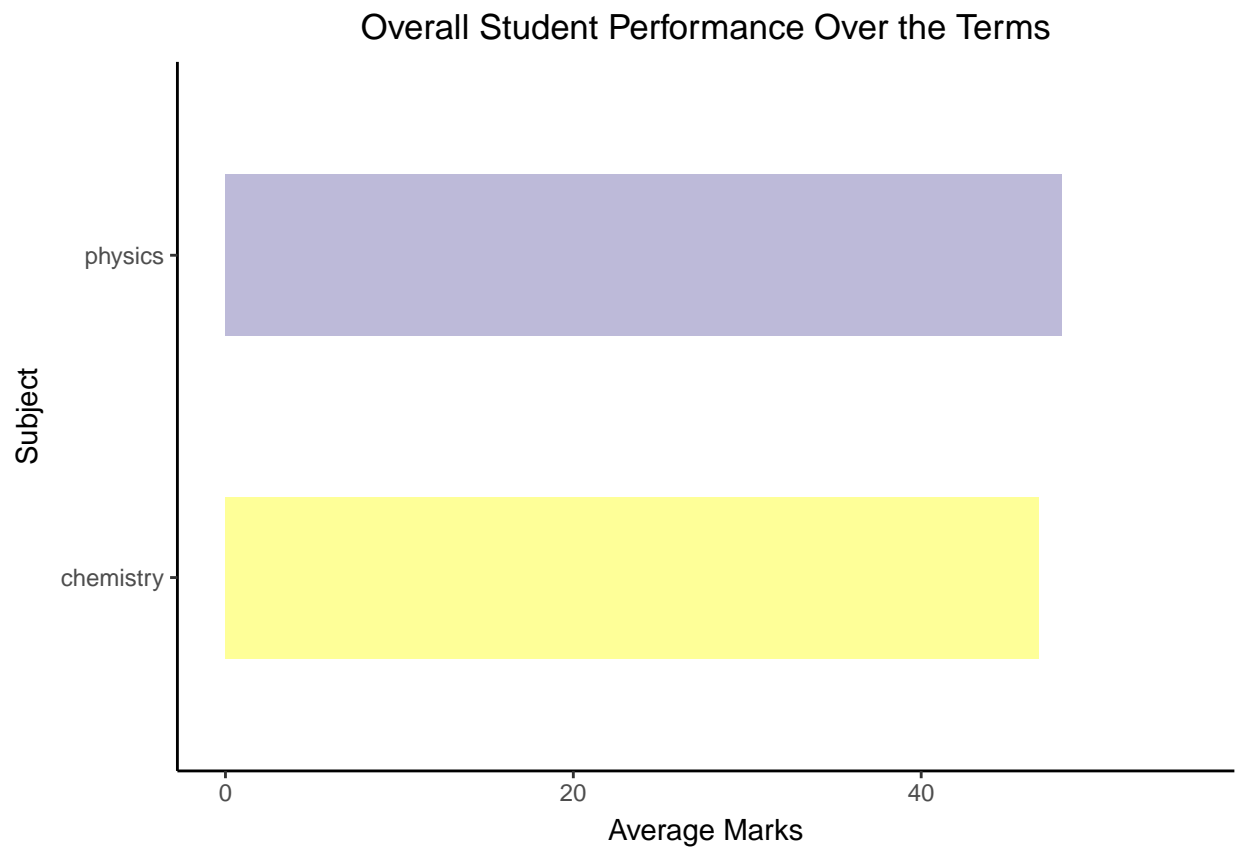


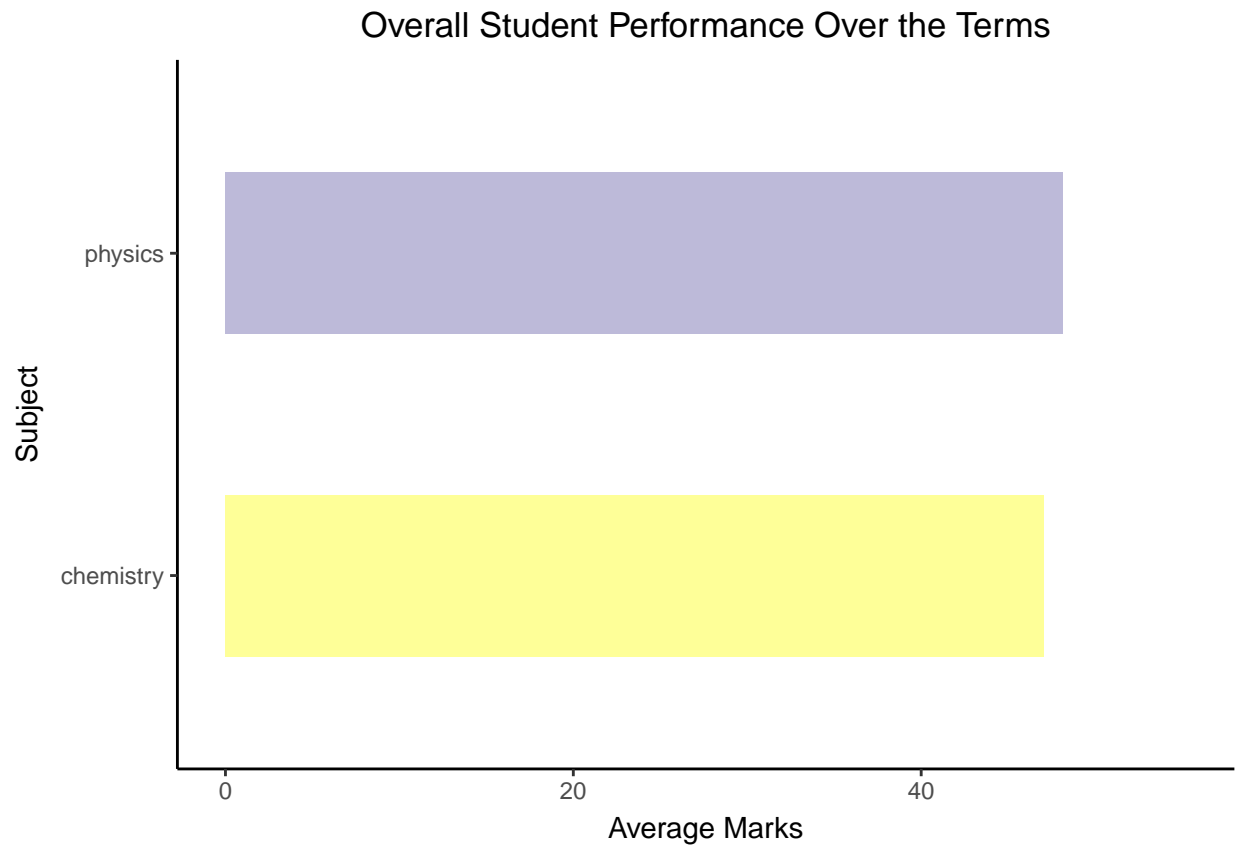


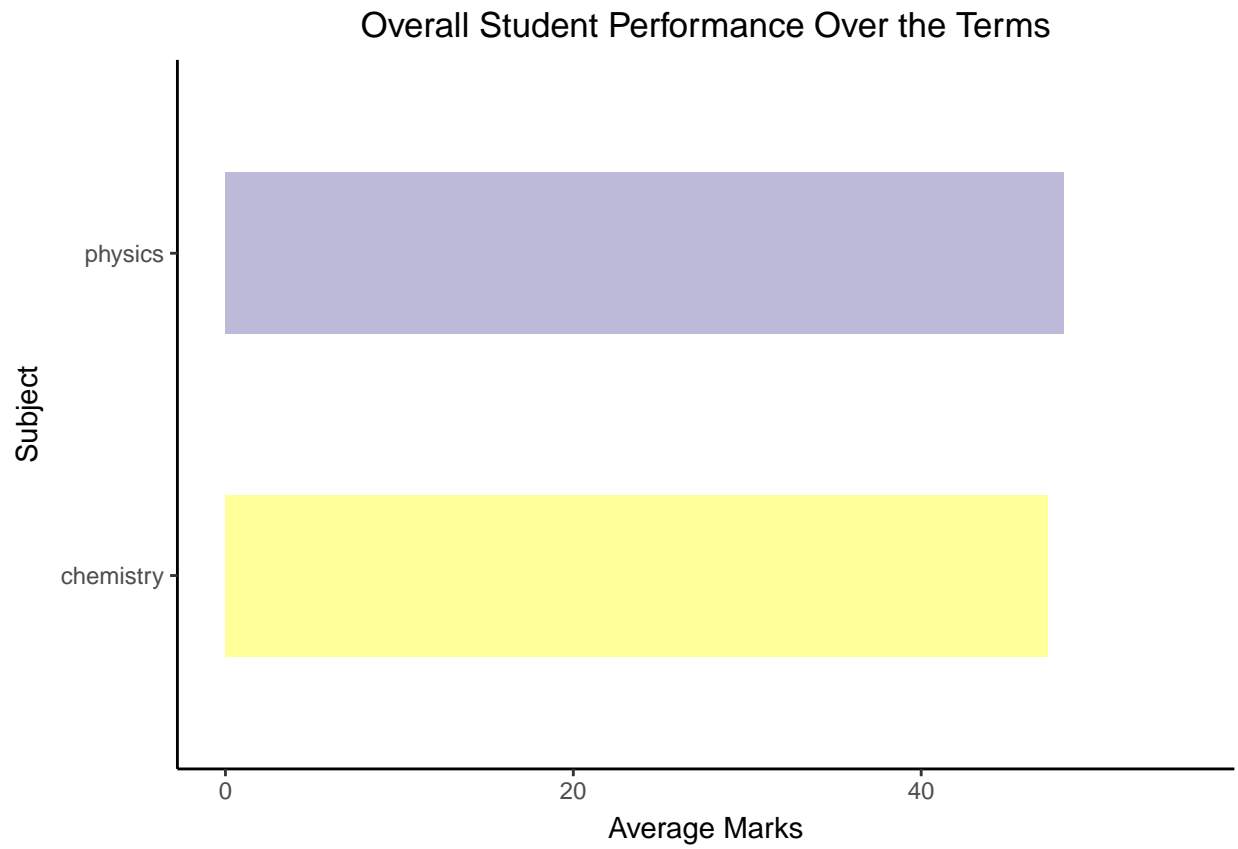
Overall Student Performance Over the Terms

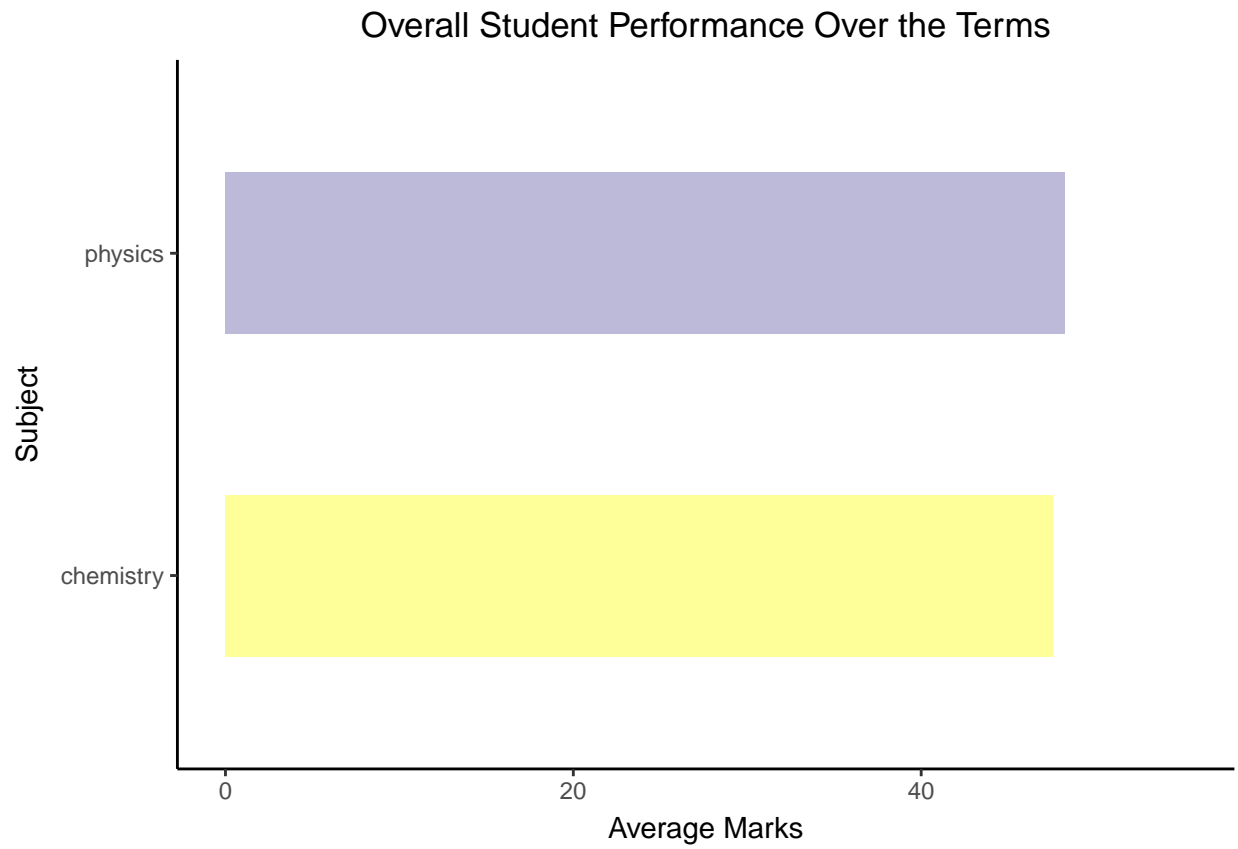


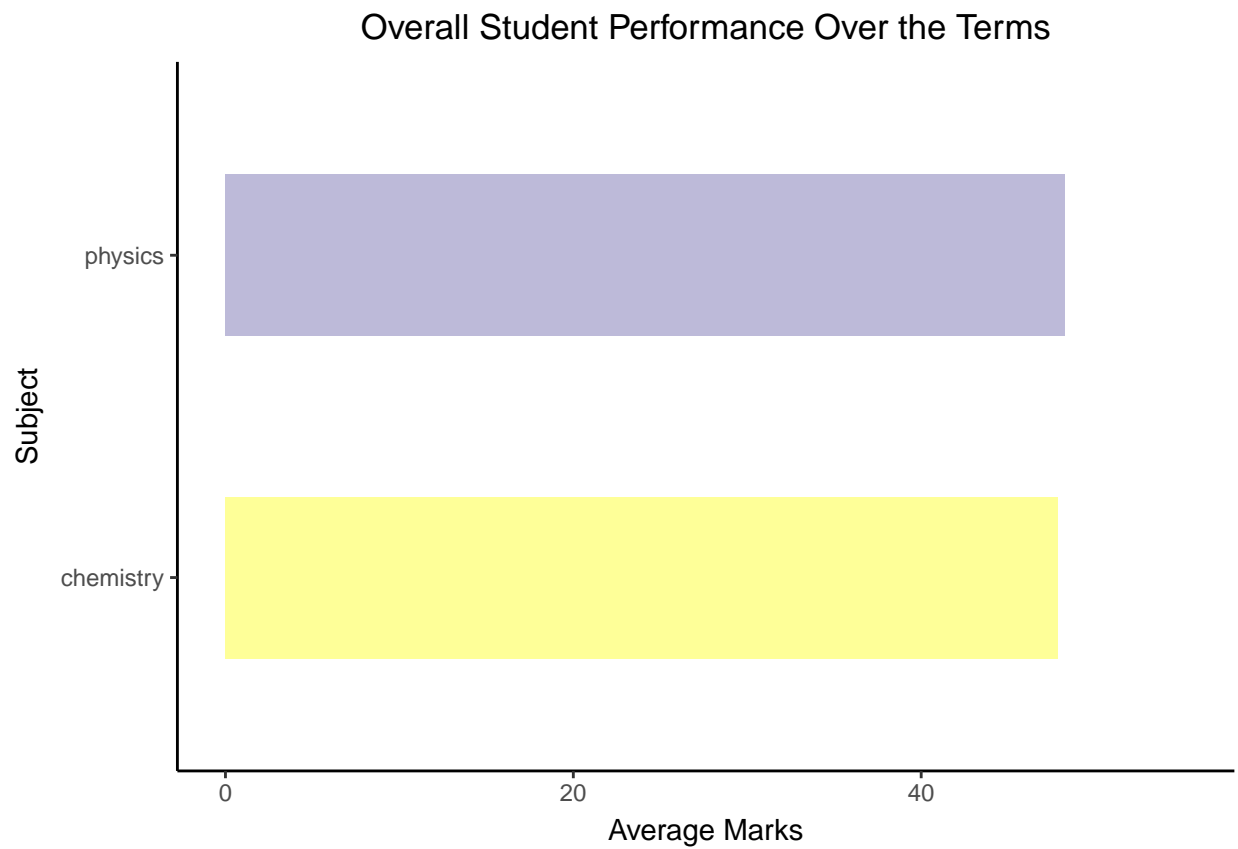


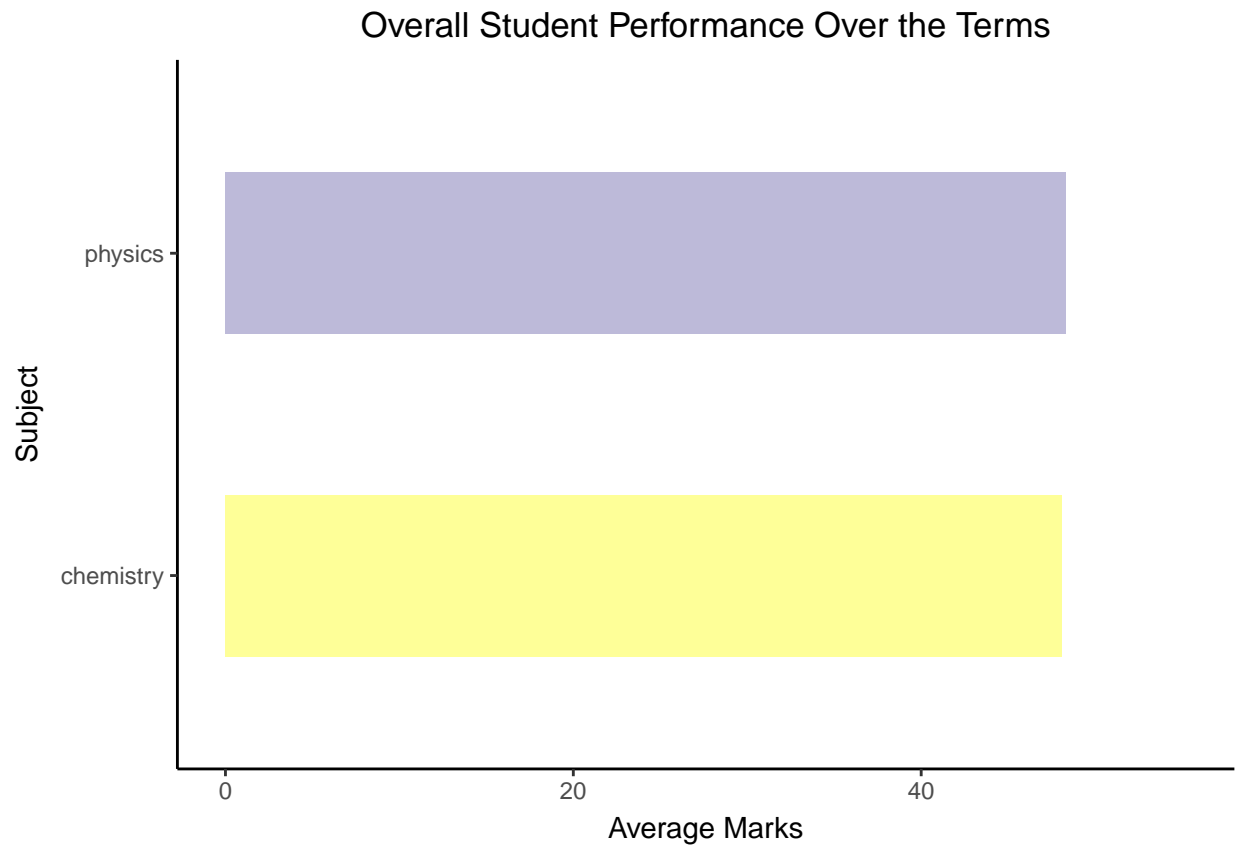


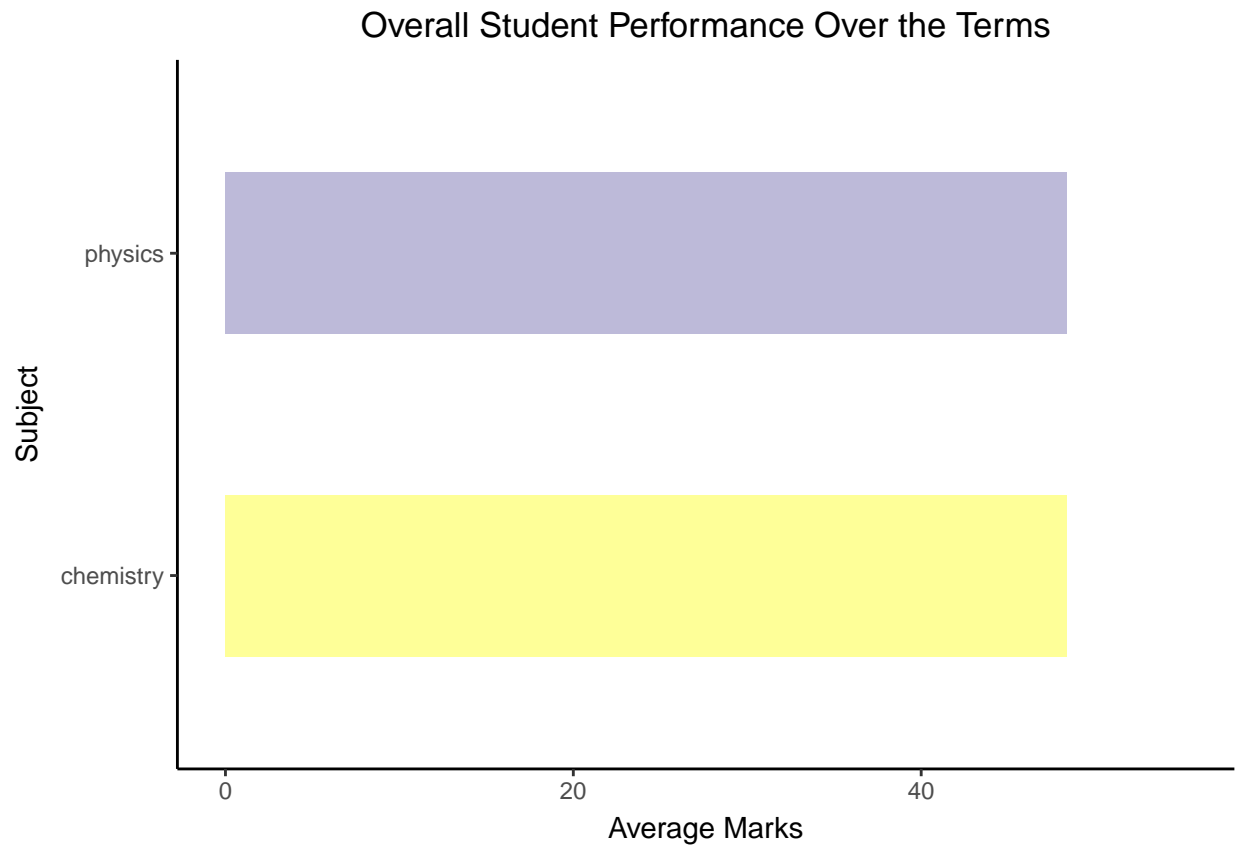


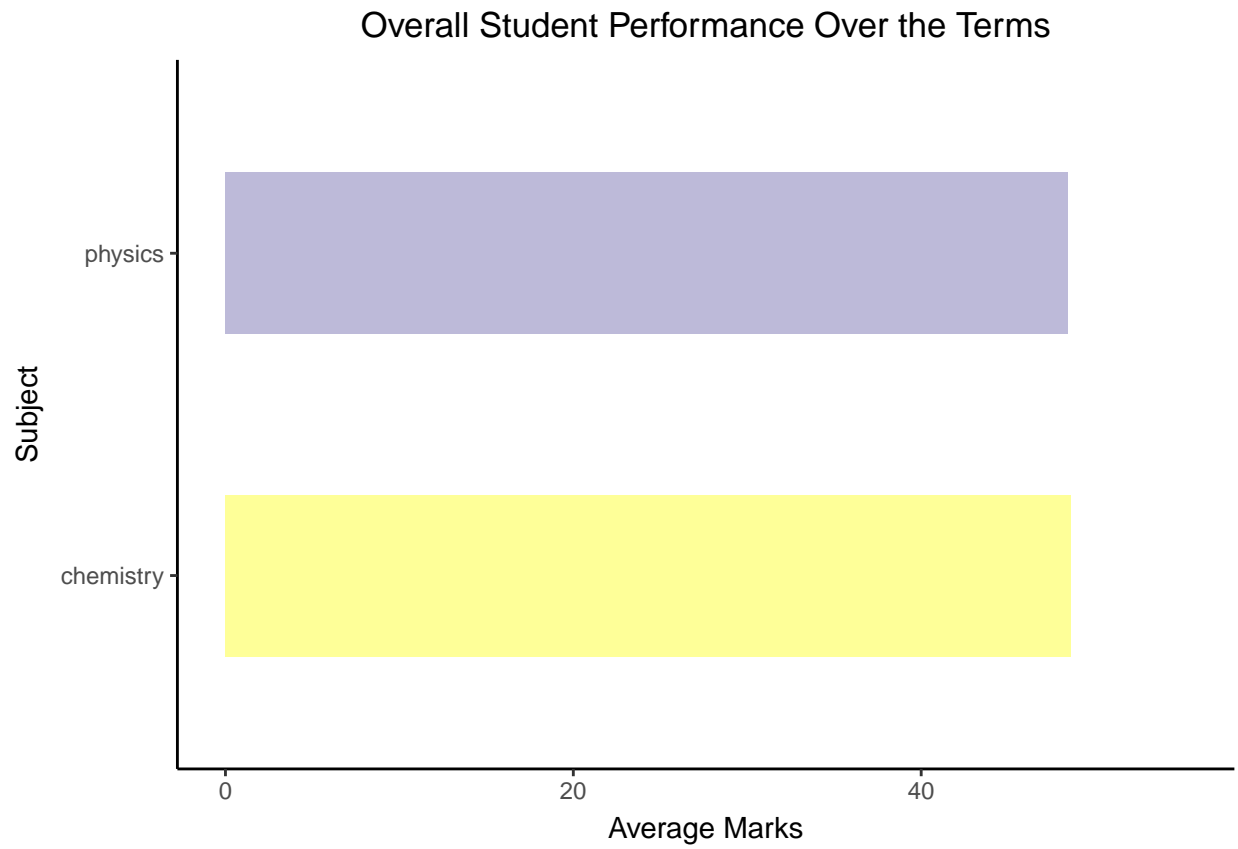




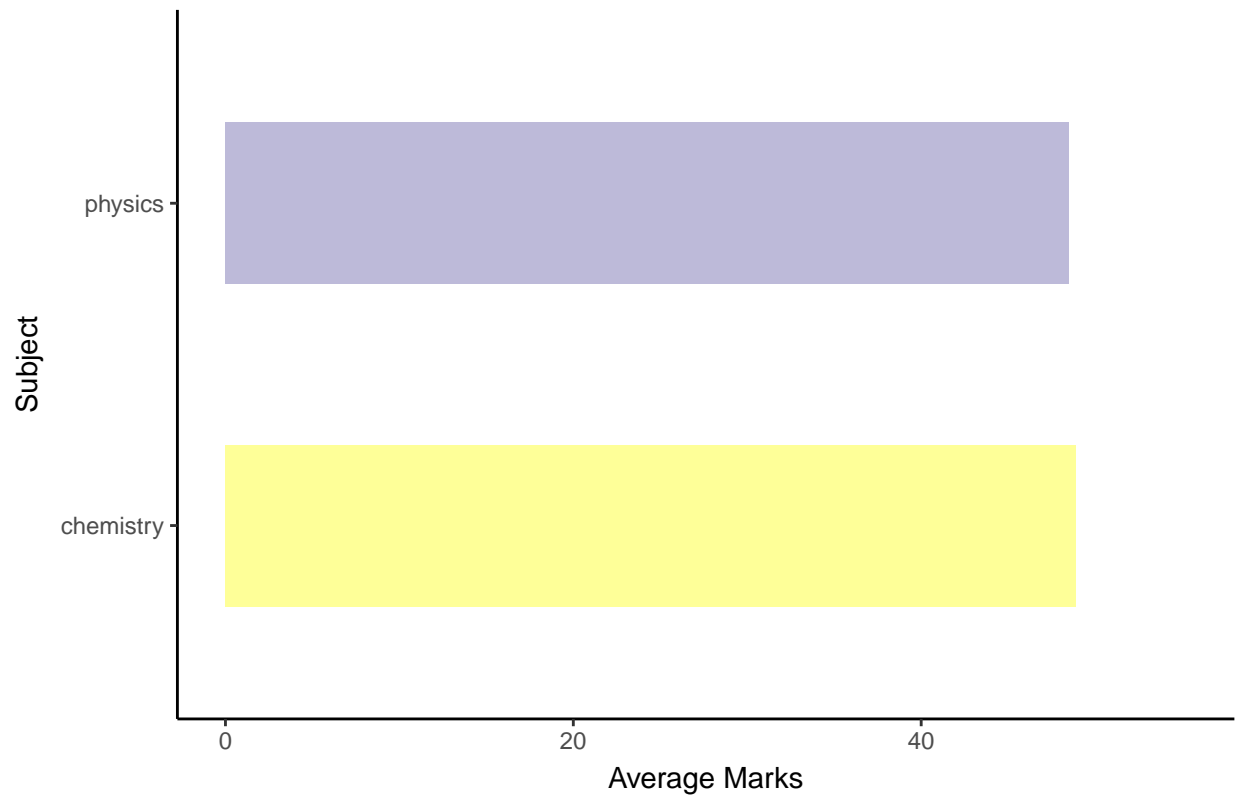


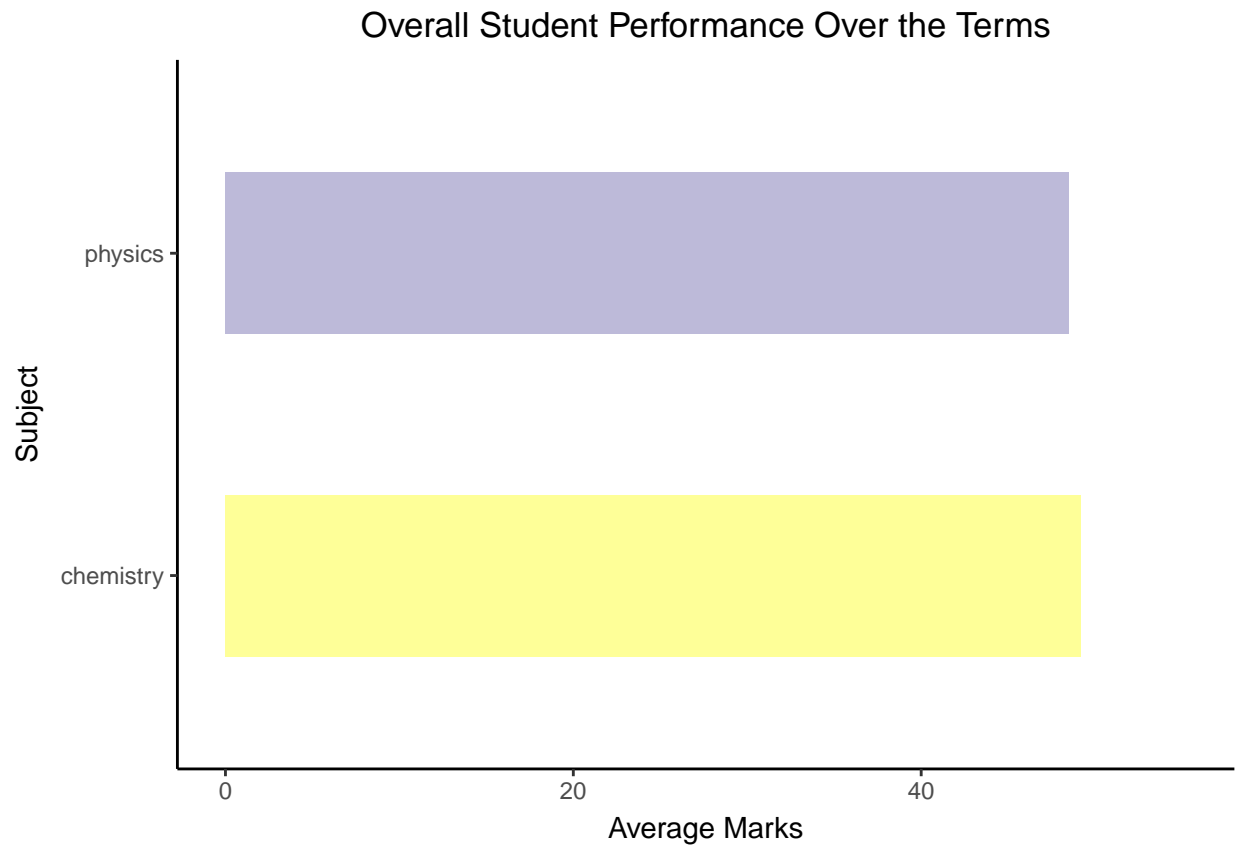


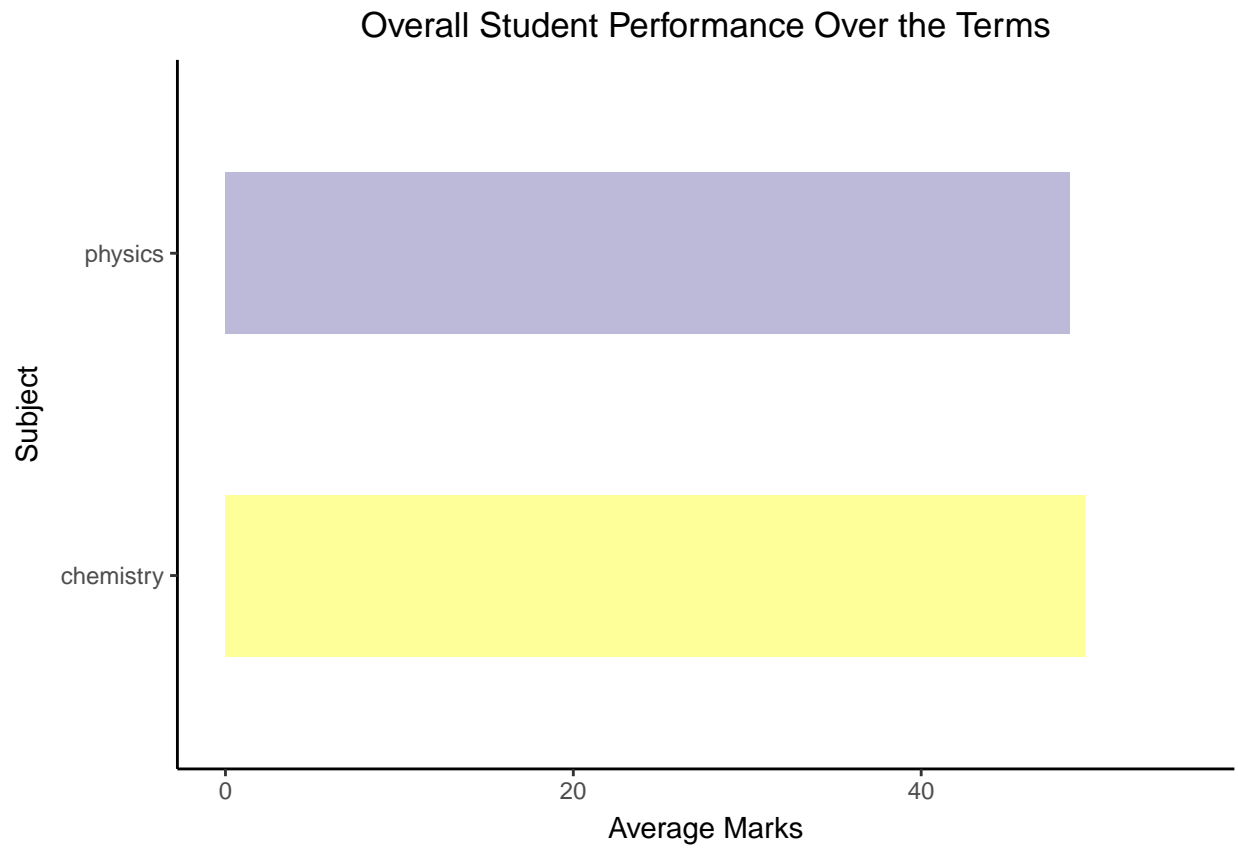


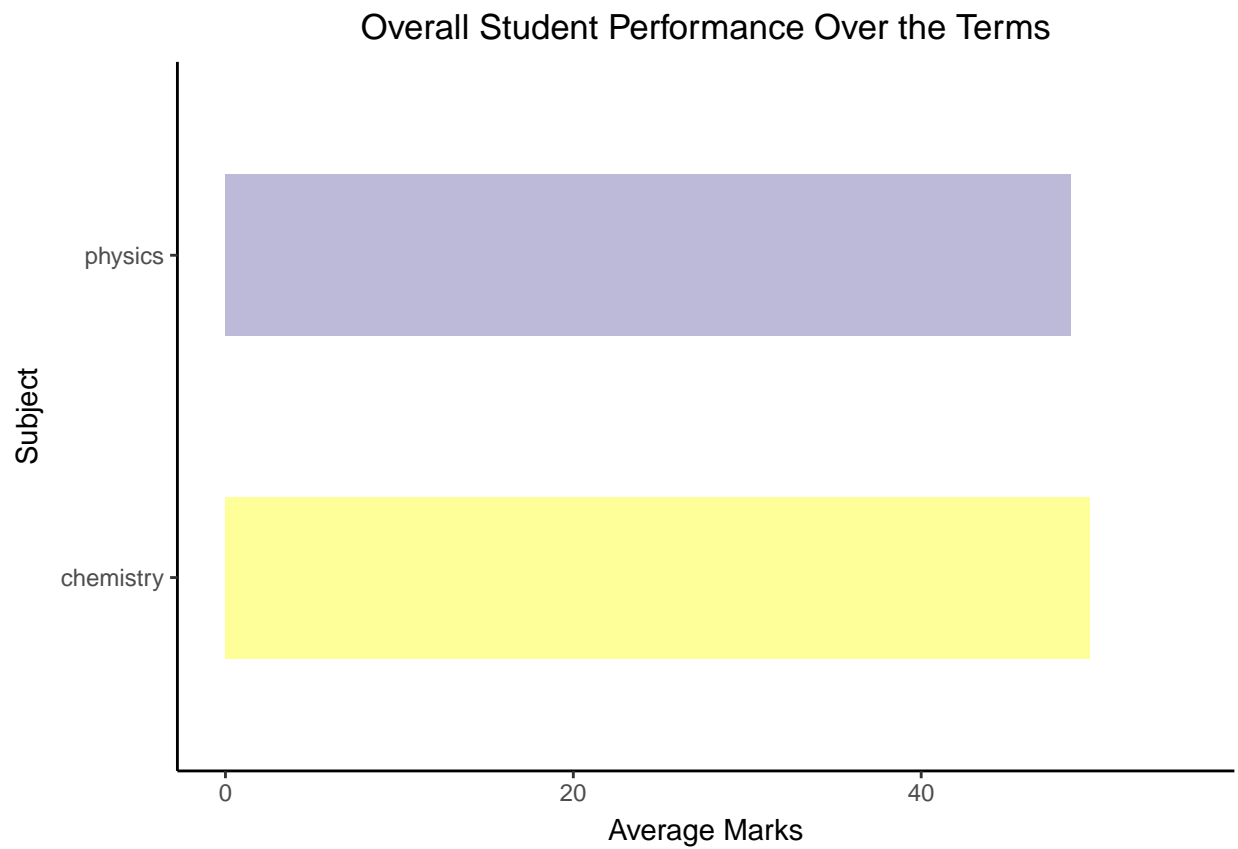


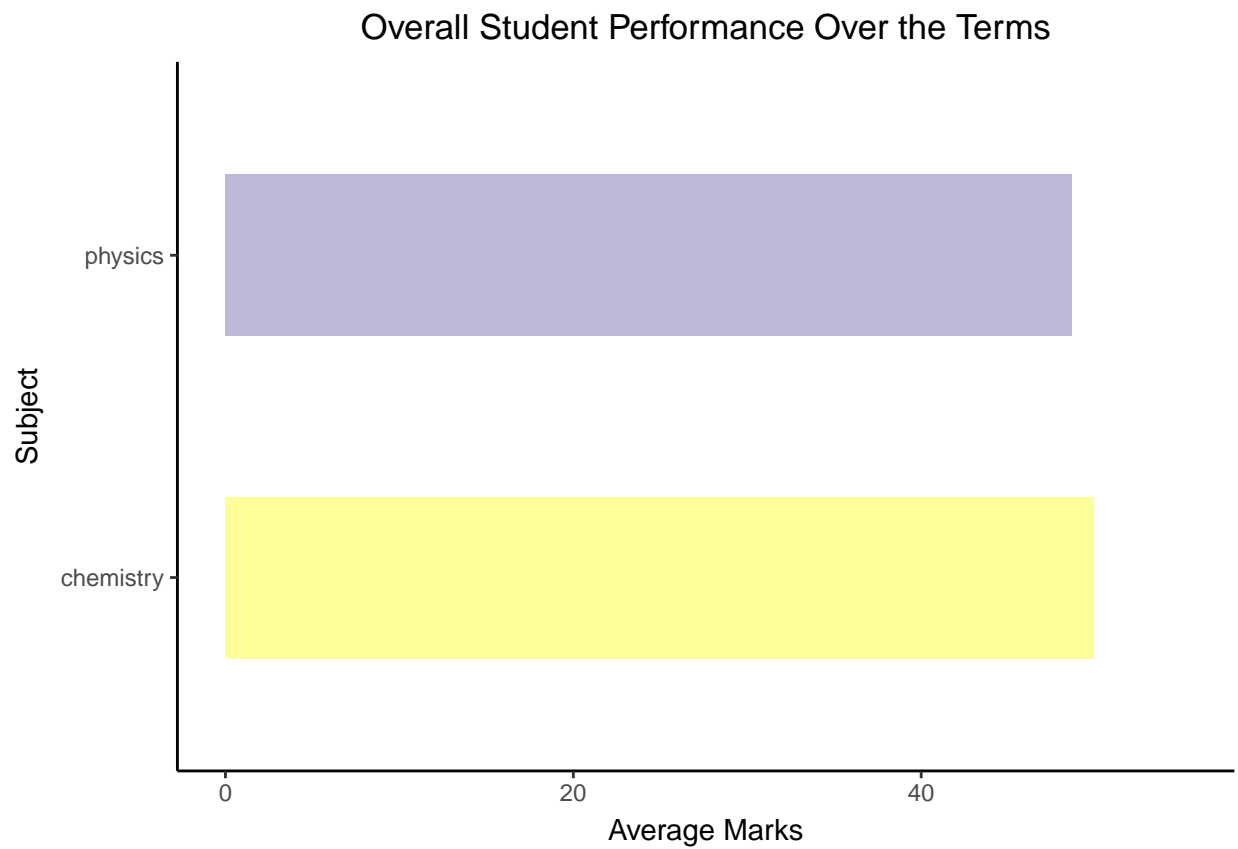
Overall Student Performance Over the Terms



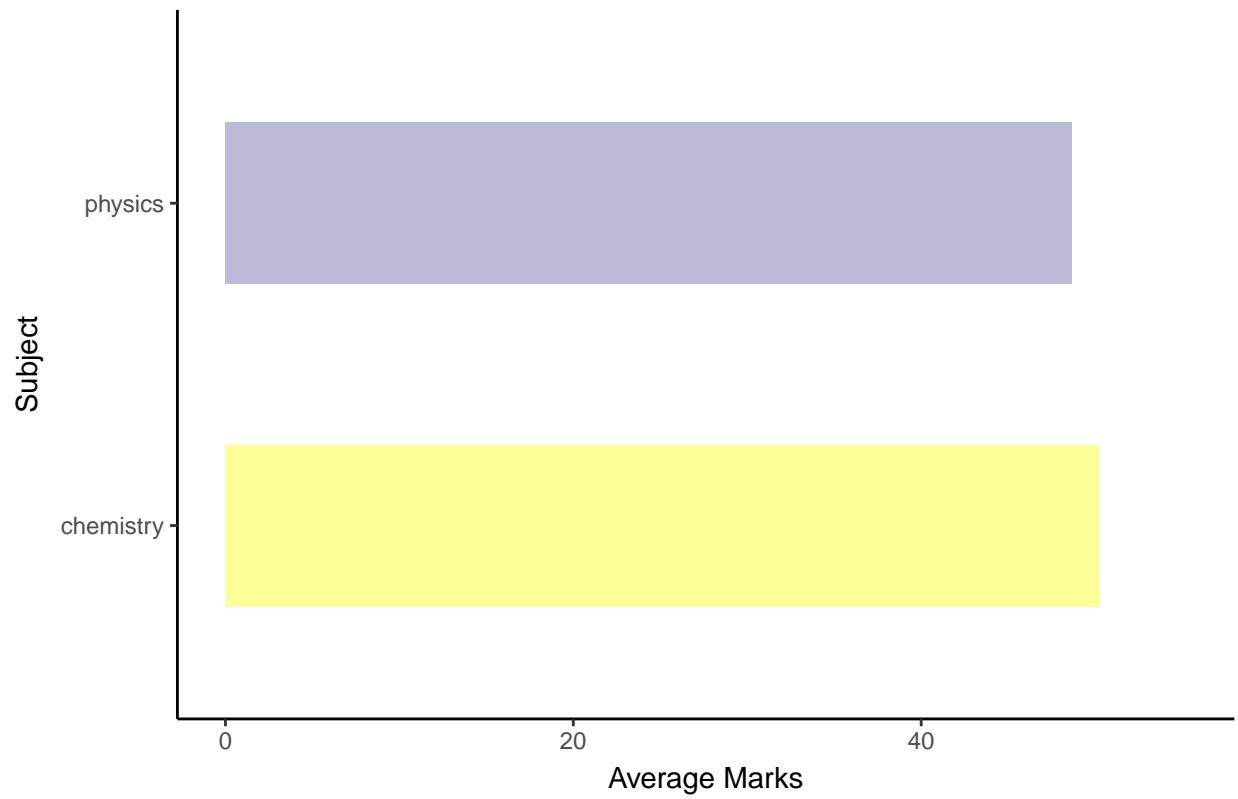


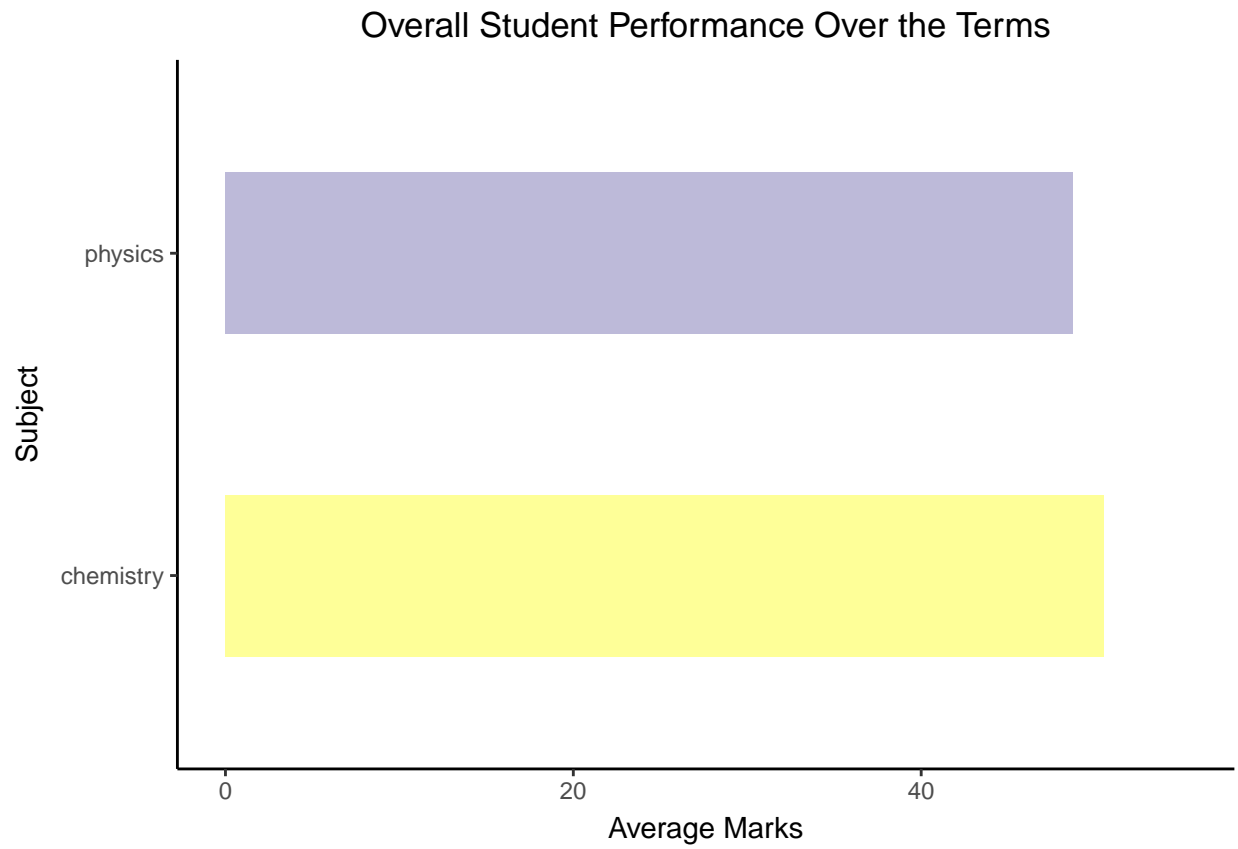


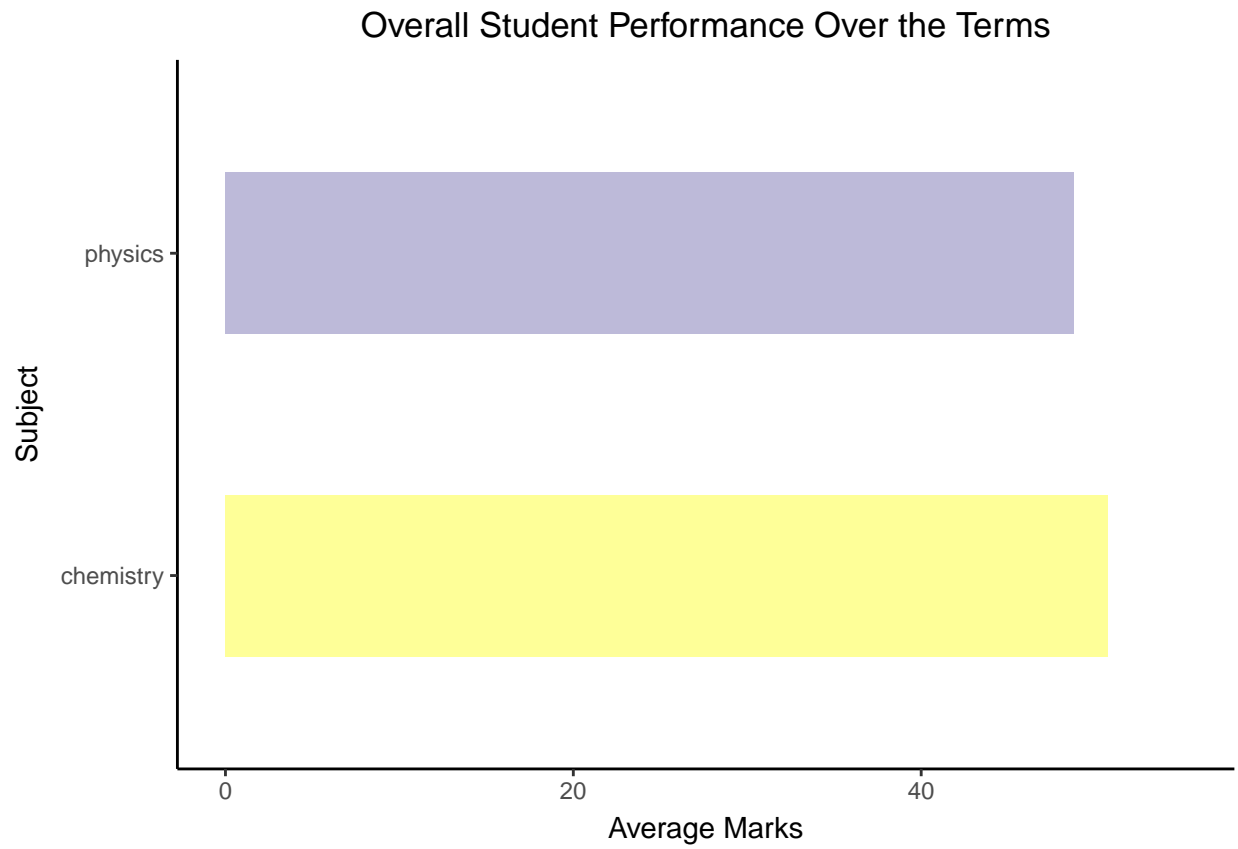


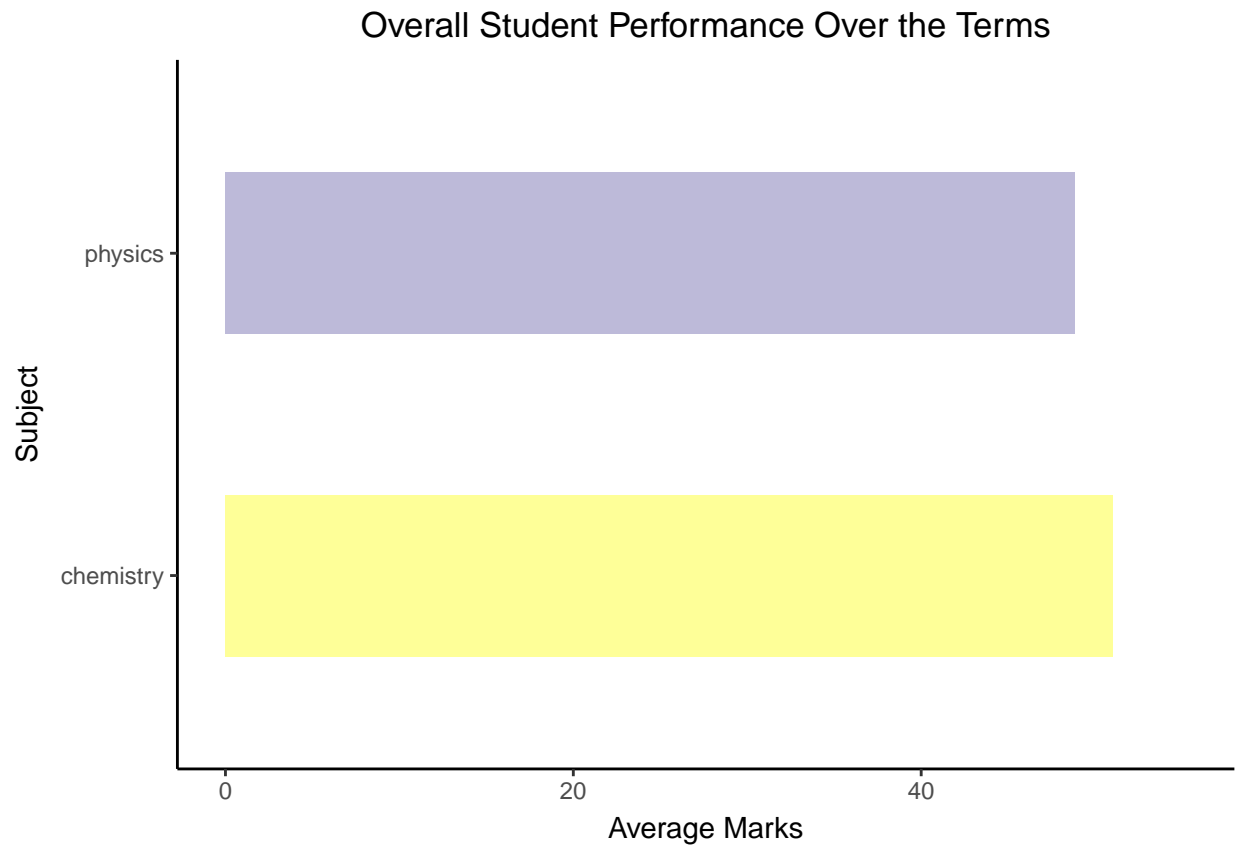


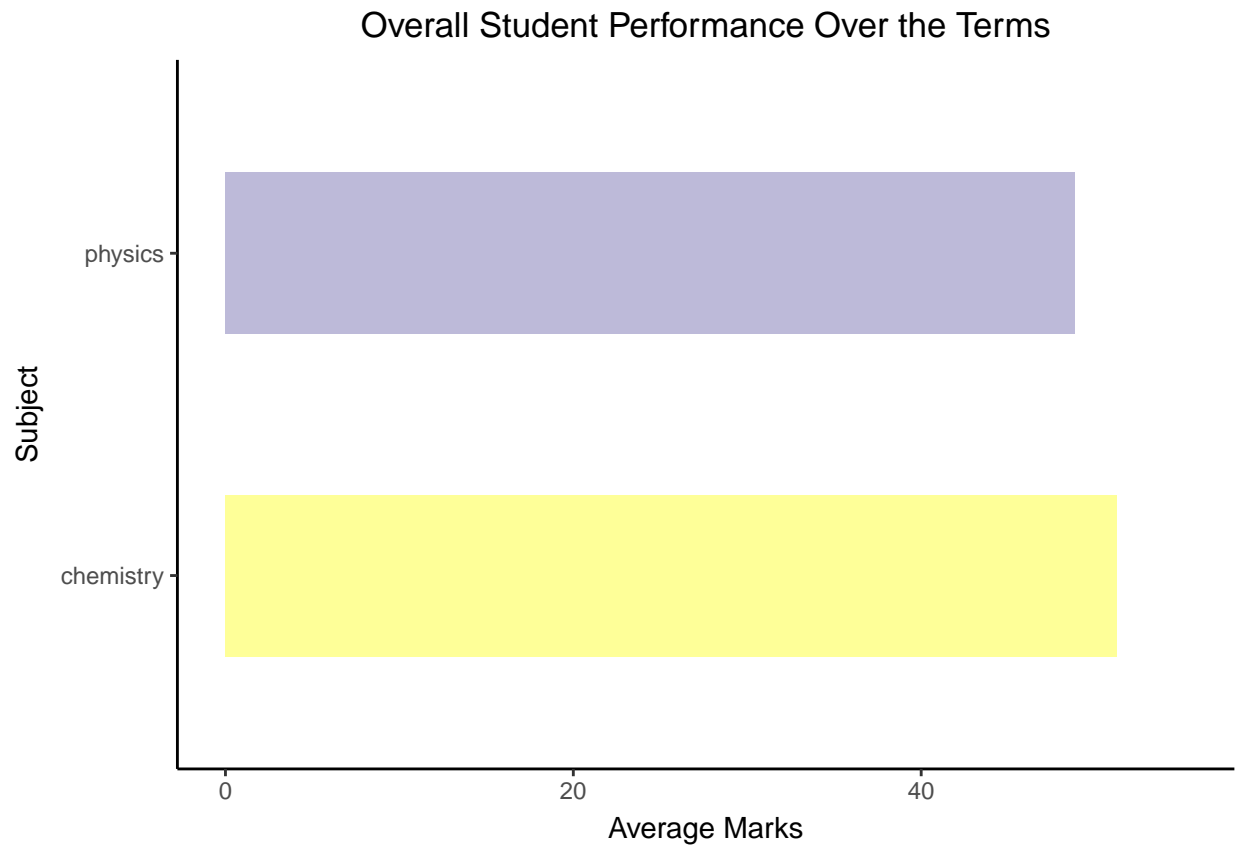
Overall Student Performance Over the Terms



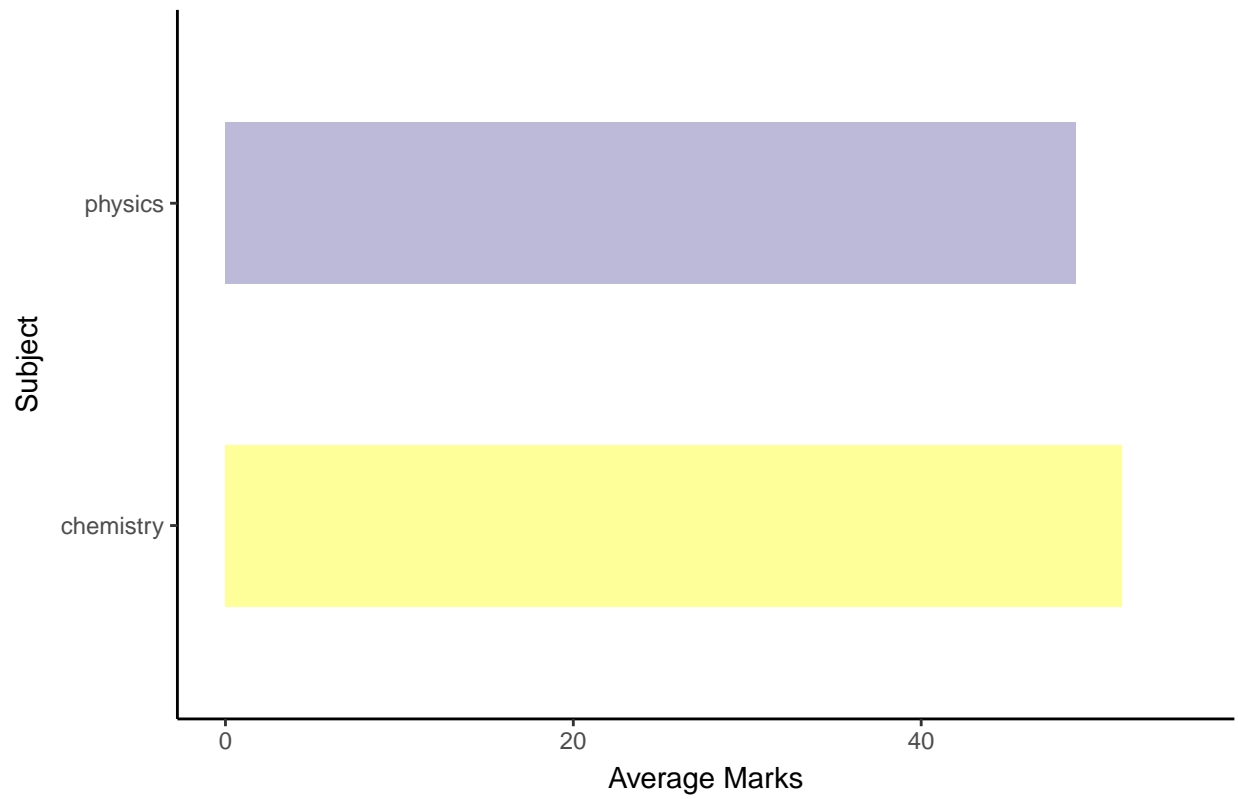




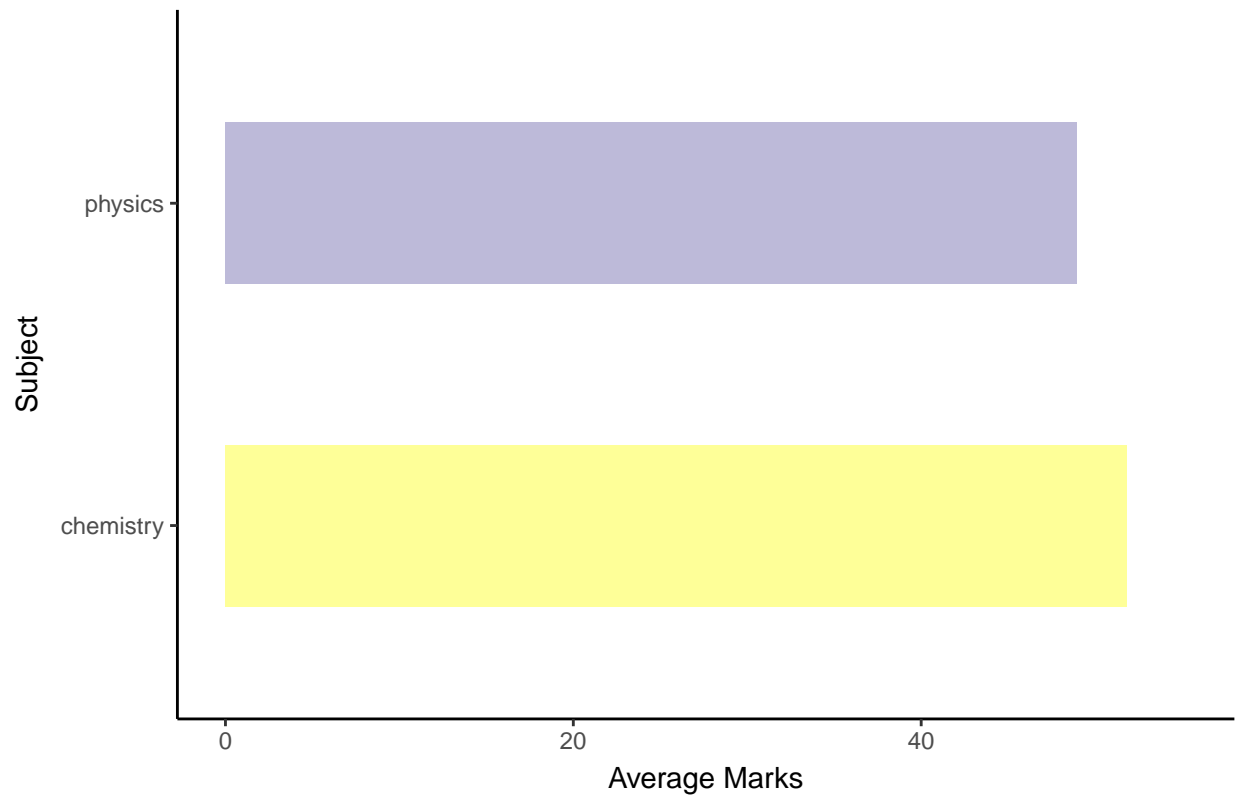


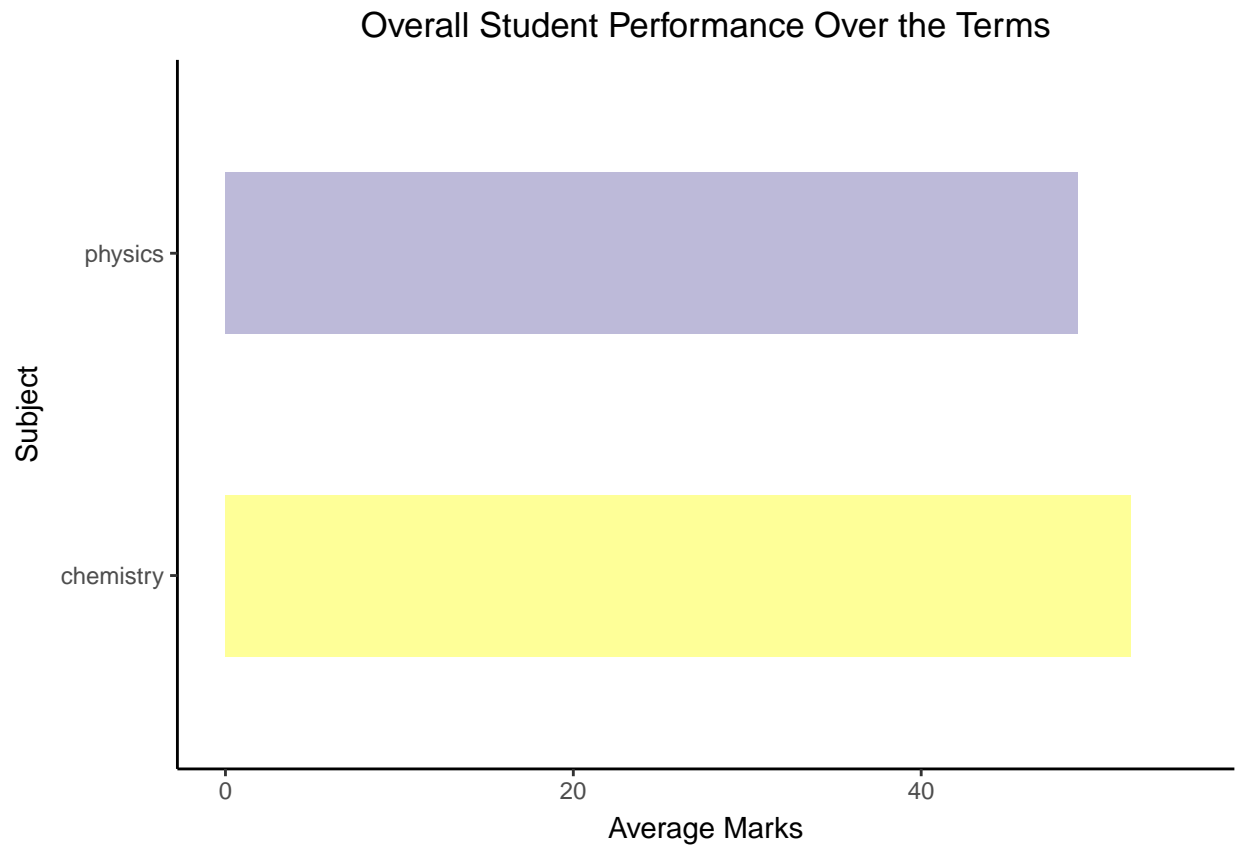


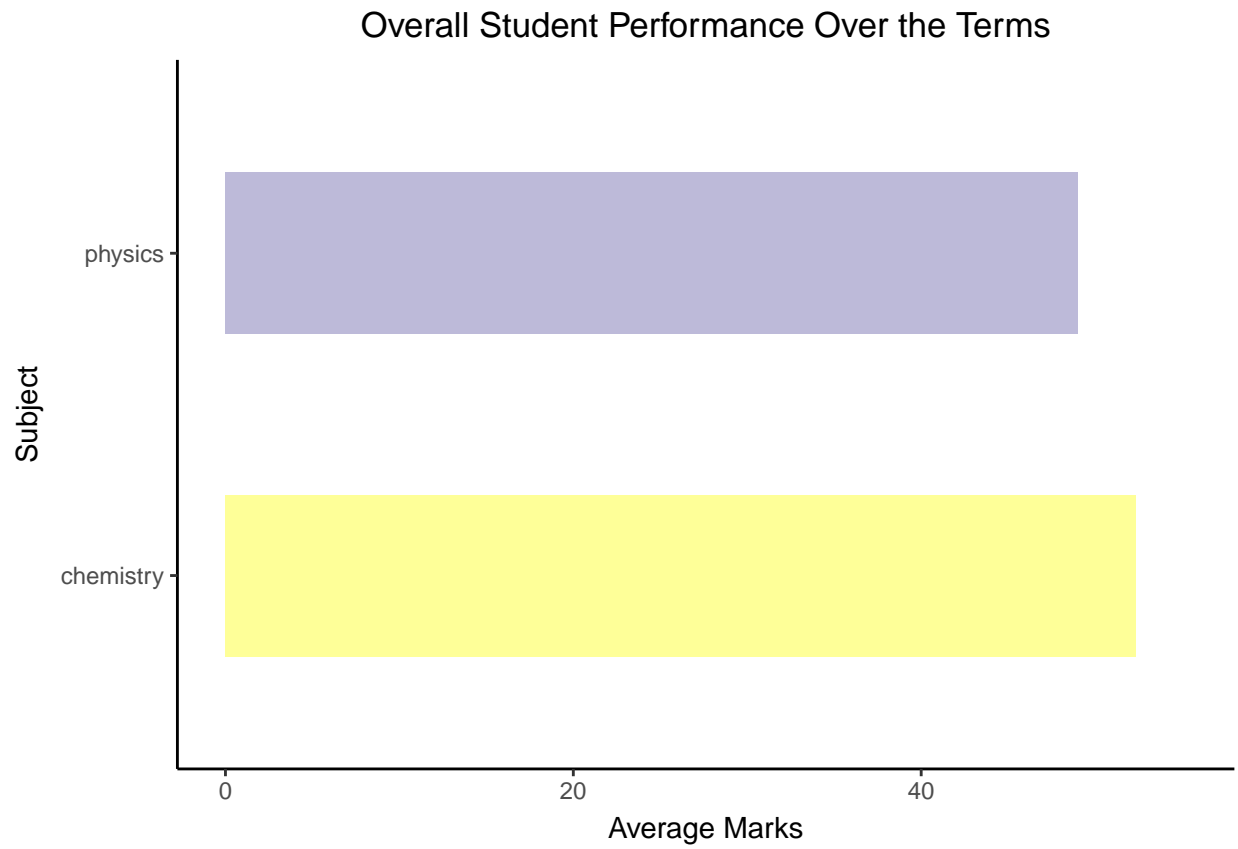
Overall Student Performance Over the Terms

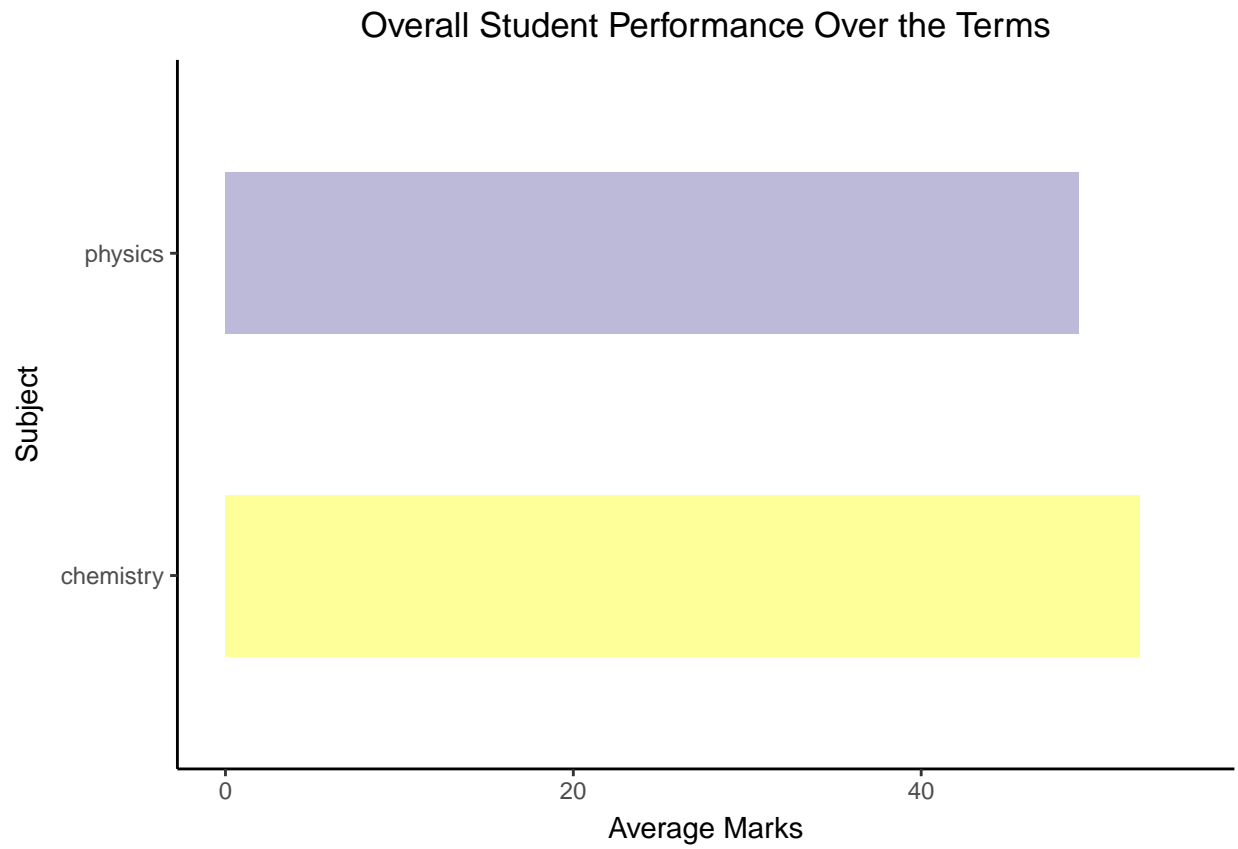


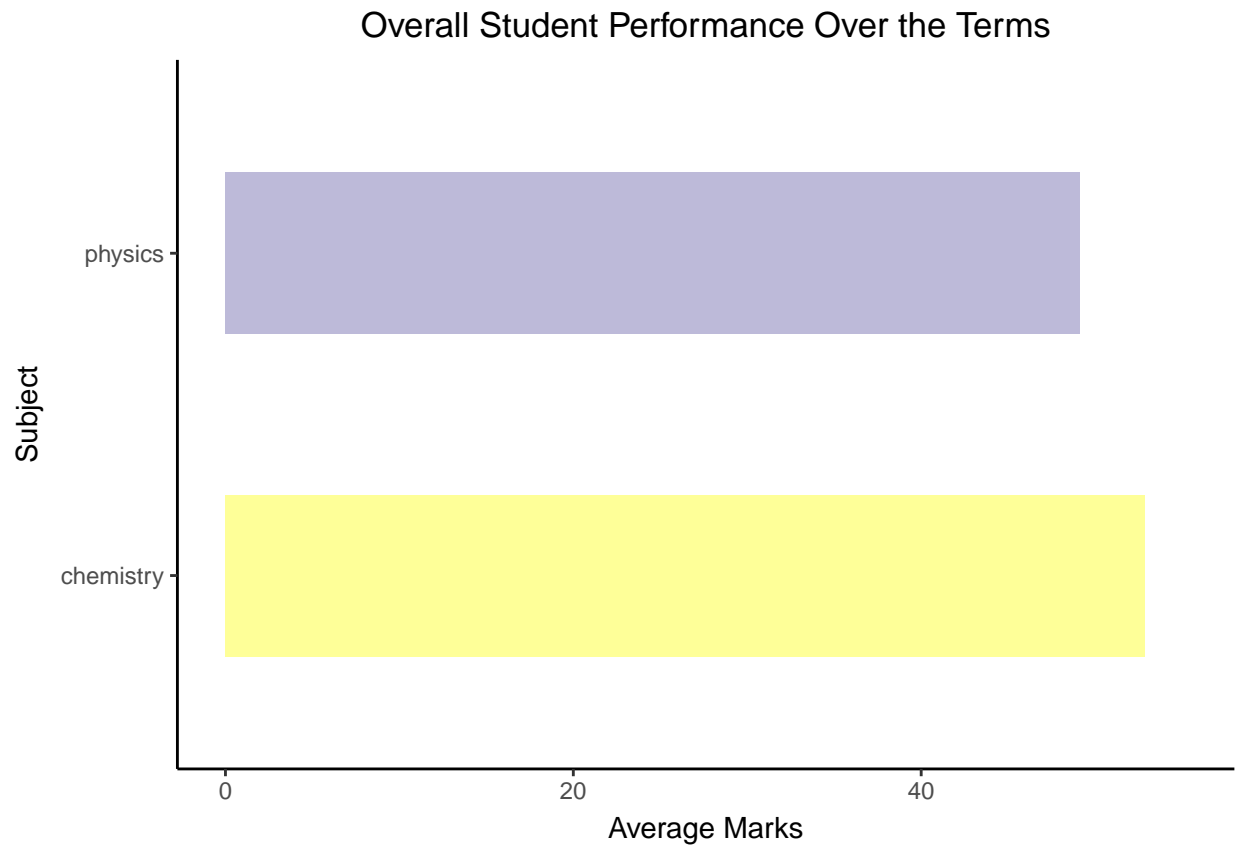
Overall Student Performance Over the Terms

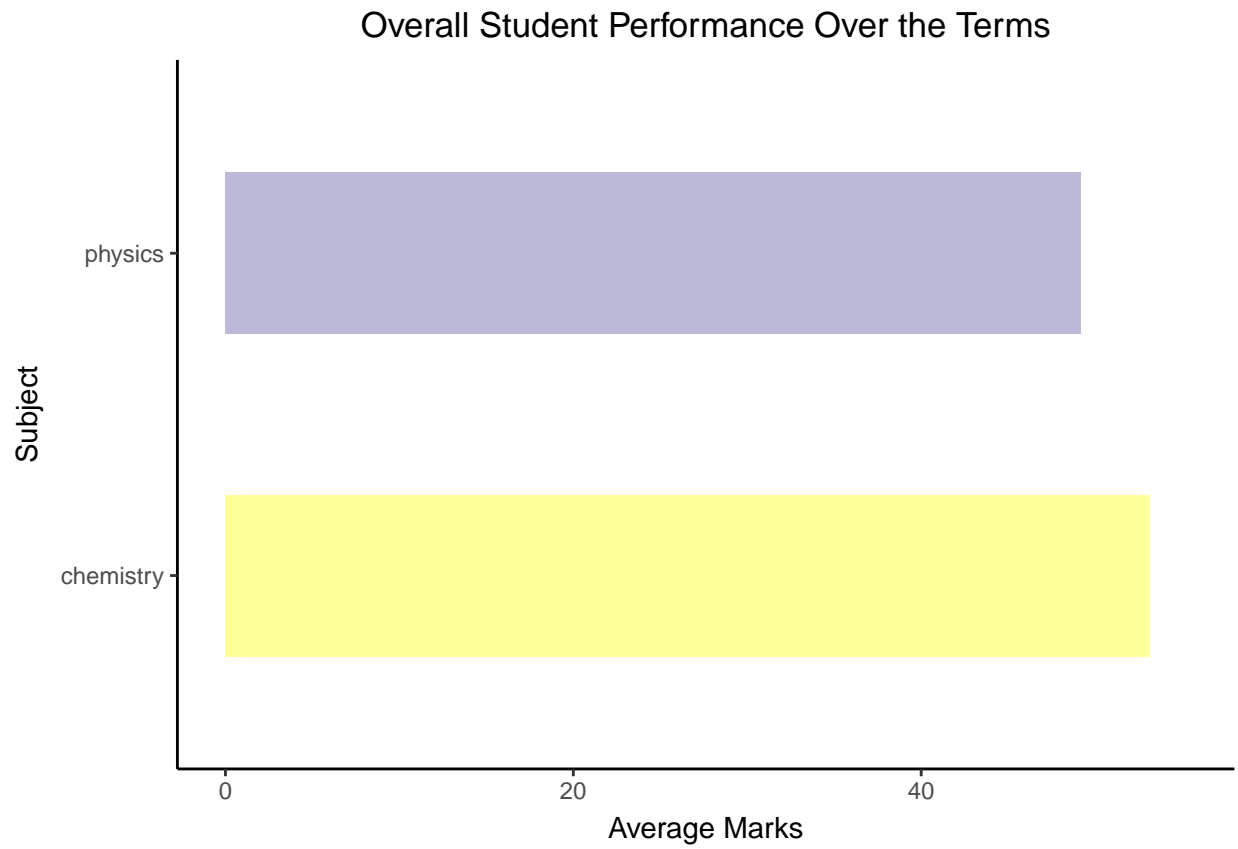


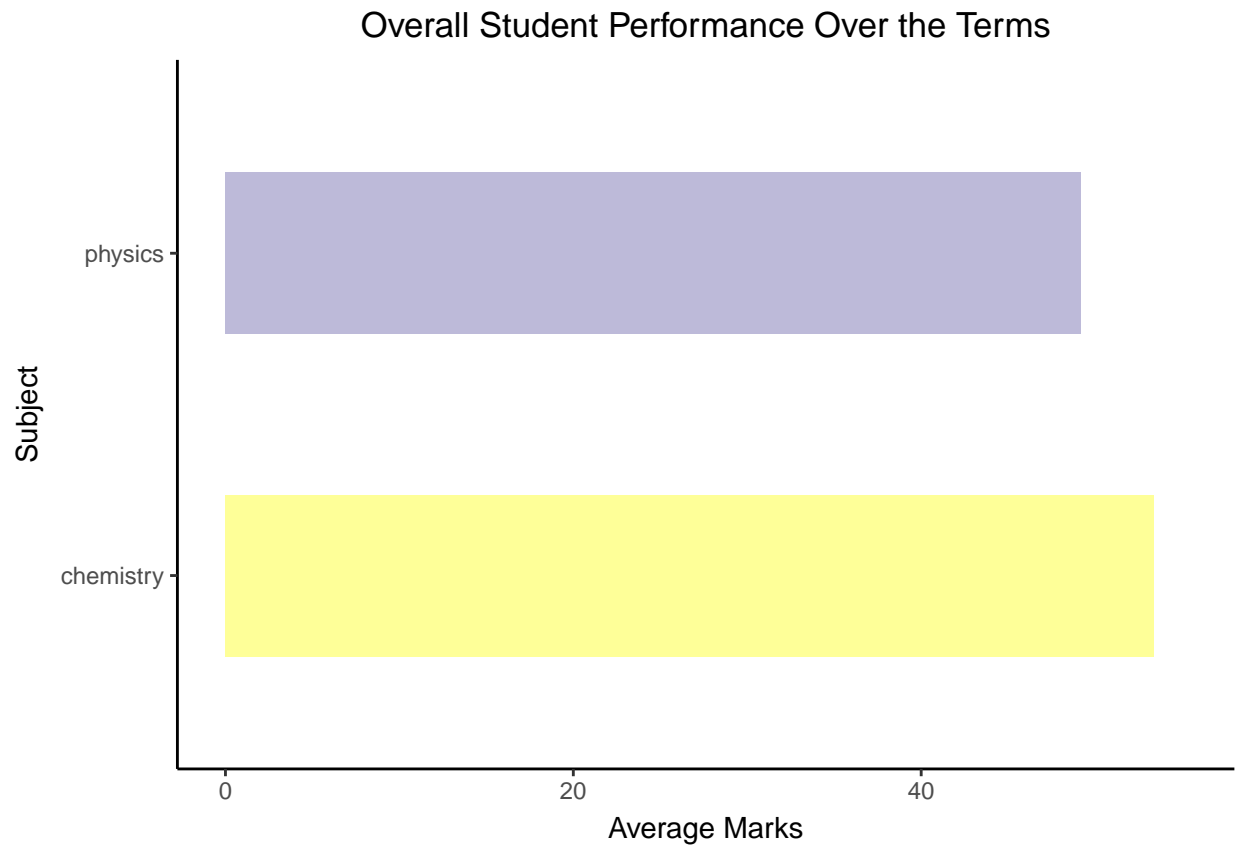


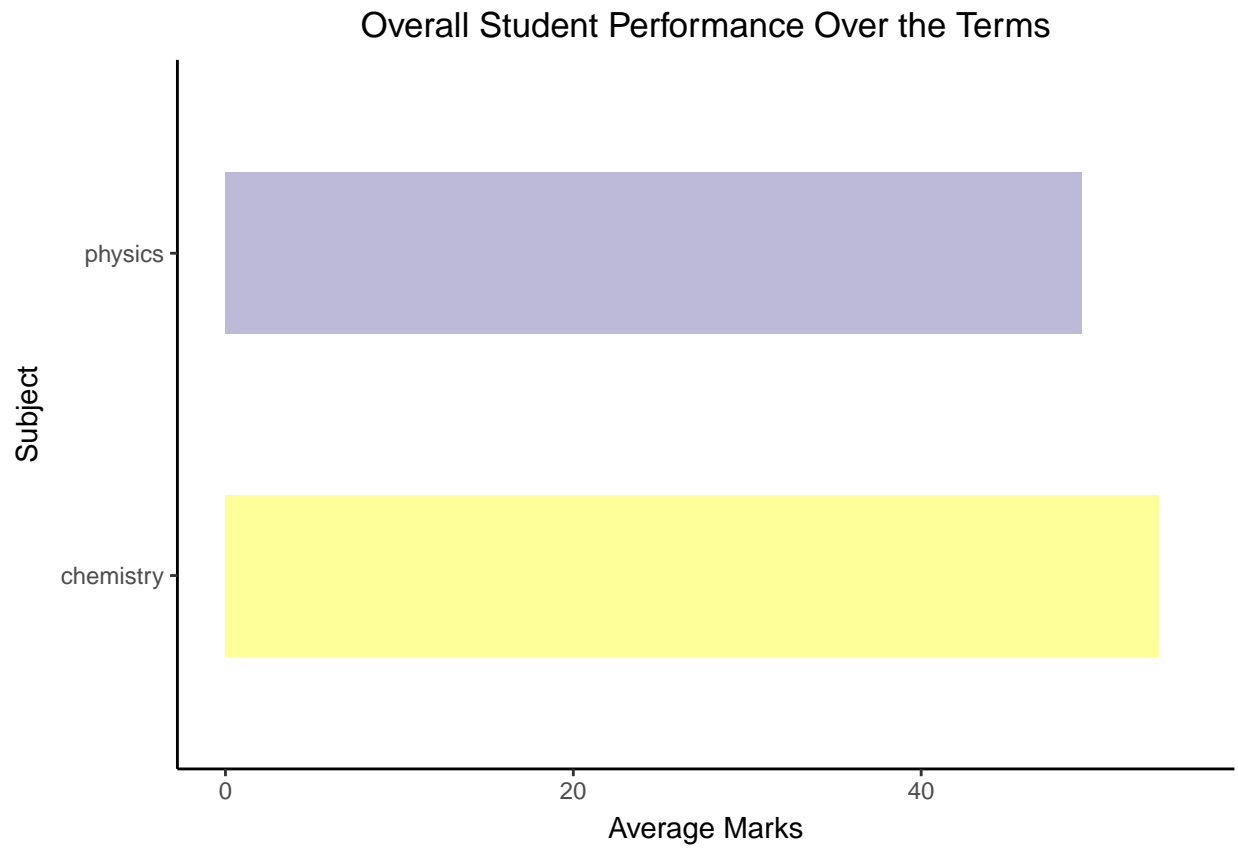


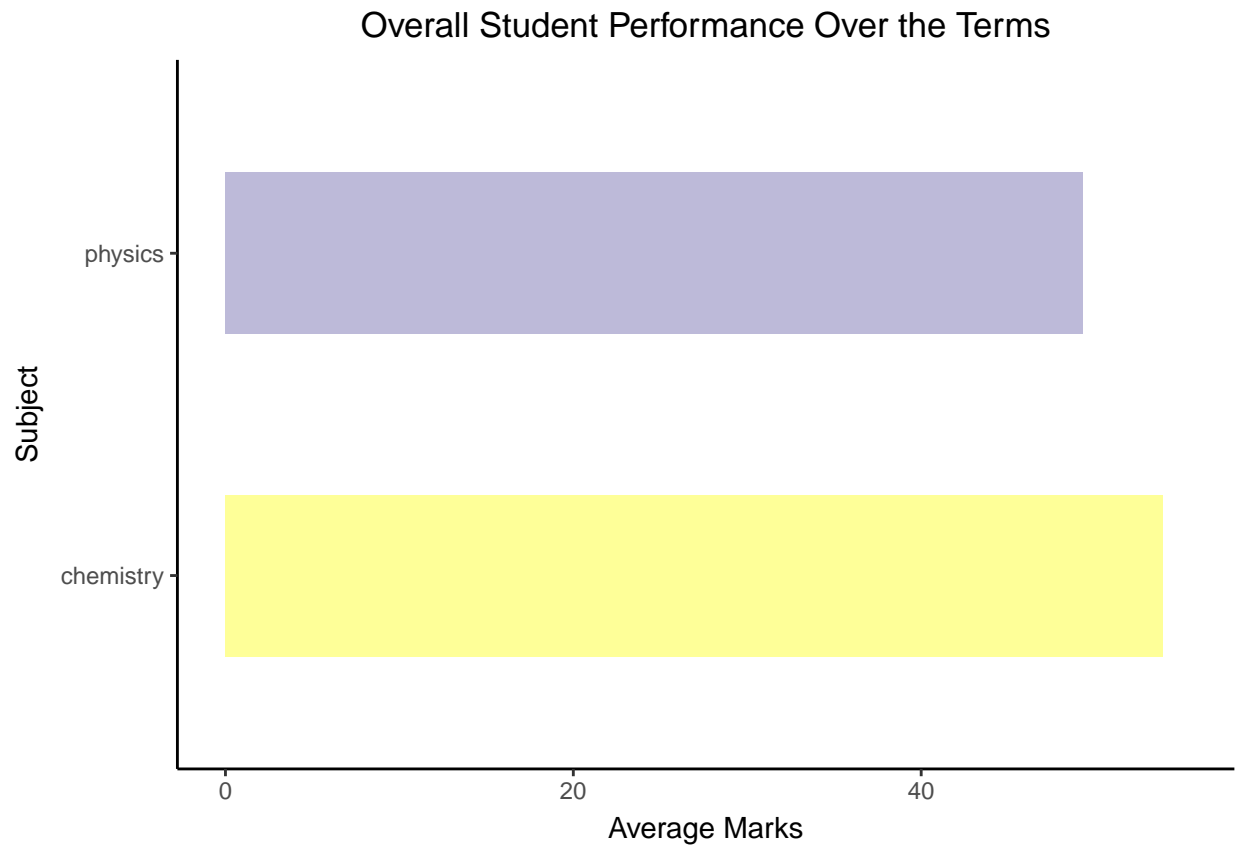




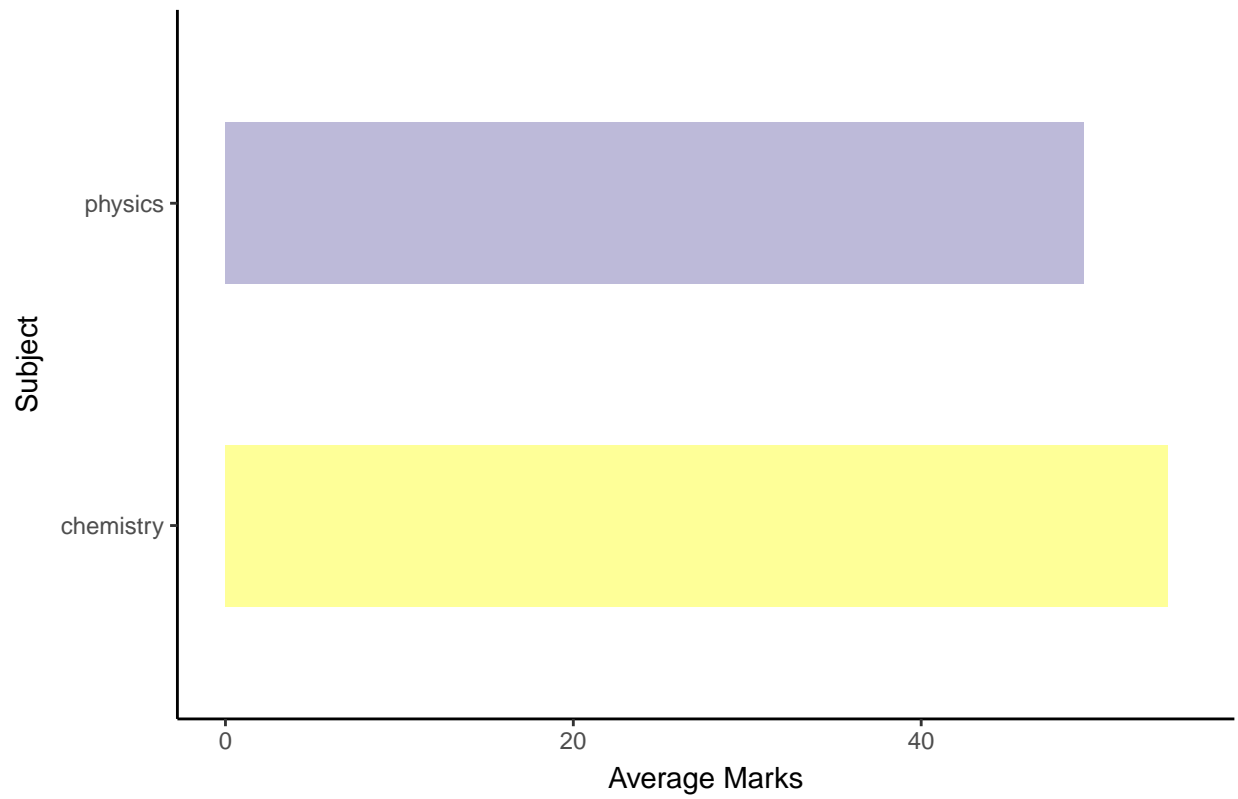


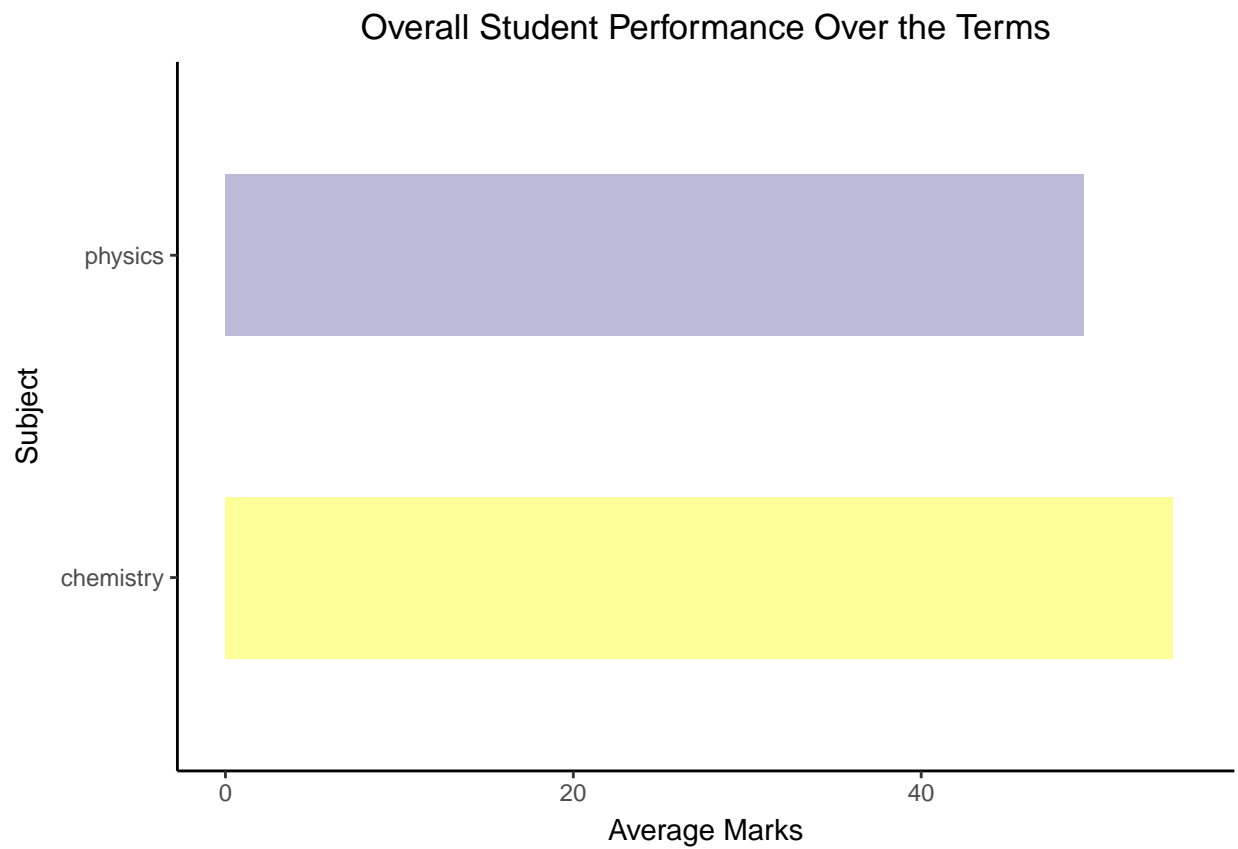


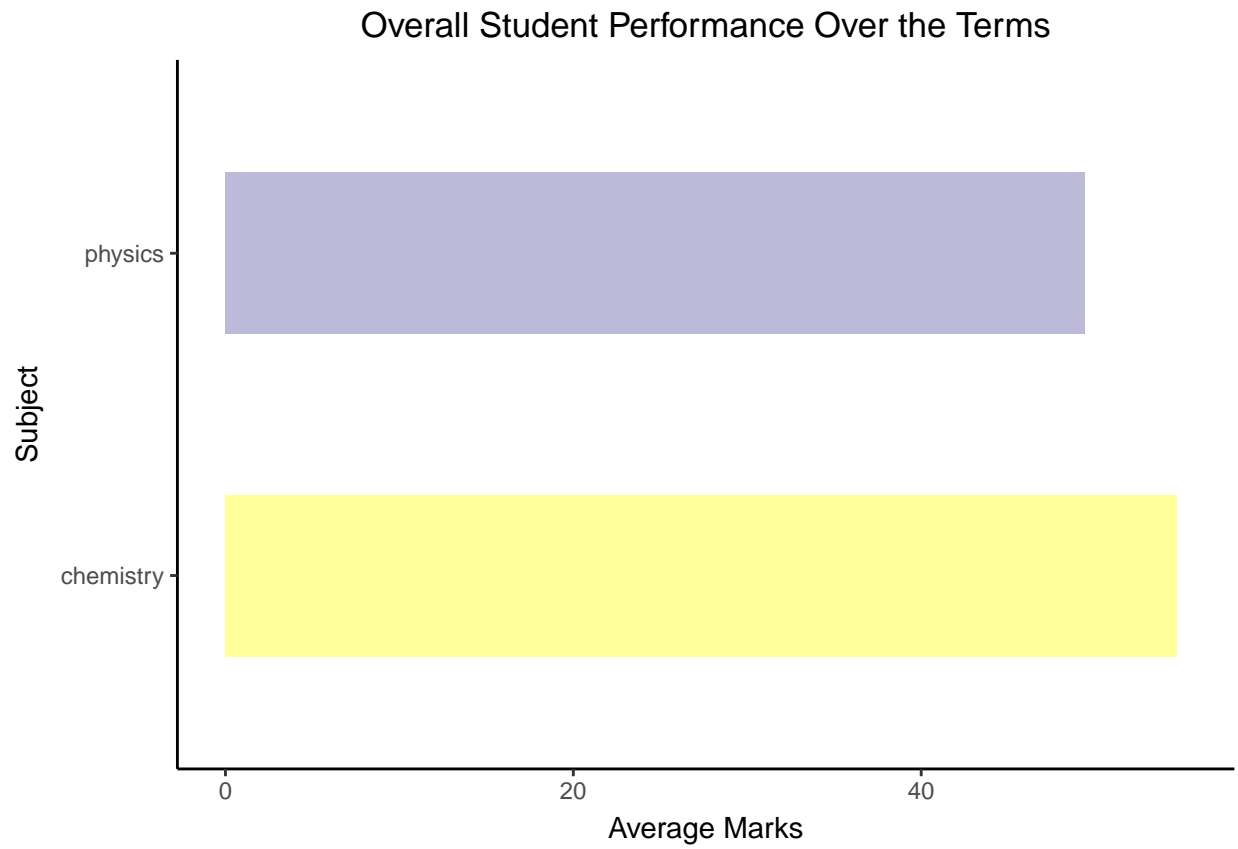


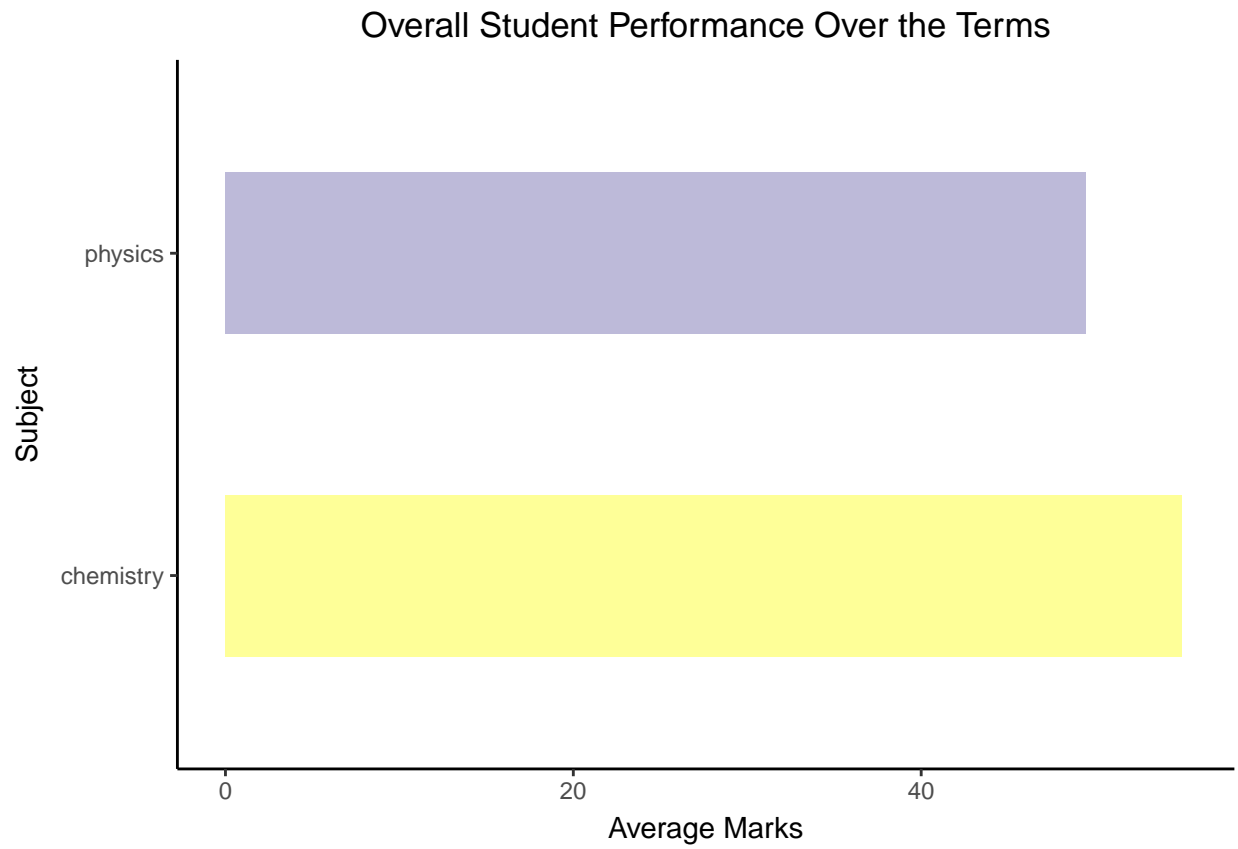


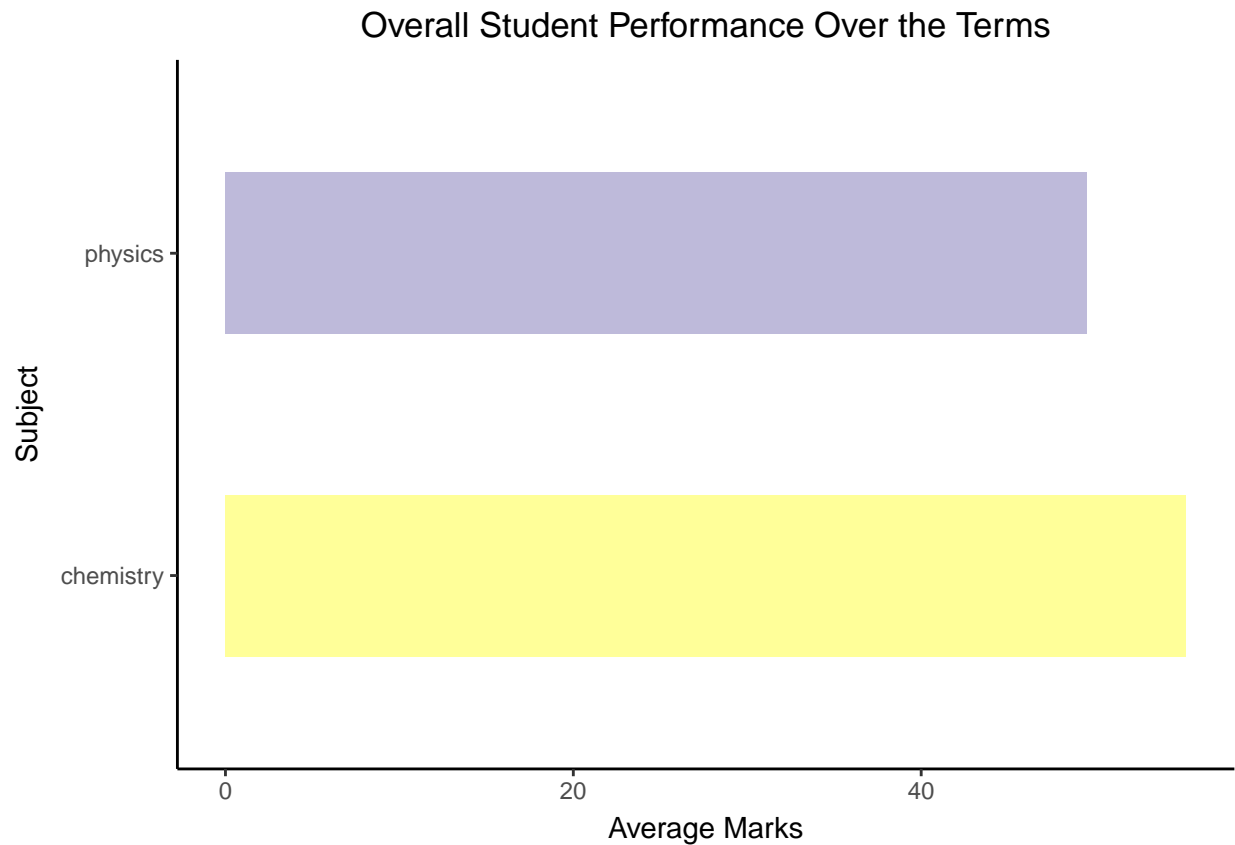
Overall Student Performance Over the Terms









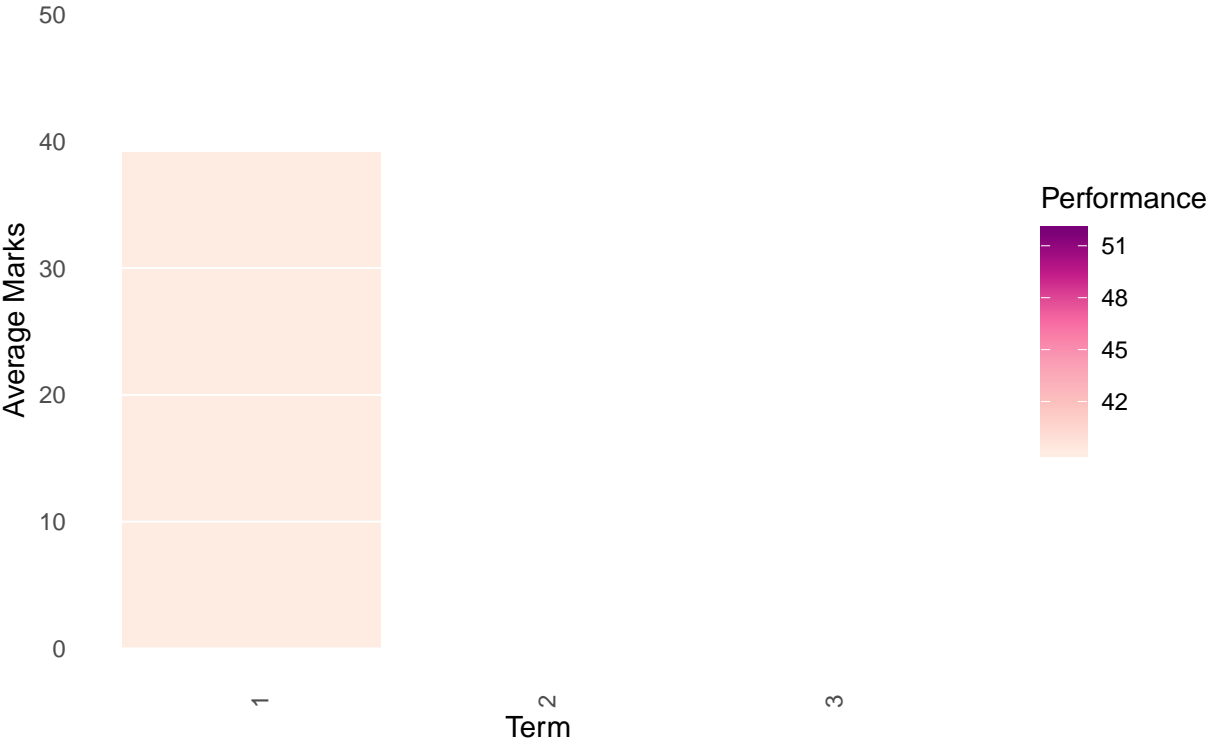


trying a different format of a plot

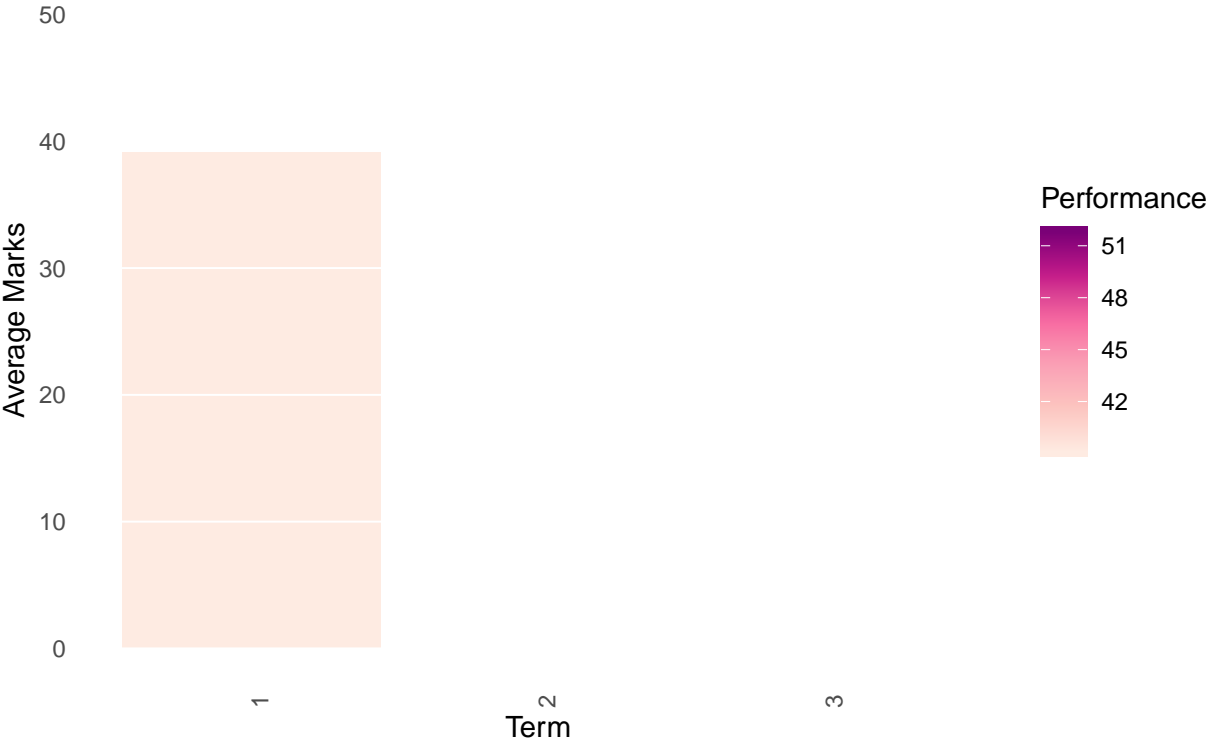
```
p <- ggplot(average_marks_overall, aes(as.factor(term), Performance, fill = Performance)) +
  geom_col() + scale_fill_distiller(palette = "RdPu", direction = 1) +
  ggtitle("Overall Marks over the Year") + labs(x="Term", y="Average Marks") +
  theme_minimal() +
  theme(
    panel.grid = element_blank(),
    panel.grid.major.y = element_line(color = "white"),
    panel.ontop = TRUE, plot.title = element_text(hjust = 0.5),
    axis.text.x = element_text(angle=90))

p + transition_states(term, wrap = FALSE) + shadow_mark()
```

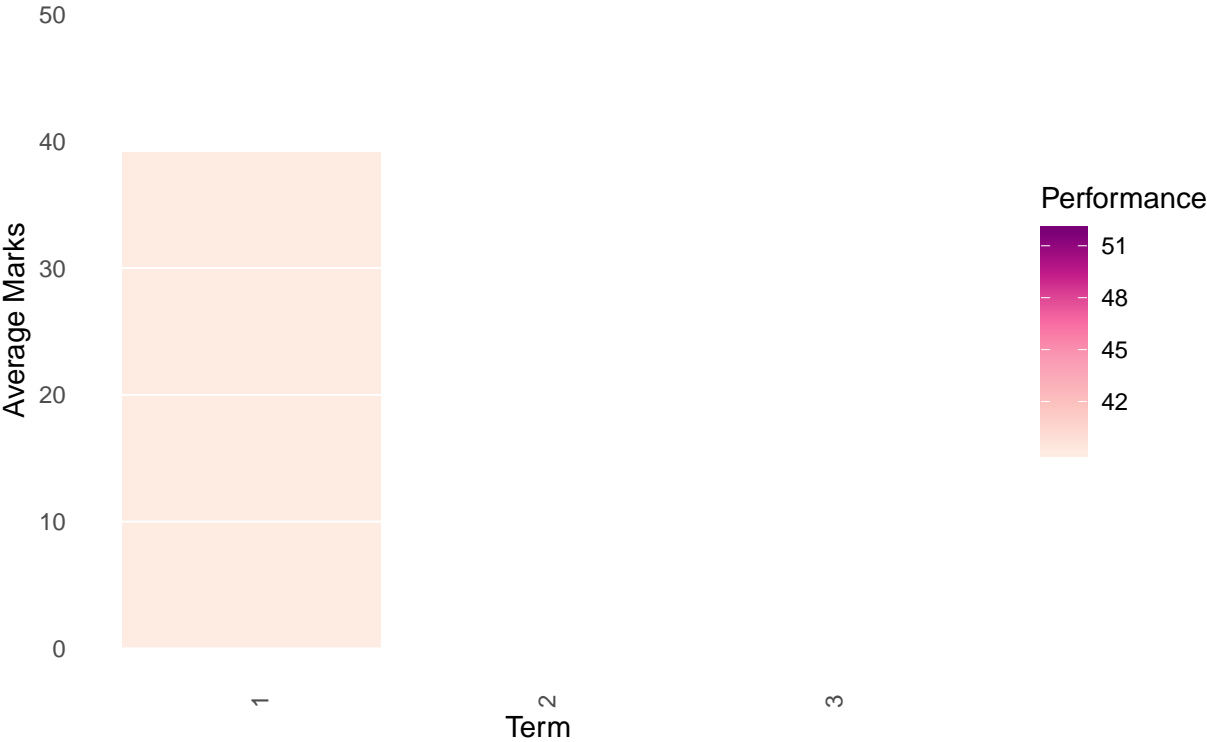
Overall Marks over the Year



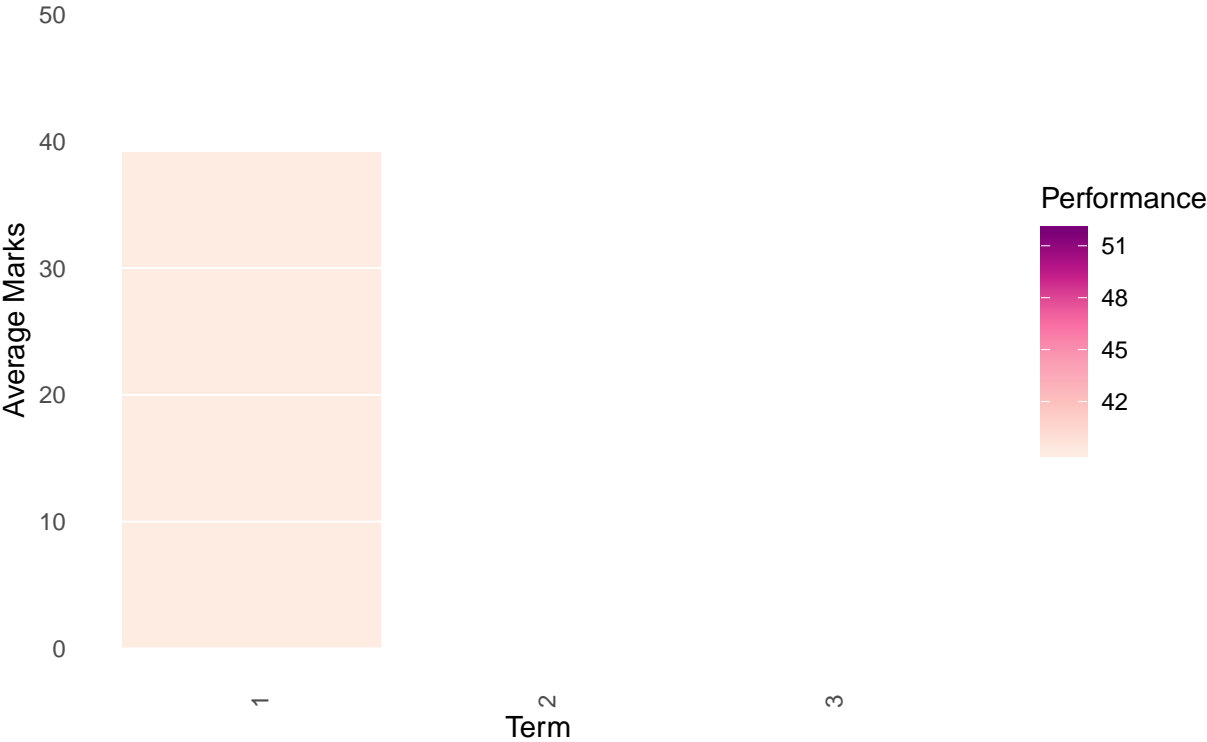
Overall Marks over the Year



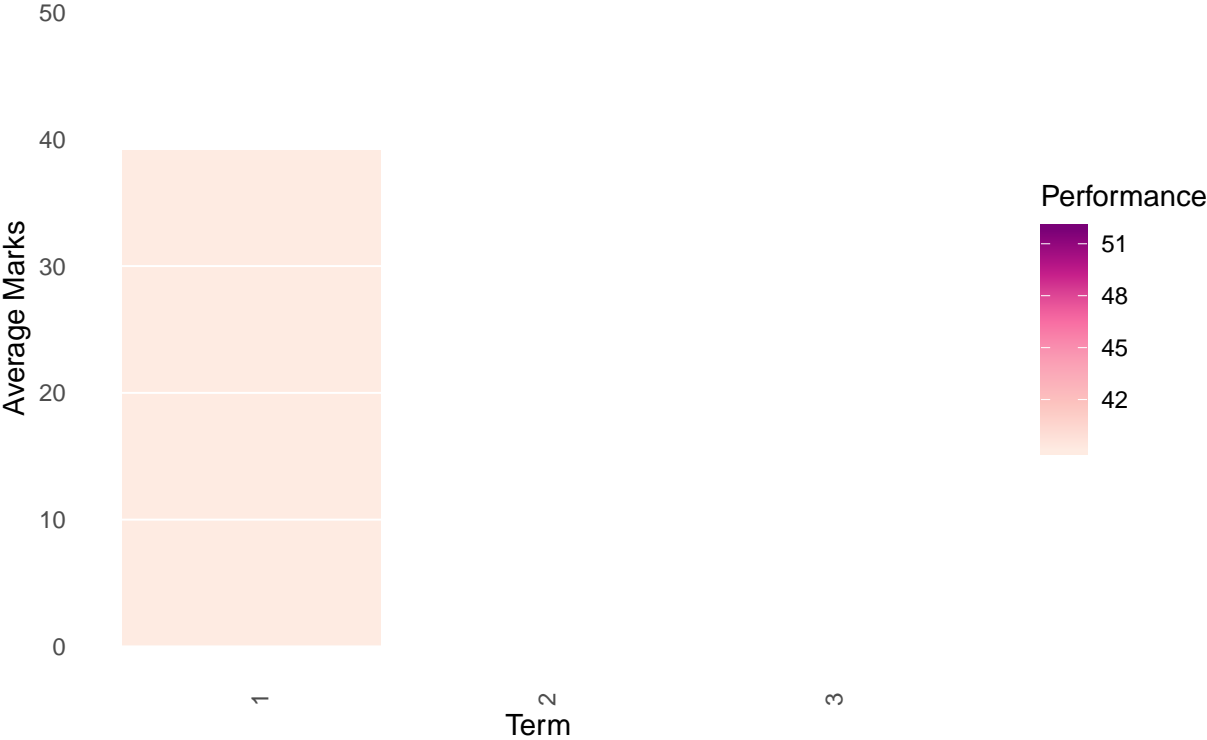
Overall Marks over the Year



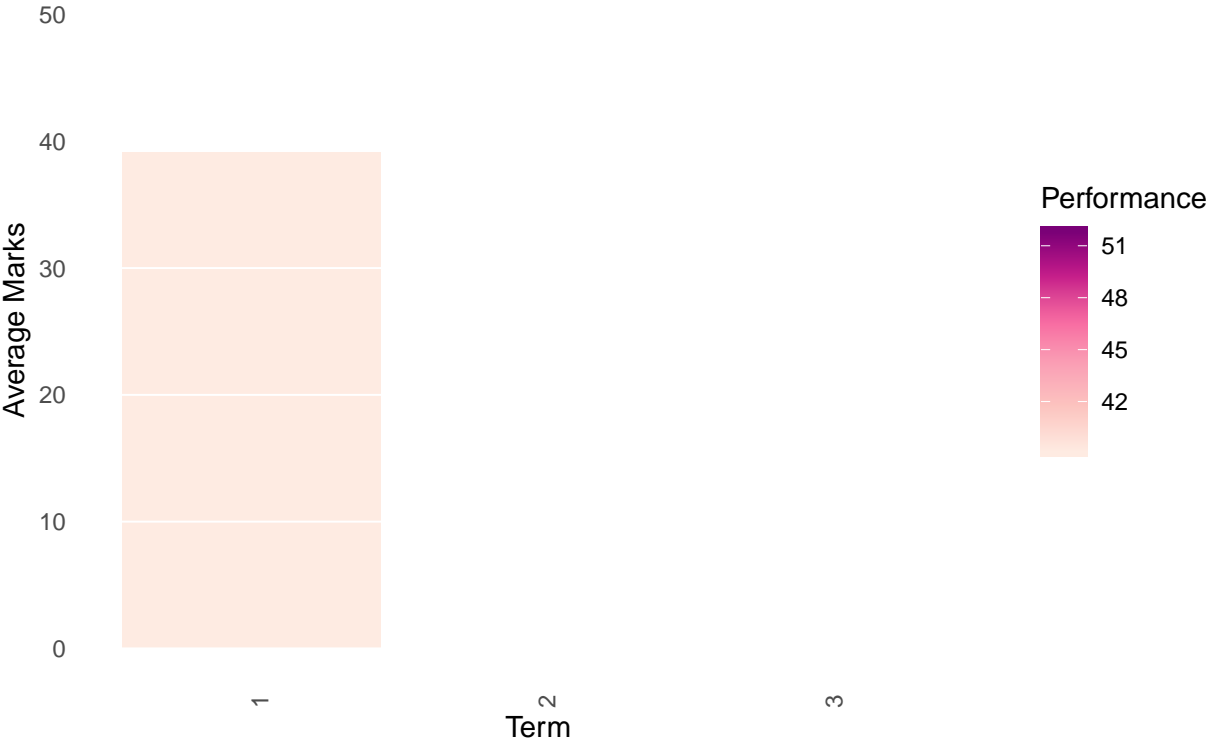
Overall Marks over the Year



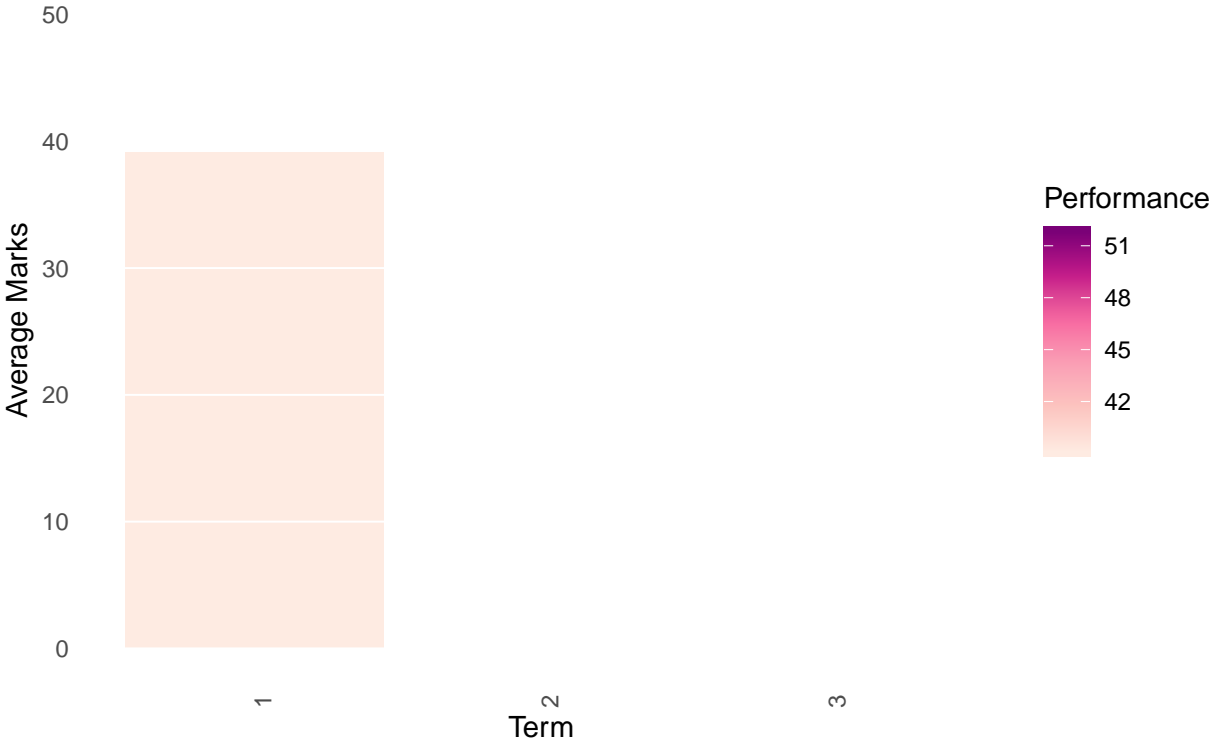
Overall Marks over the Year



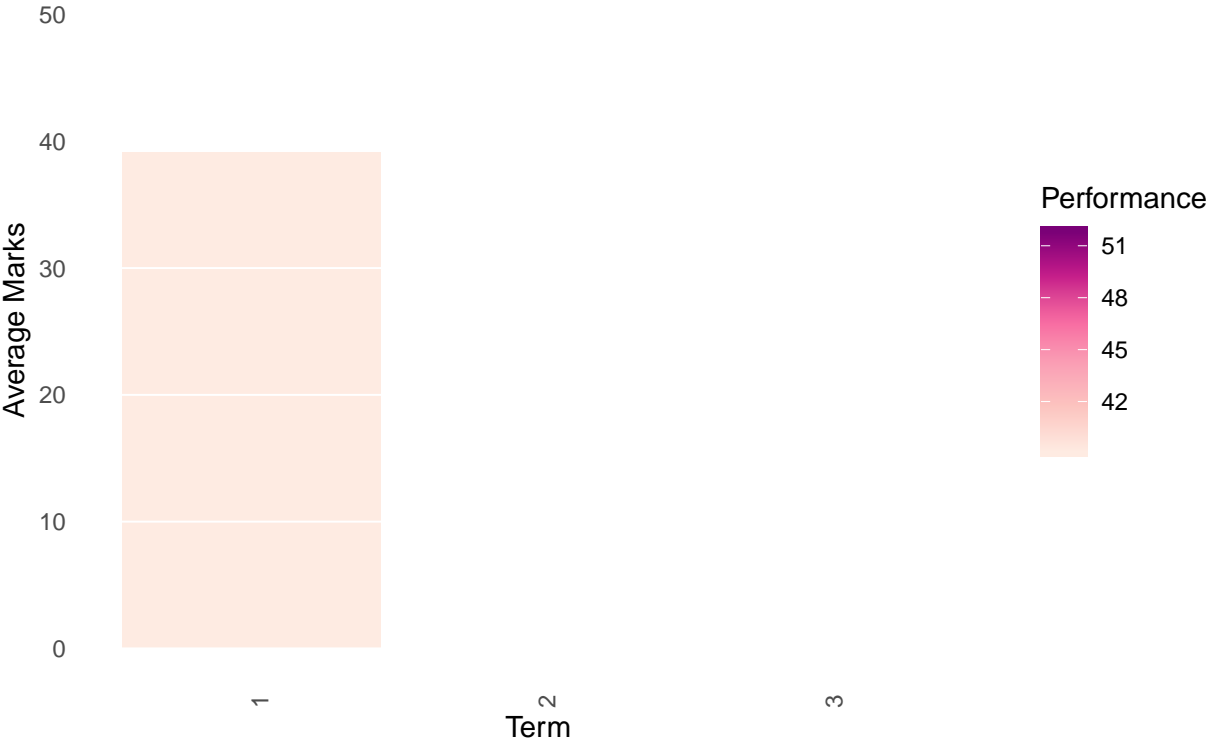
Overall Marks over the Year



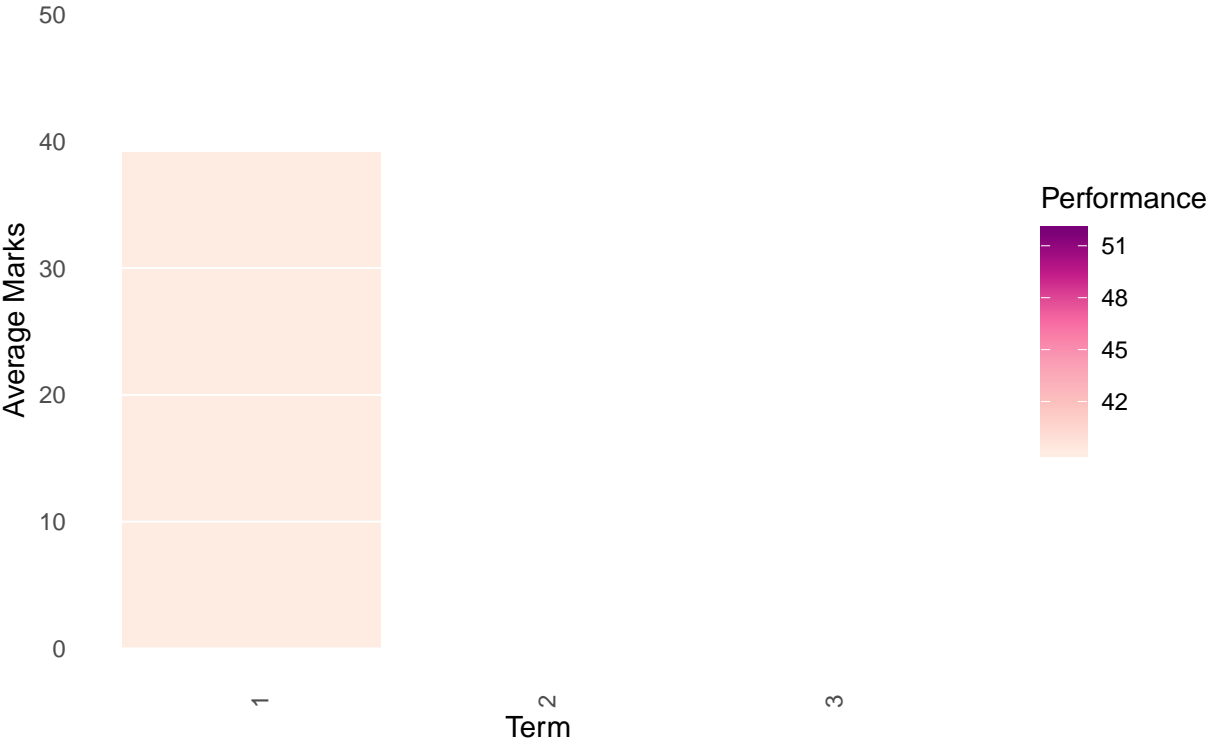
Overall Marks over the Year



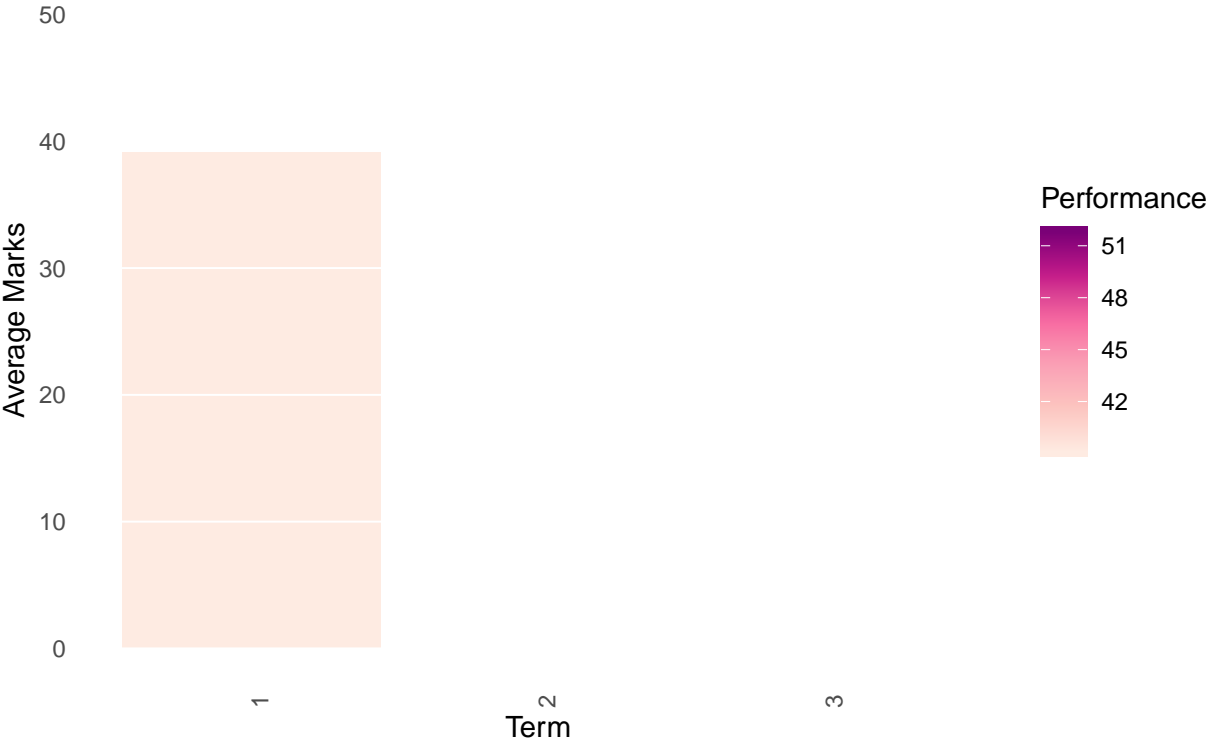
Overall Marks over the Year



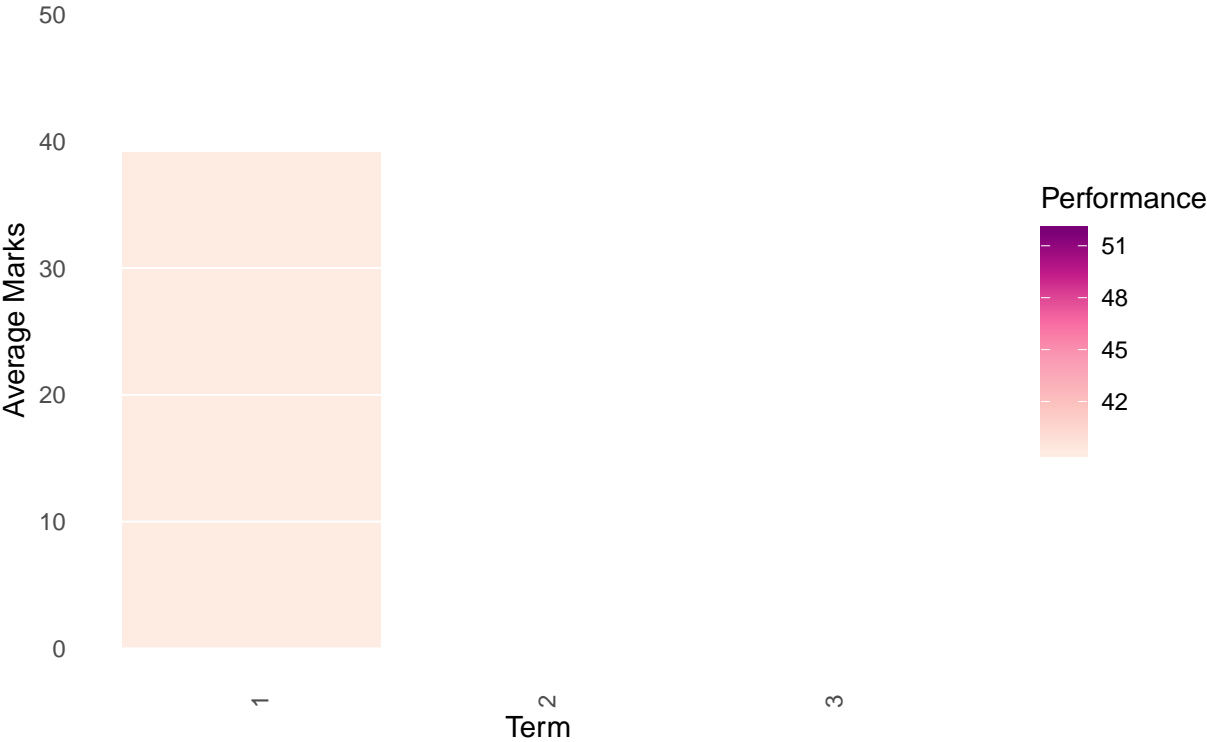
Overall Marks over the Year



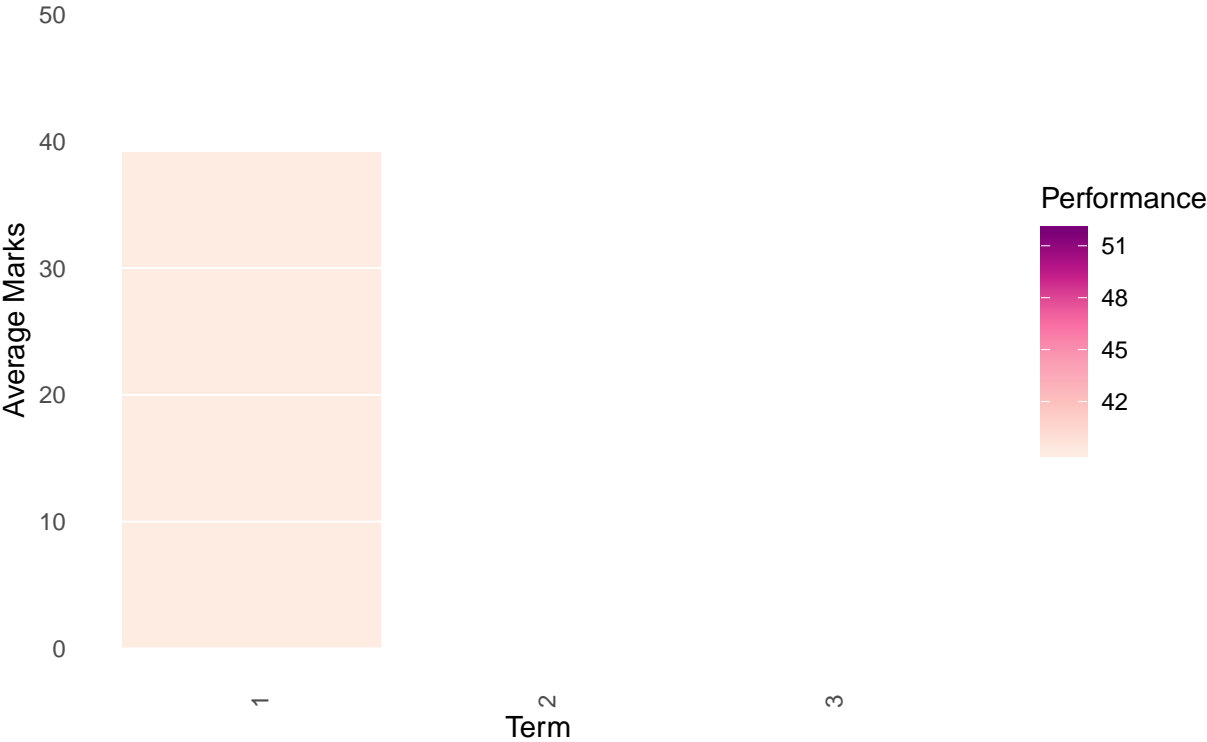
Overall Marks over the Year



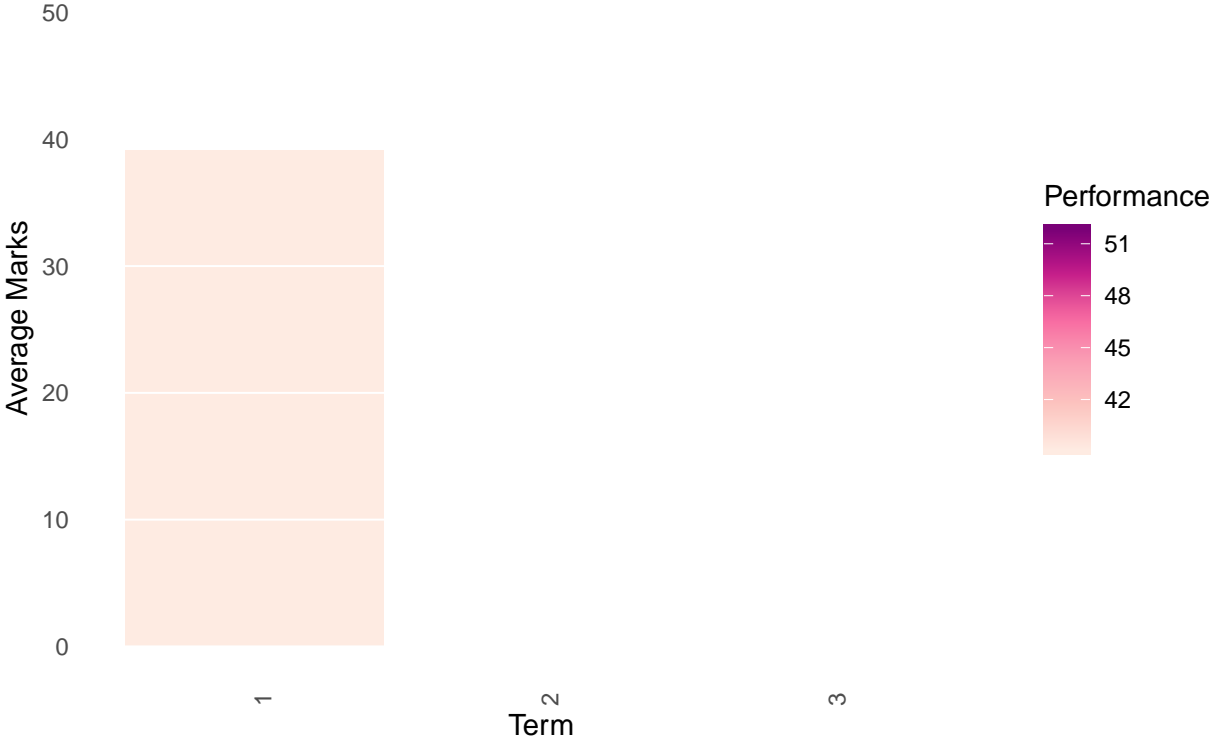
Overall Marks over the Year



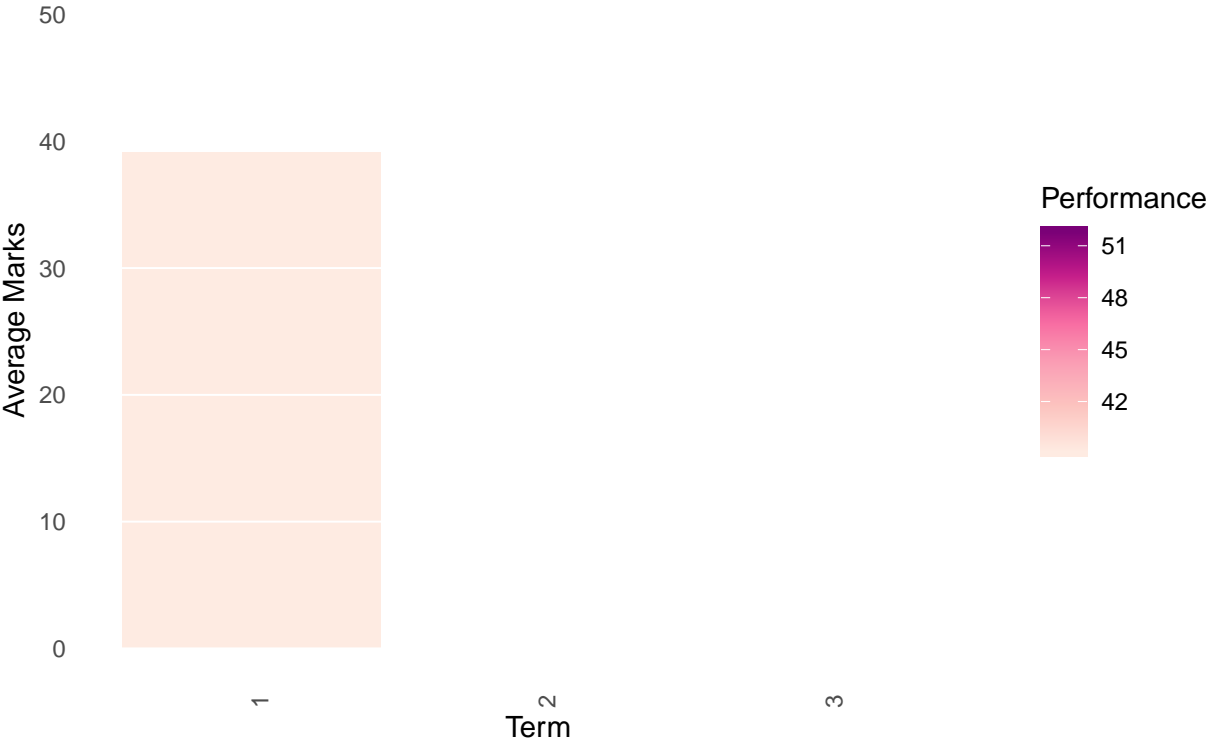
Overall Marks over the Year



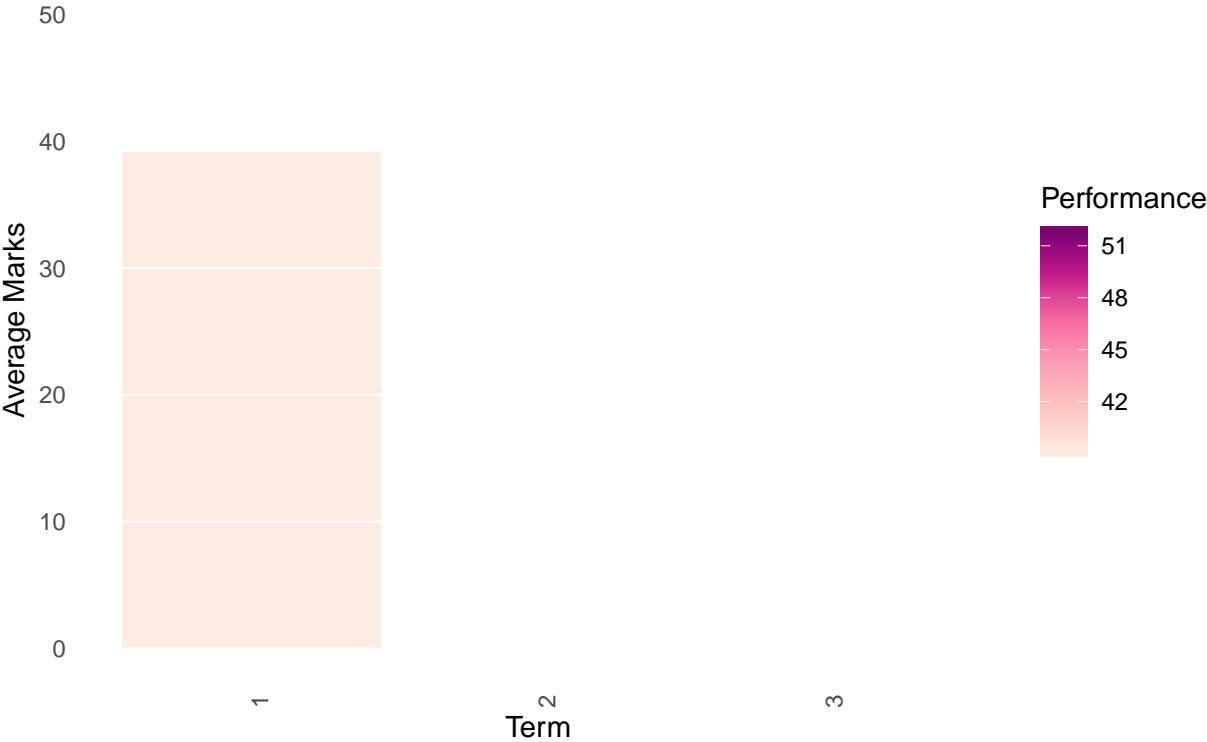
Overall Marks over the Year



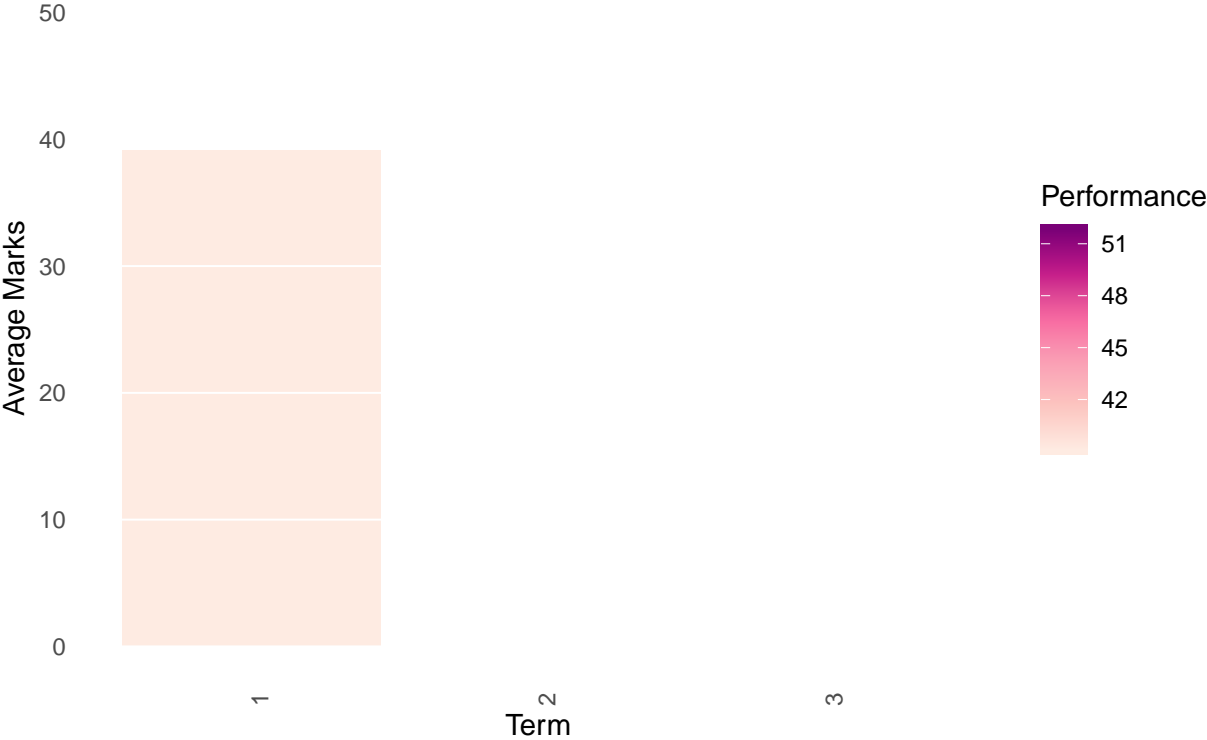
Overall Marks over the Year



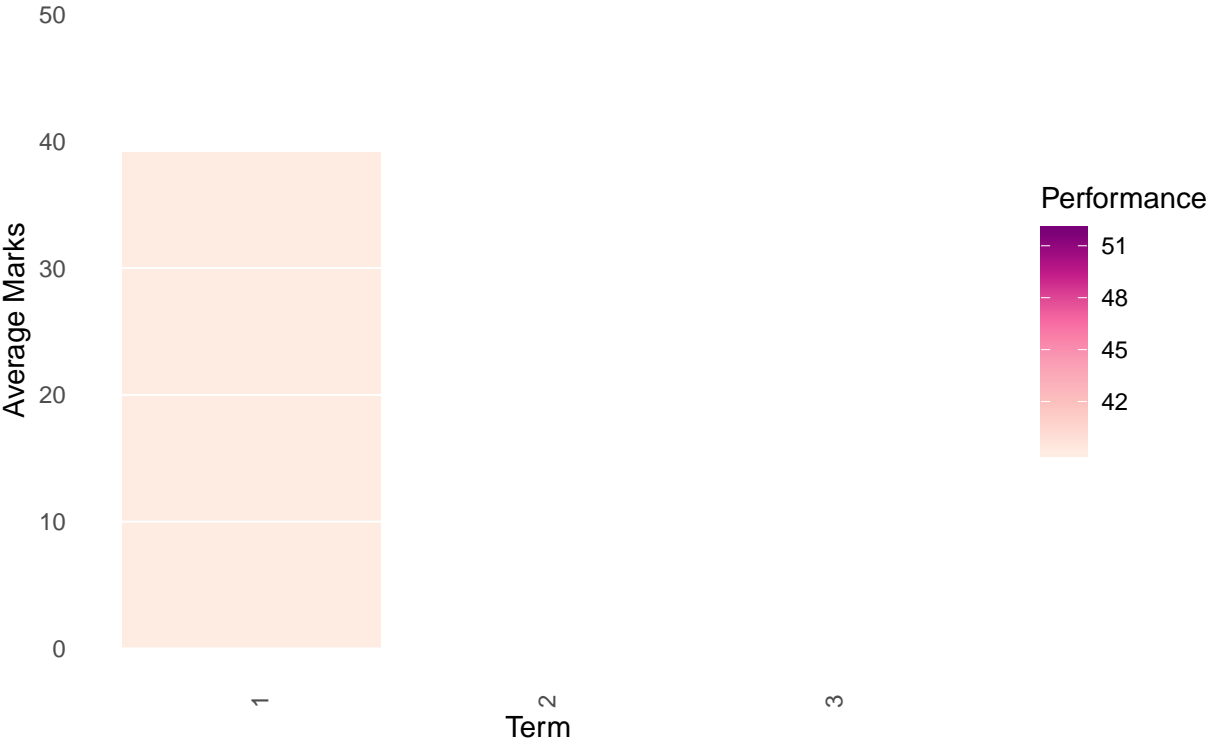
Overall Marks over the Year



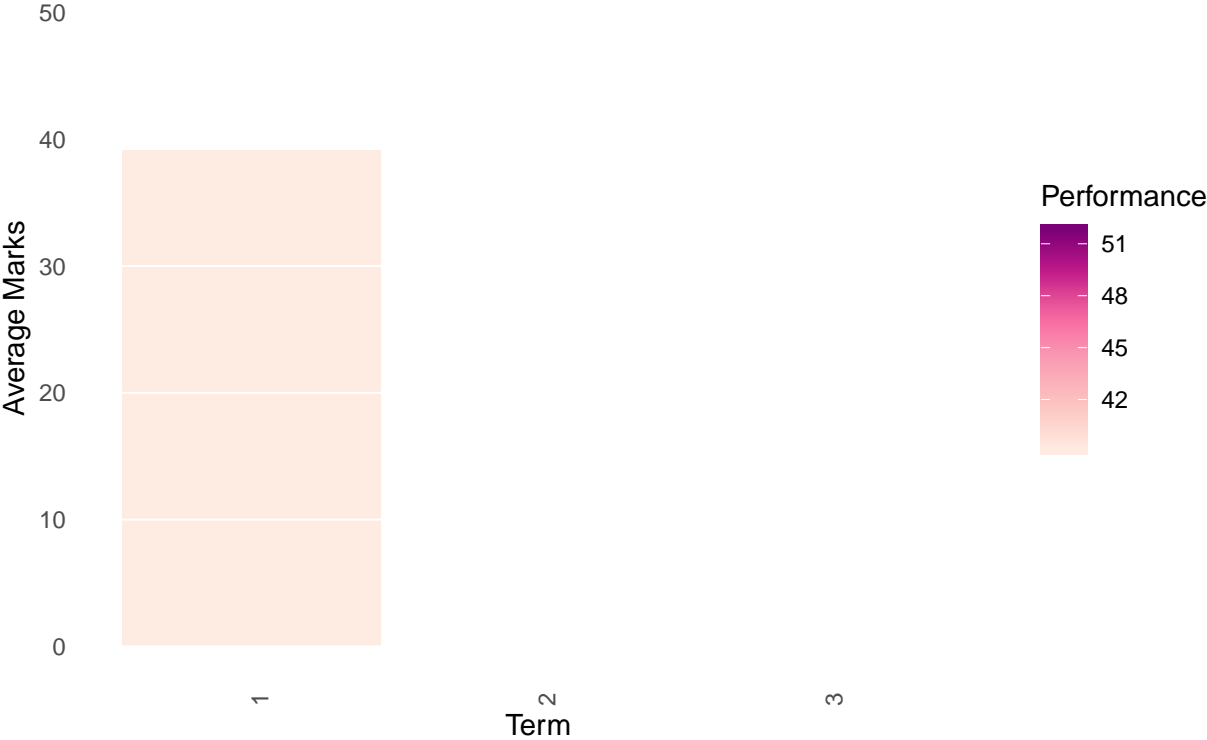
Overall Marks over the Year



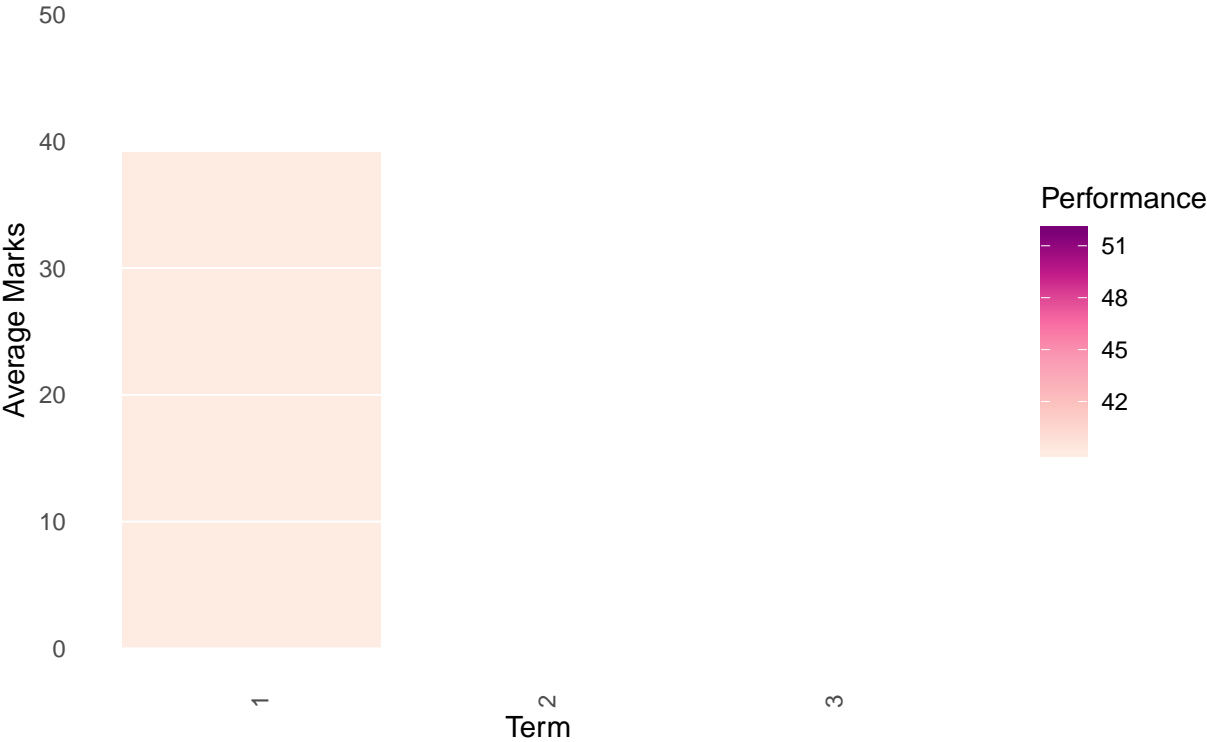
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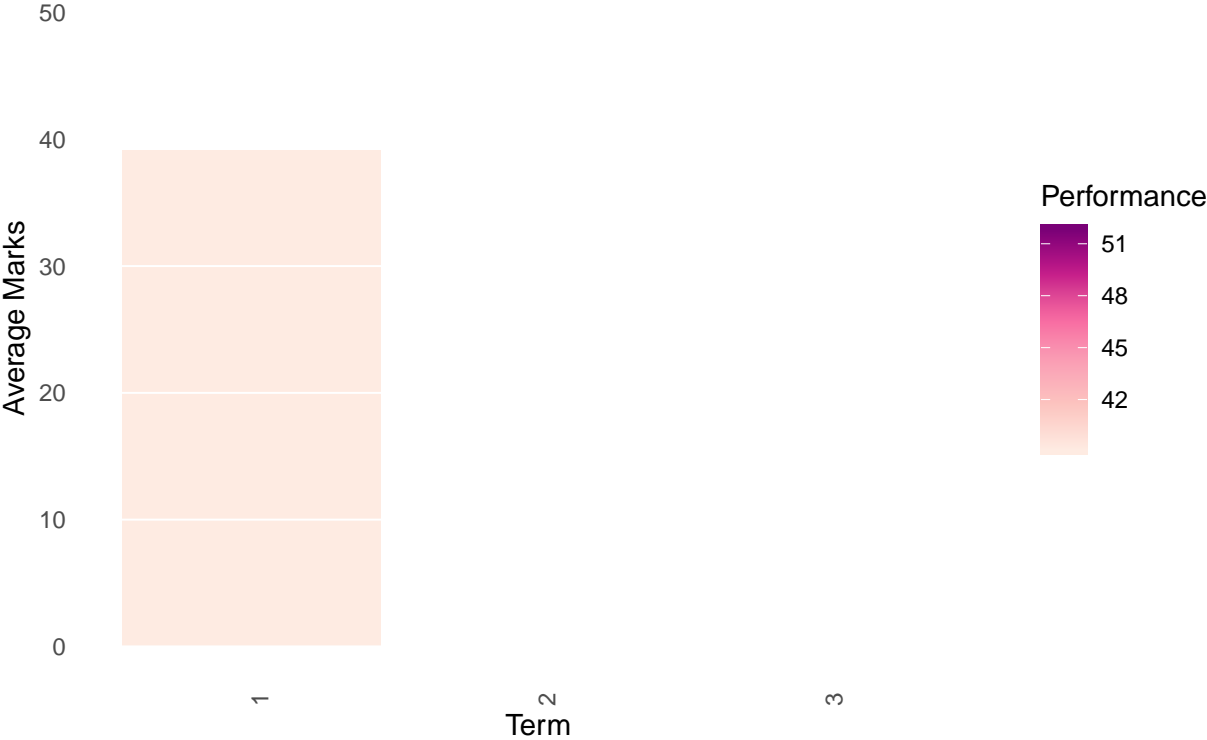
Overall Marks over the Year



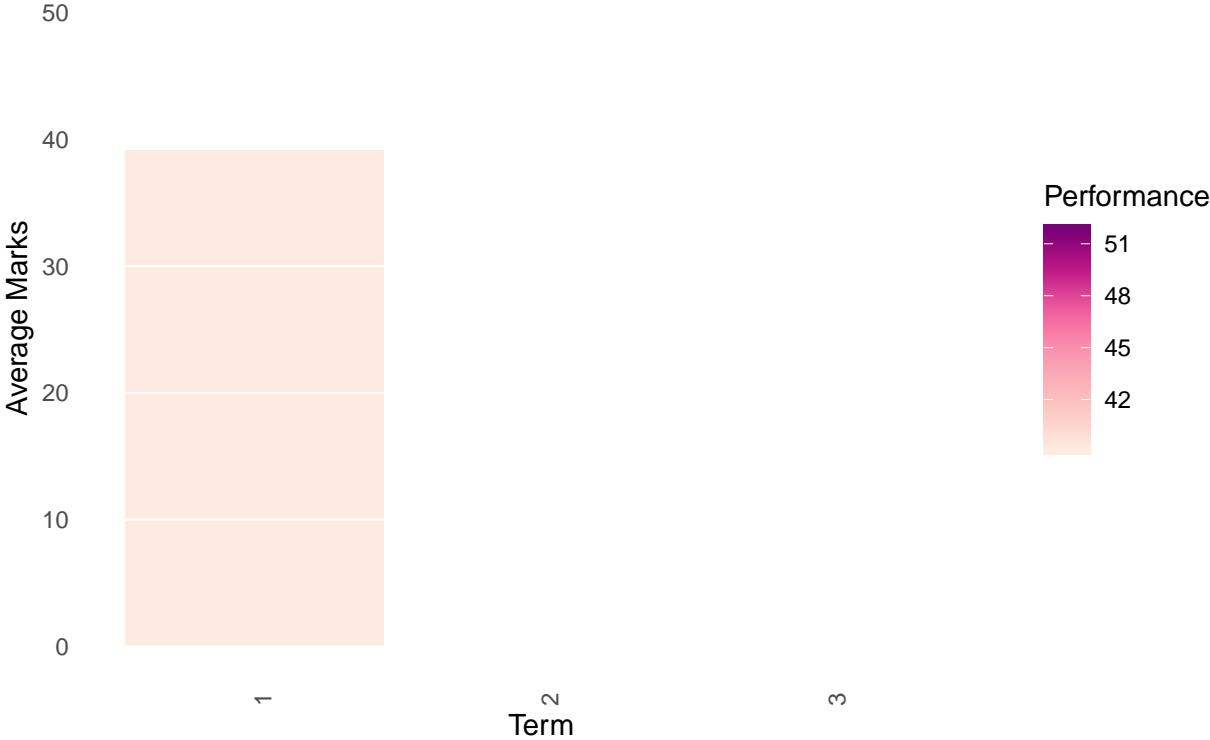
Overall Marks over the Year



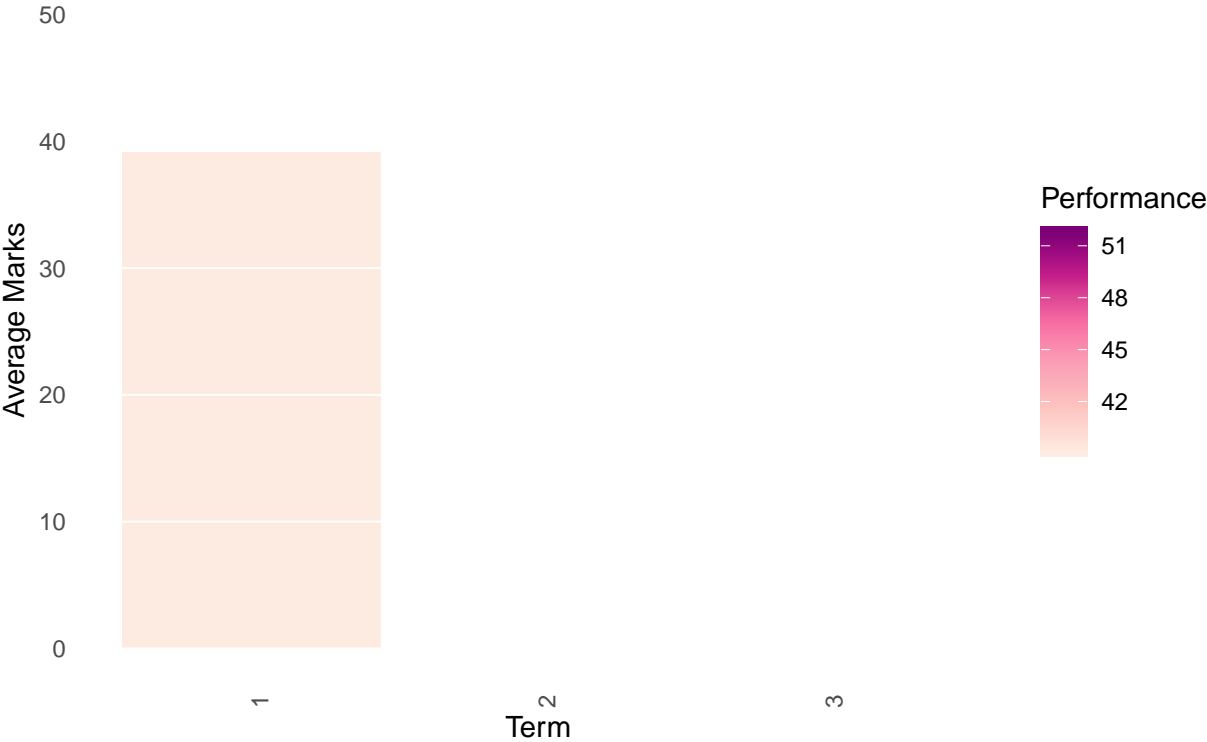
Overall Marks over the Year



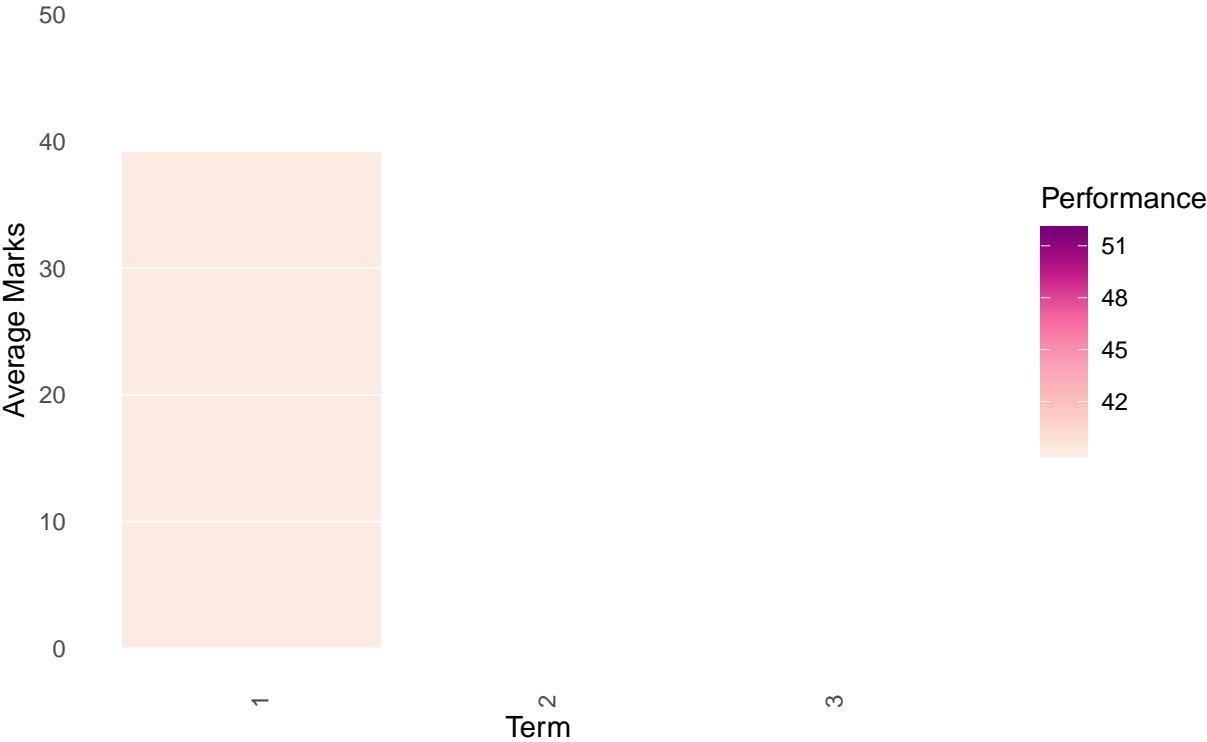
Overall Marks over the Year



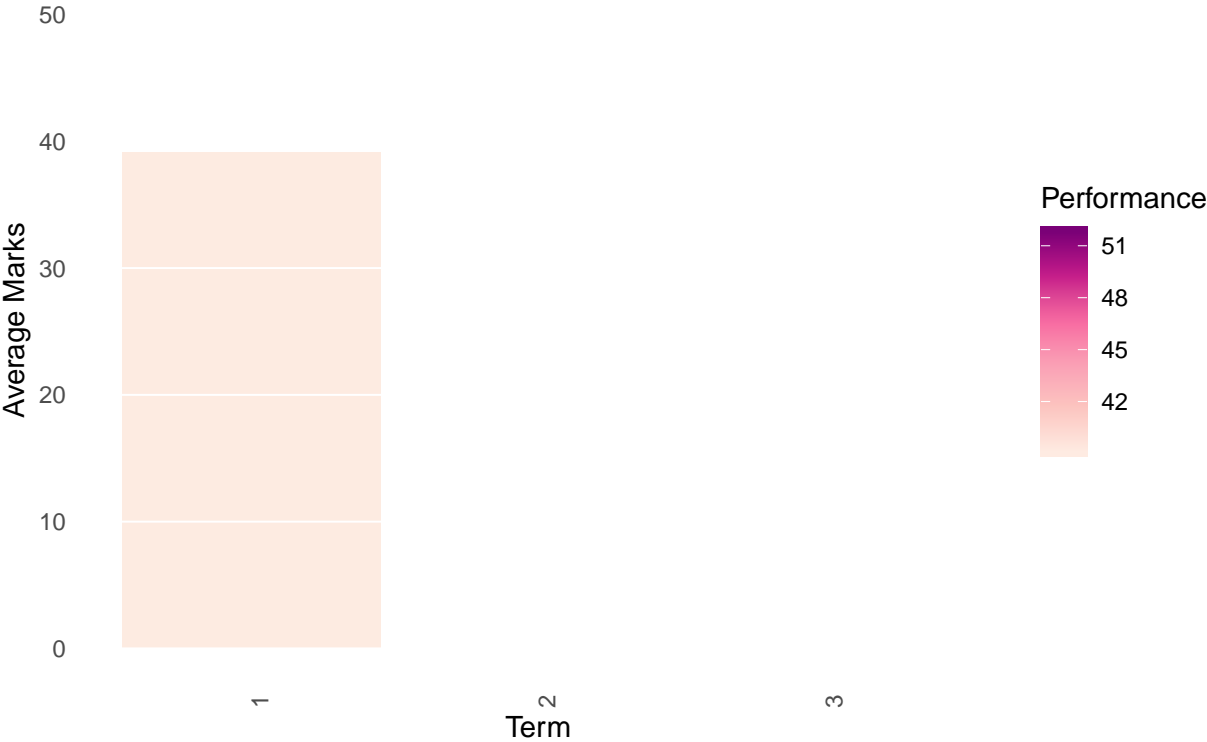
Overall Marks over the Year



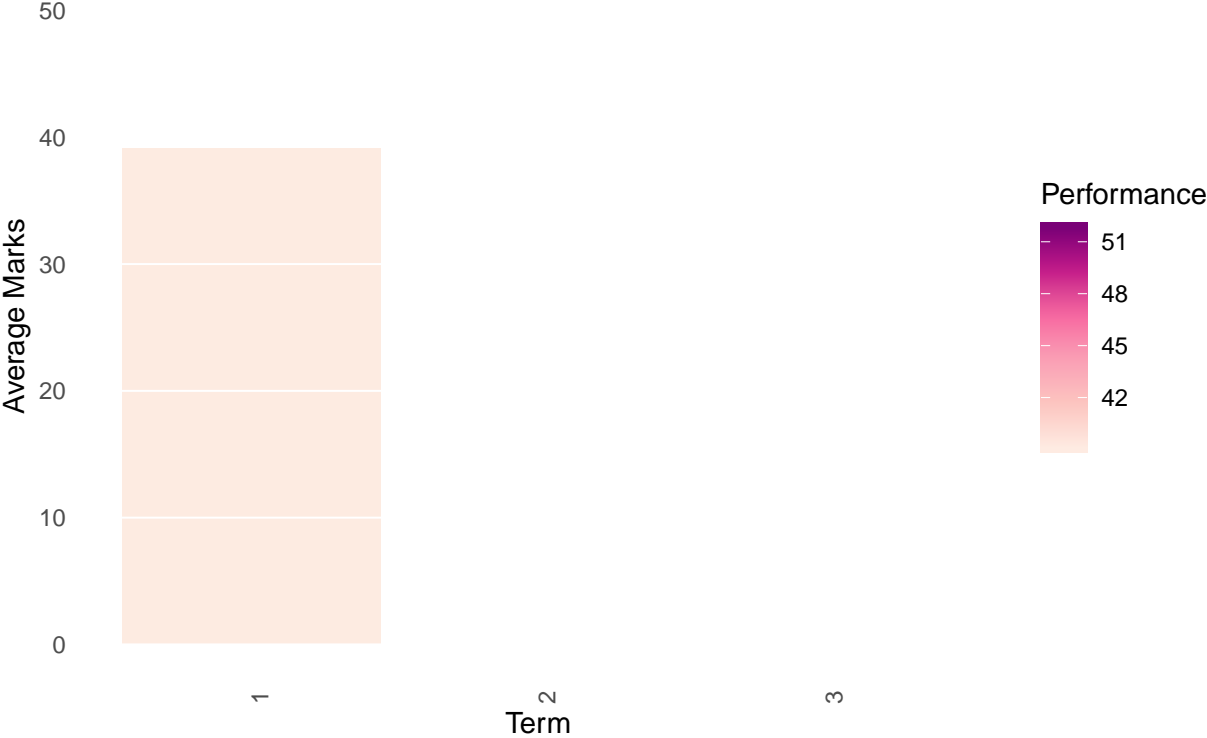
Overall Marks over the Year



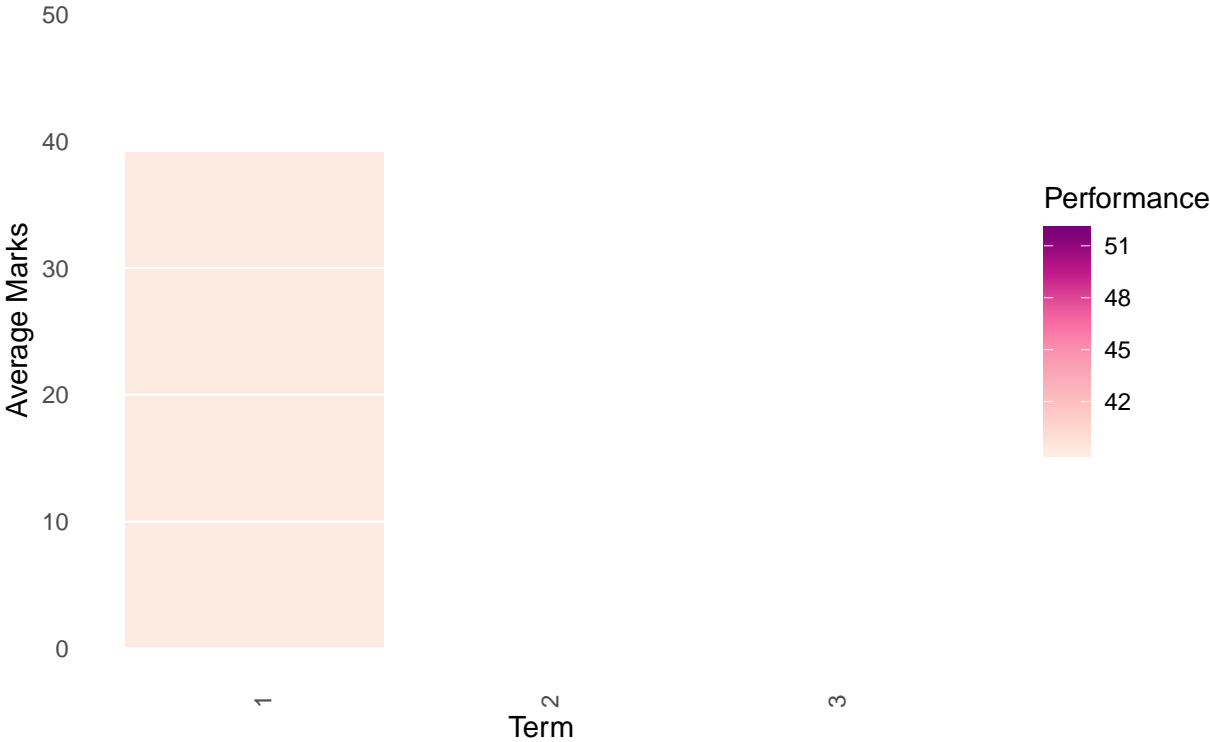
Overall Marks over the Year



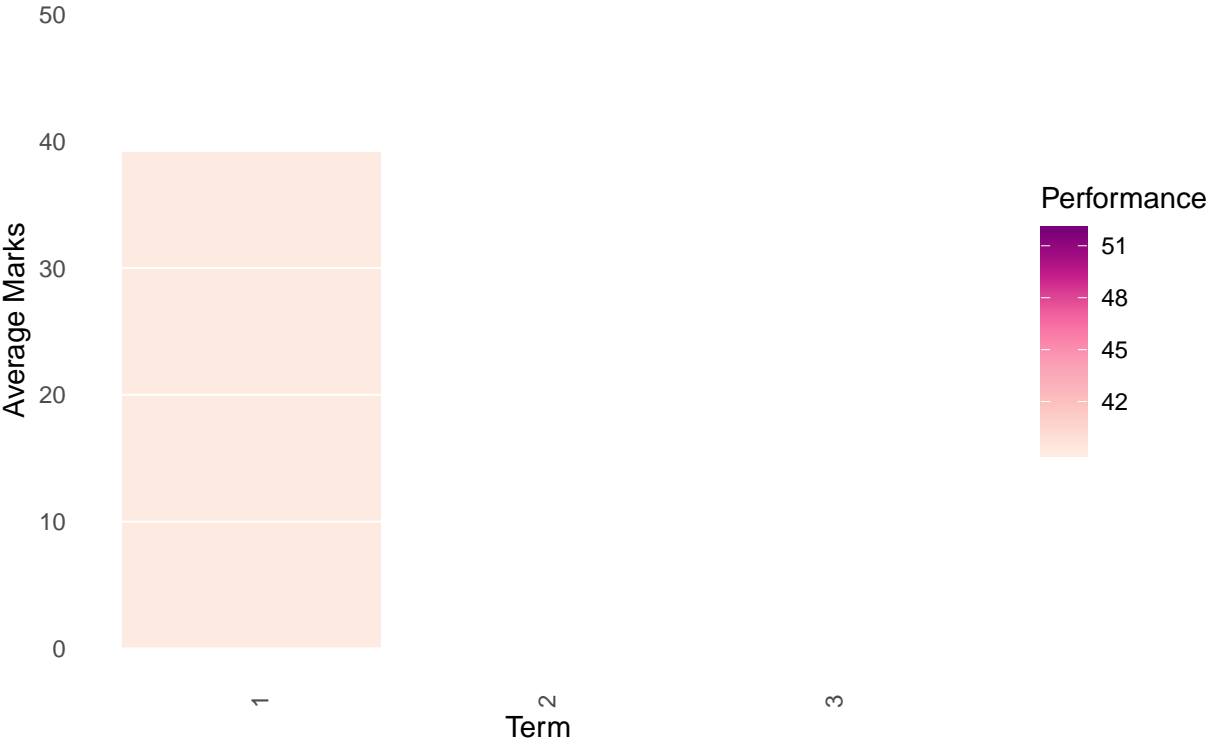
Overall Marks over the Year



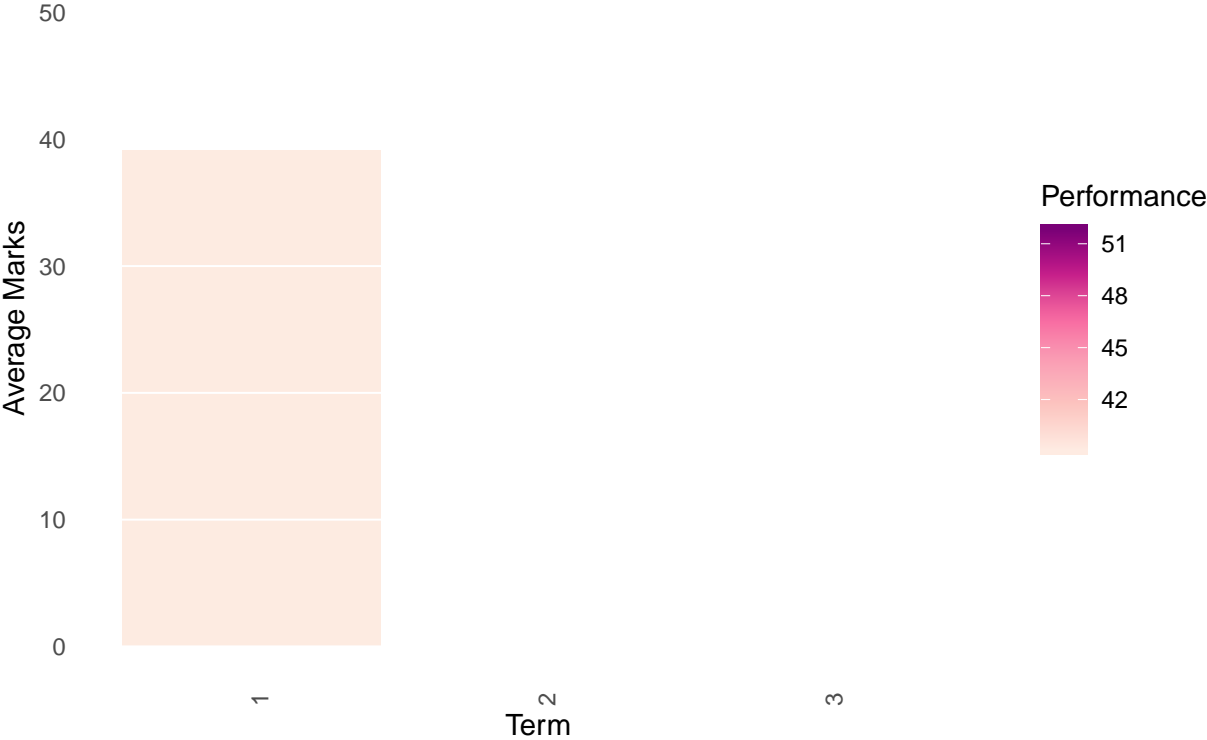
Overall Marks over the Year



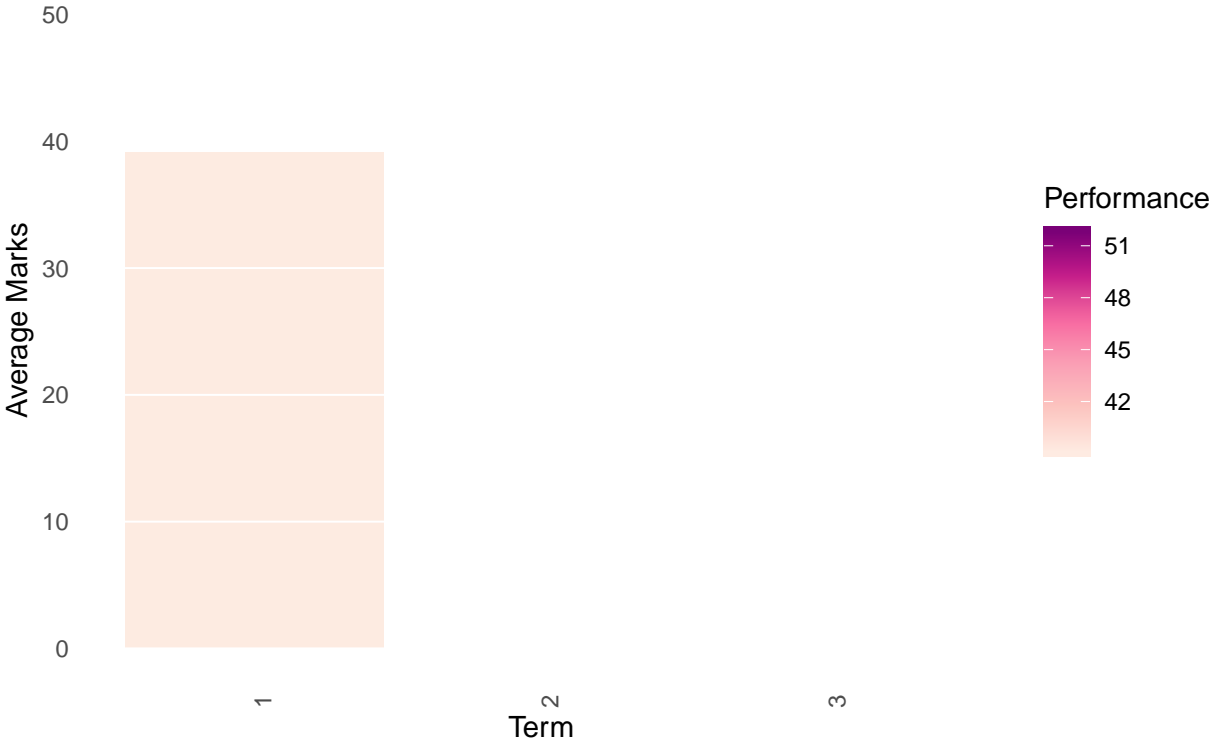
Overall Marks over the Year



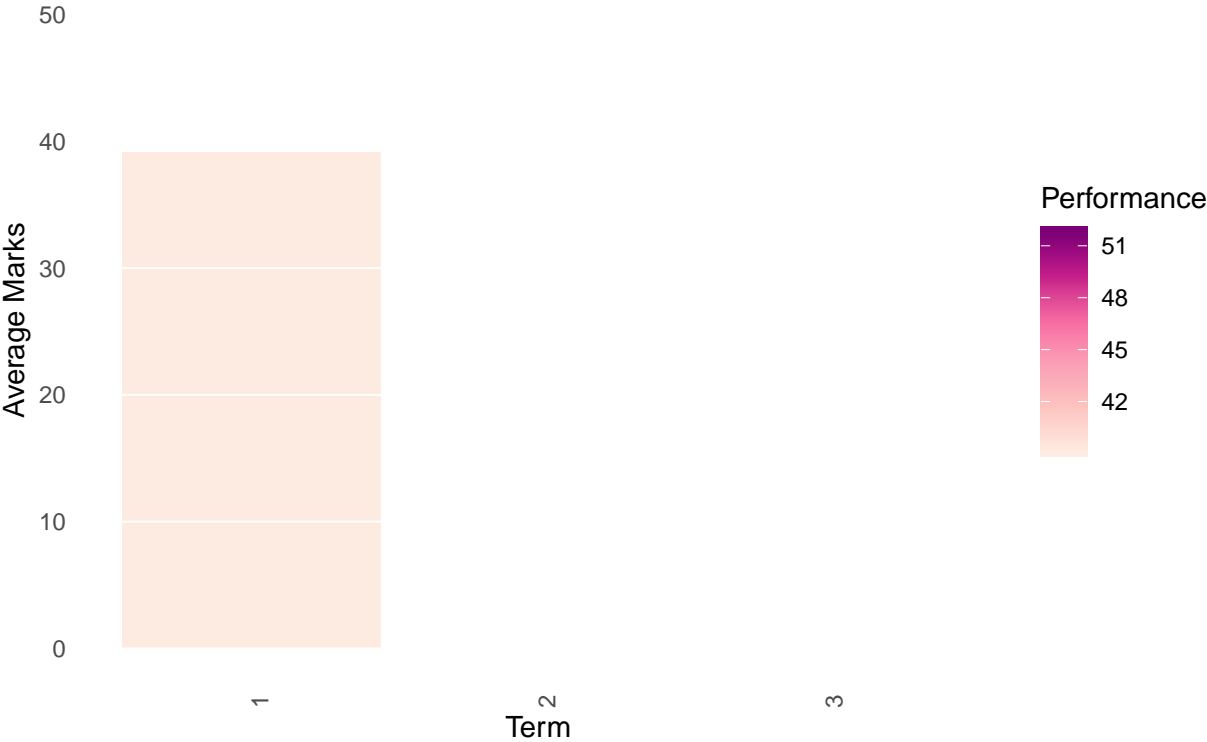
Overall Marks over the Year



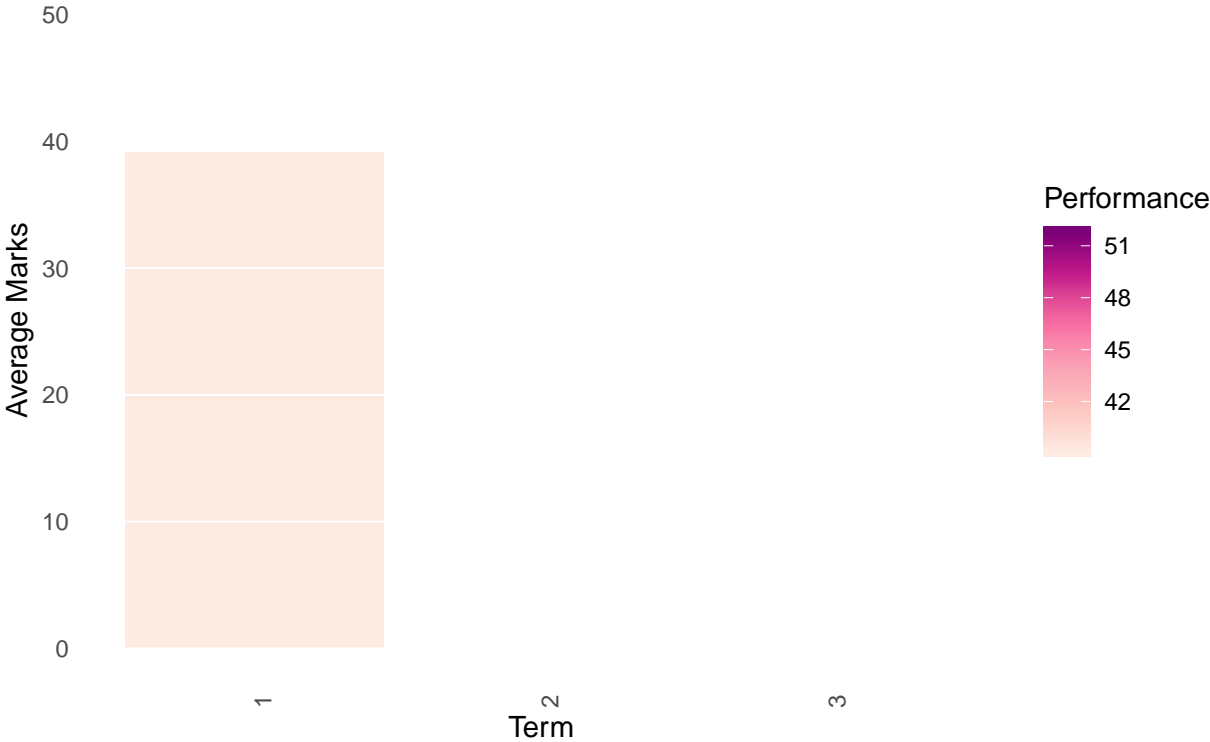
Overall Marks over the Year



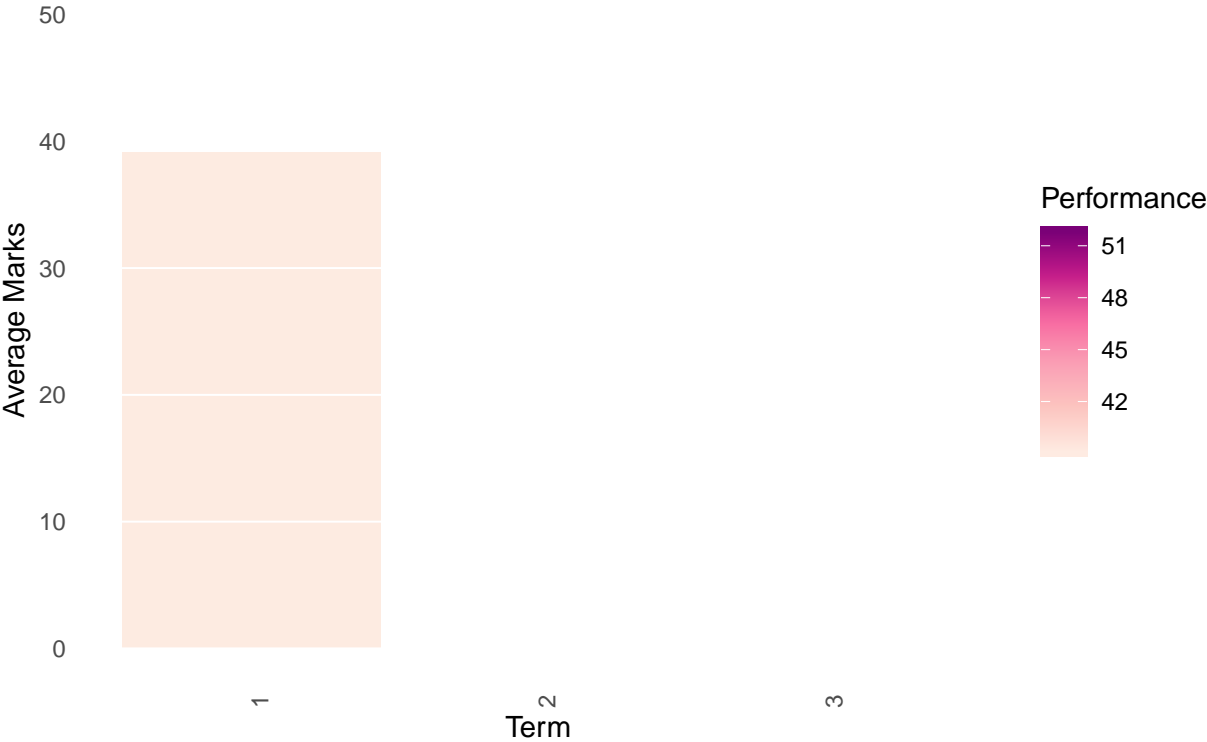
Overall Marks over the Year



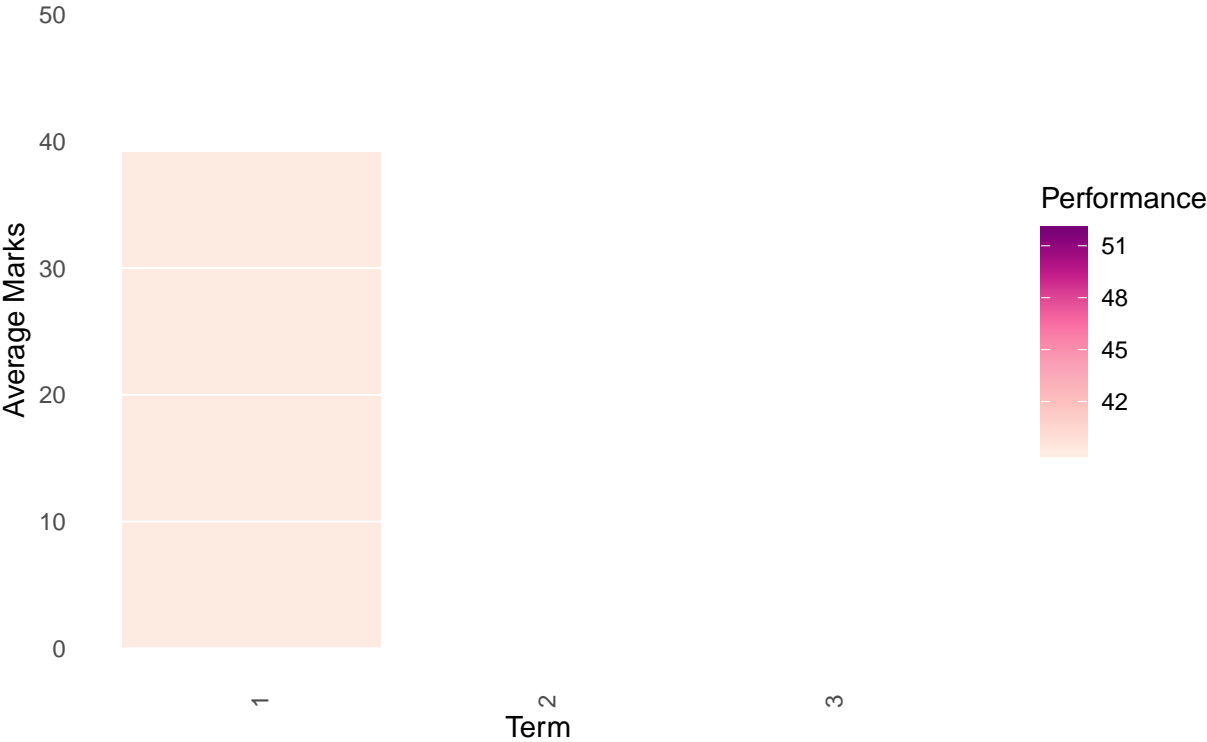
Overall Marks over the Year



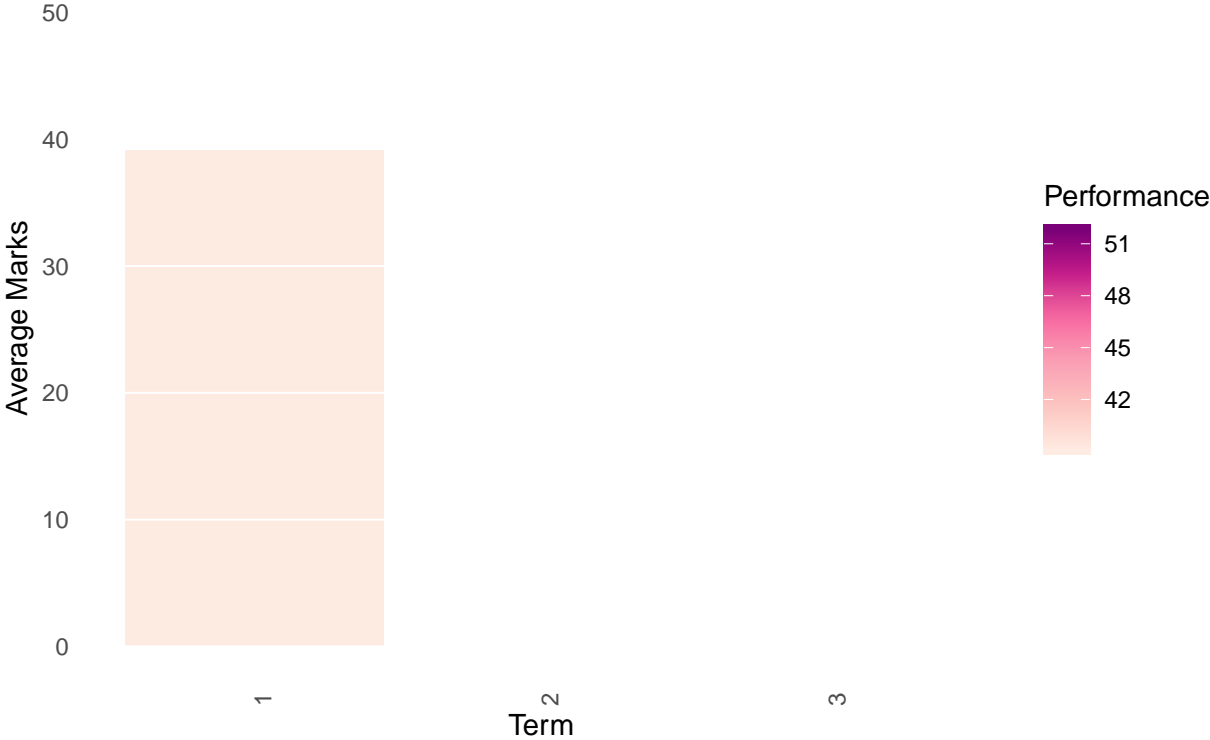
Overall Marks over the Year



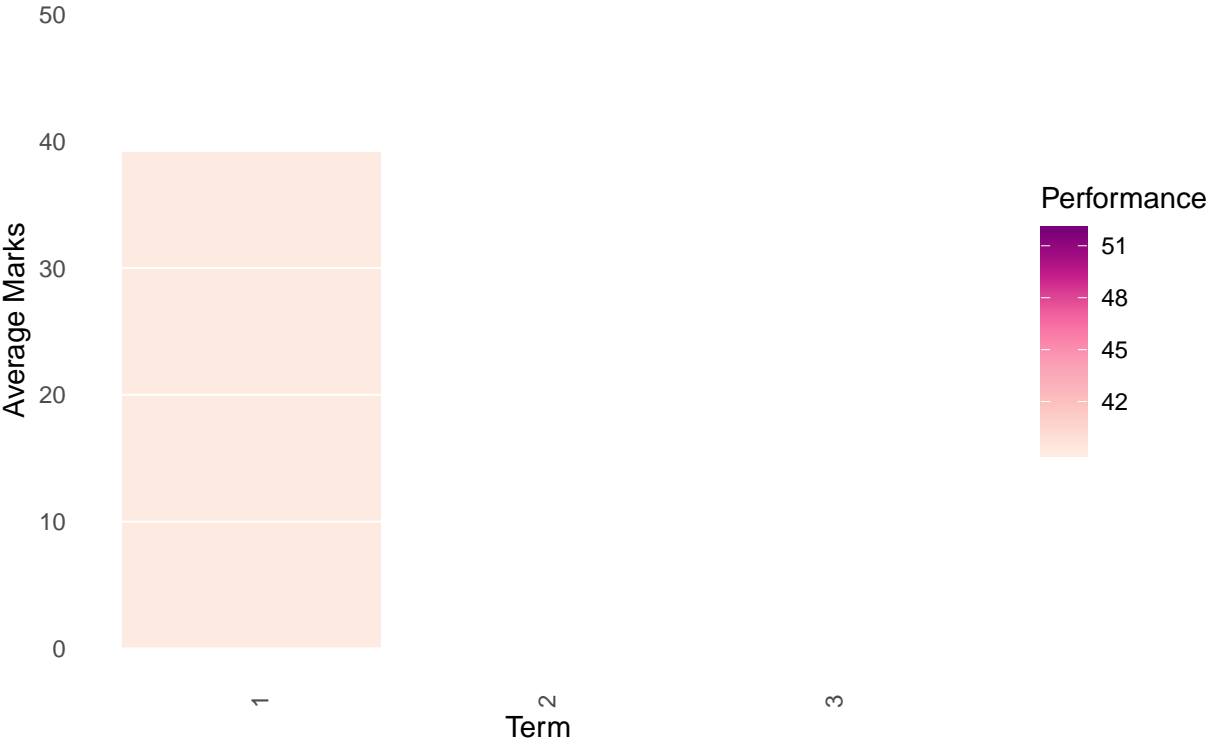
Overall Marks over the Year



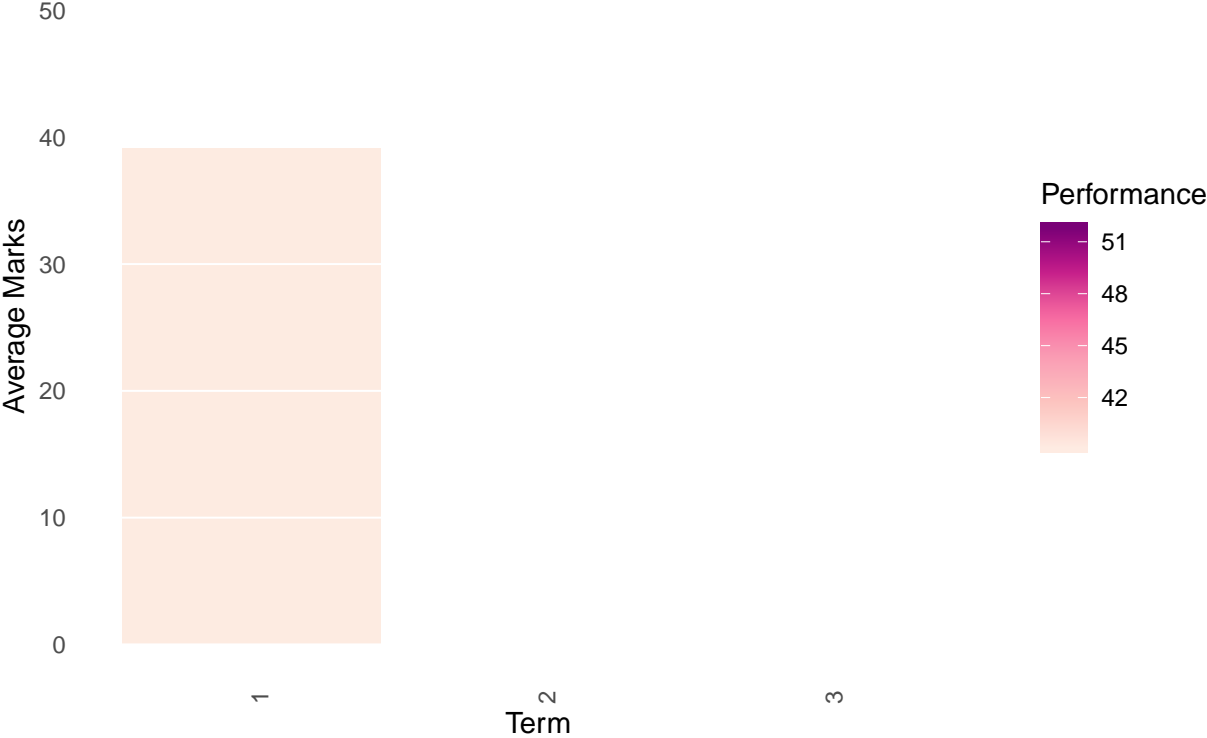
Overall Marks over the Year



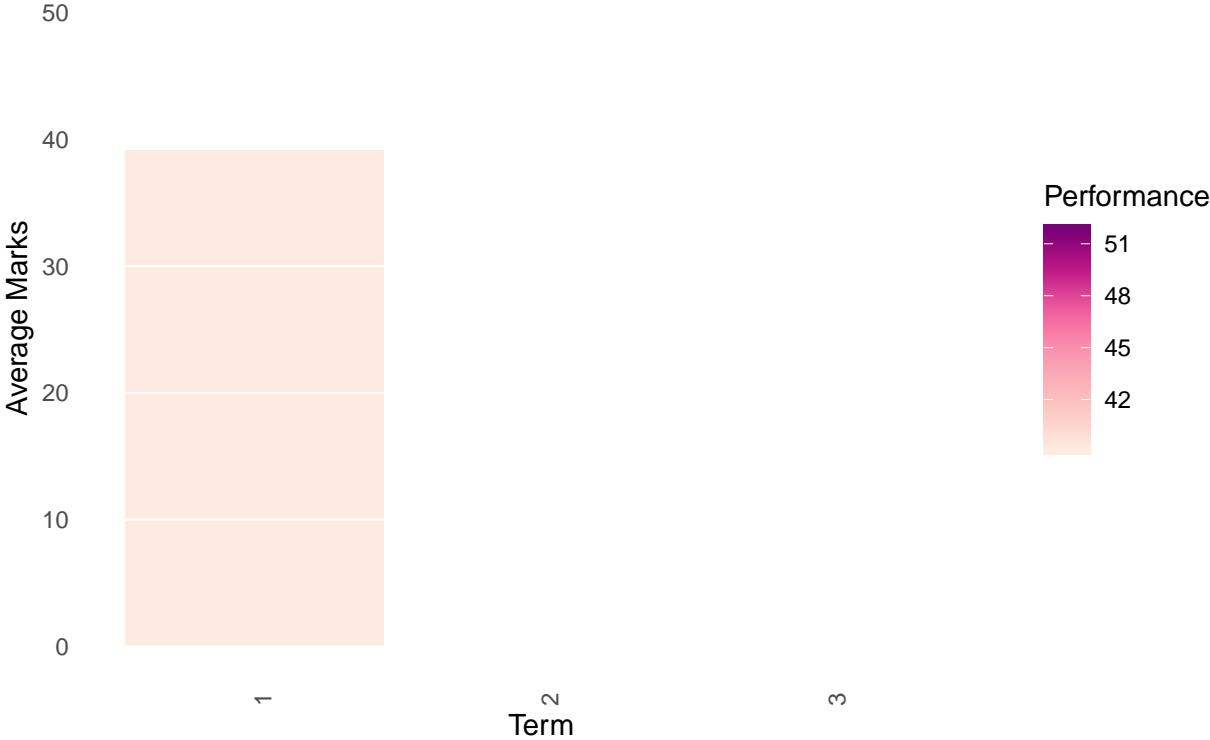
Overall Marks over the Year



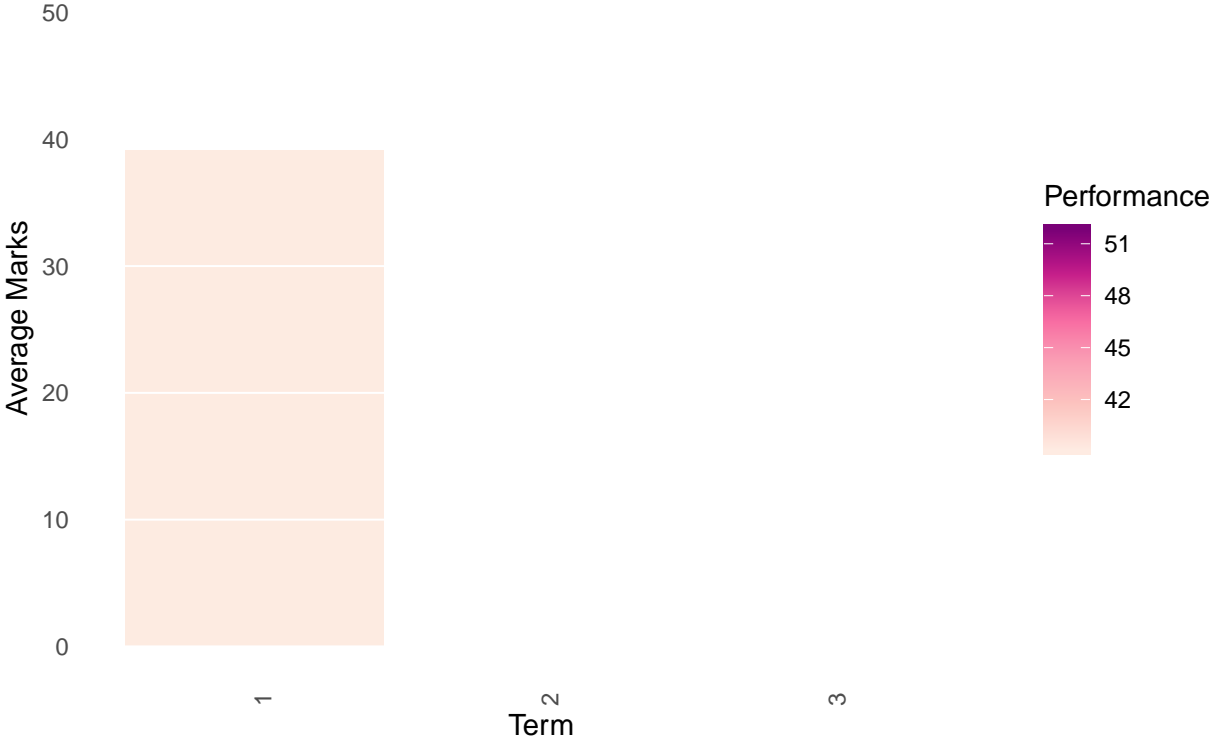
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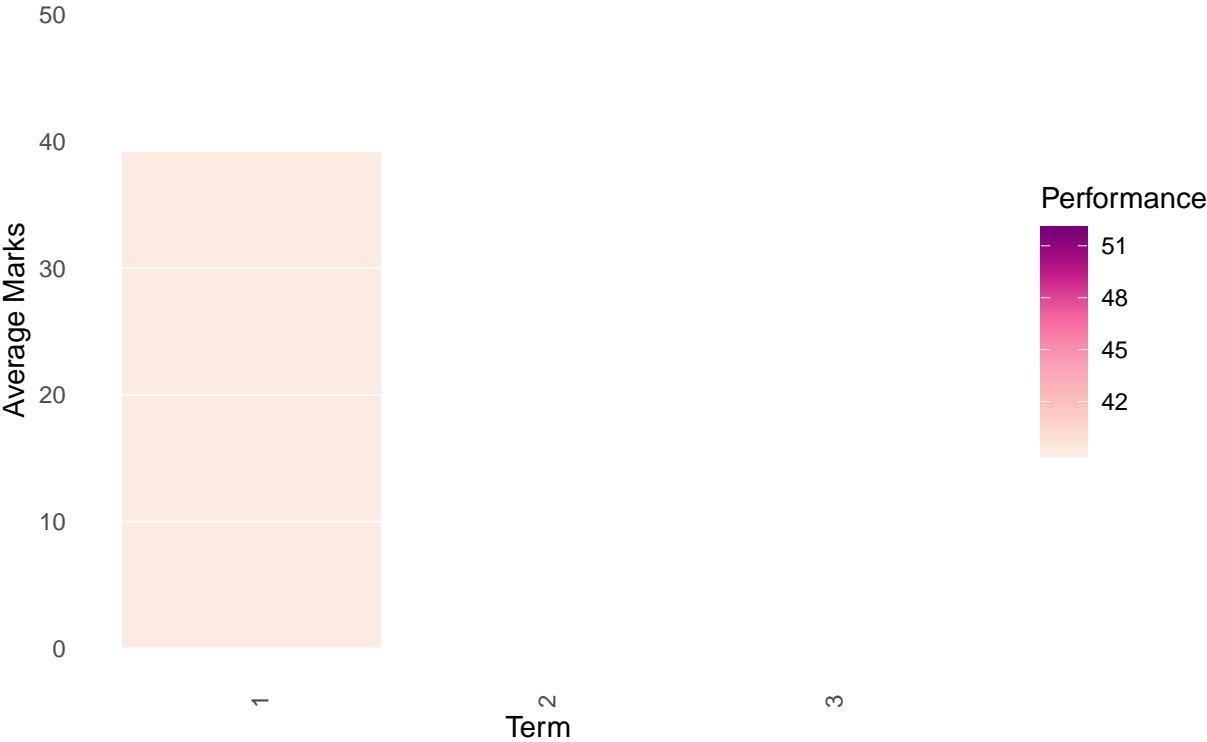
Overall Marks over the Year



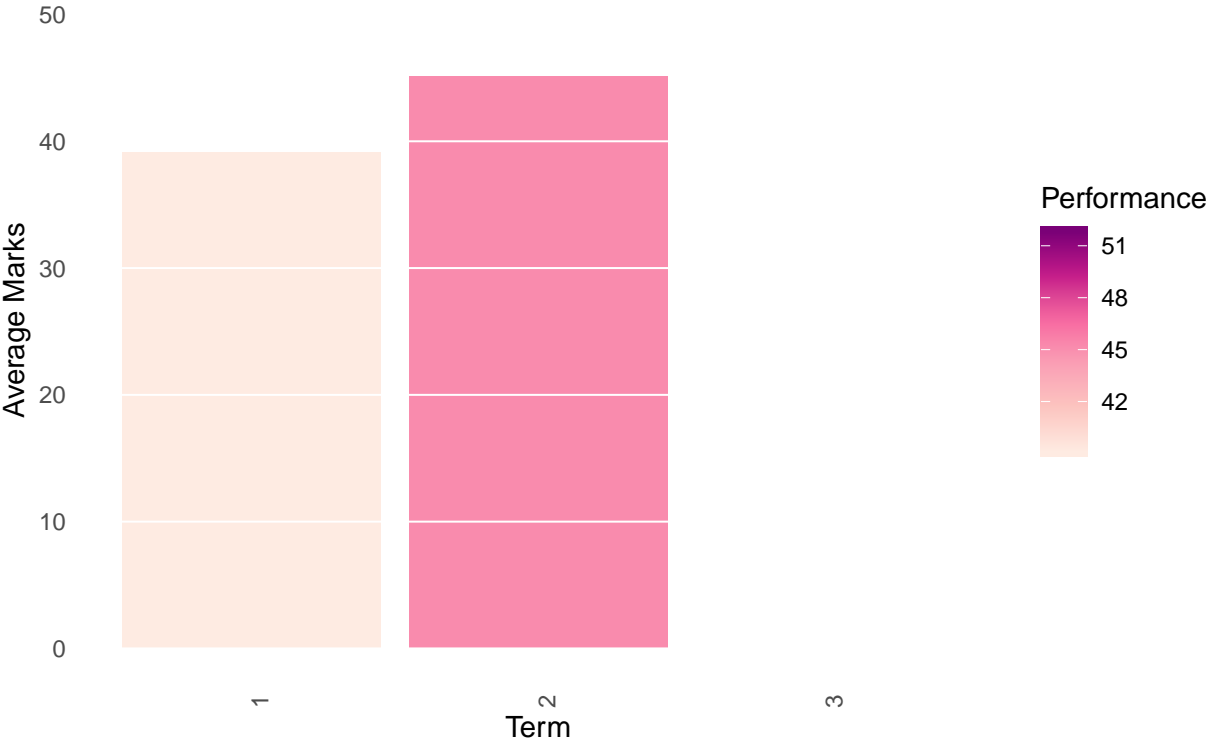
Overall Marks over the Year



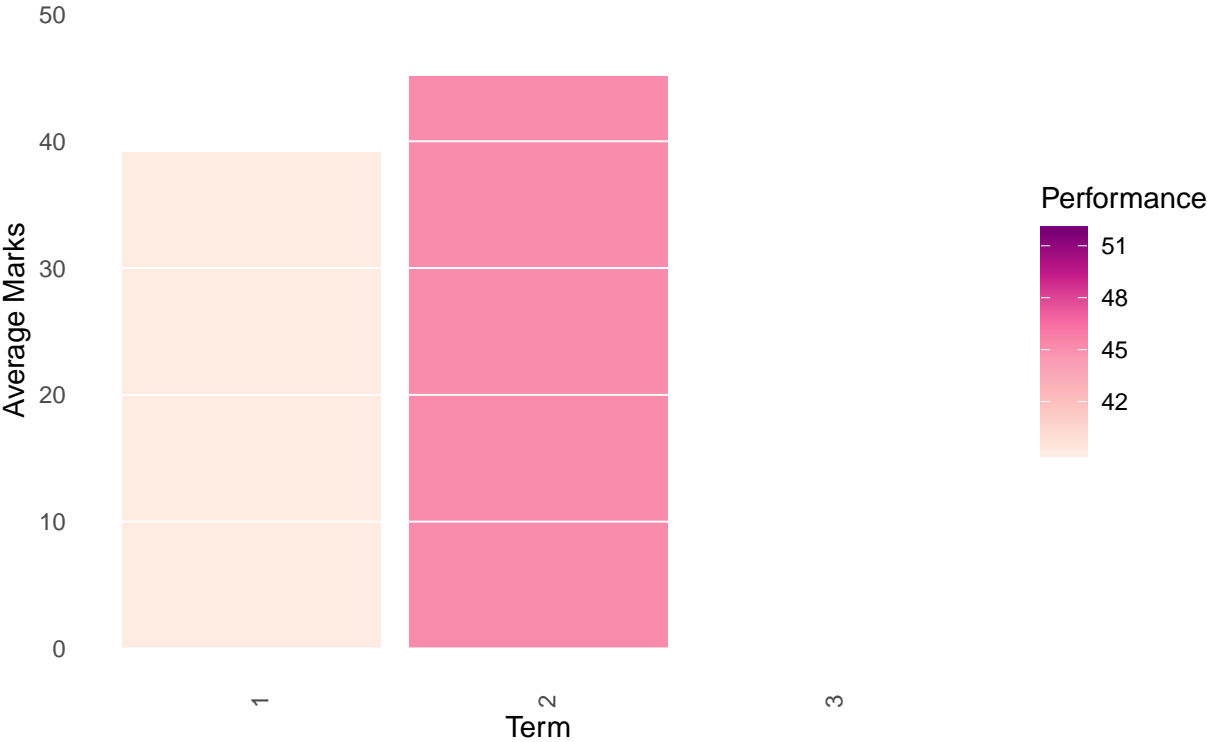
Overall Marks over the Year



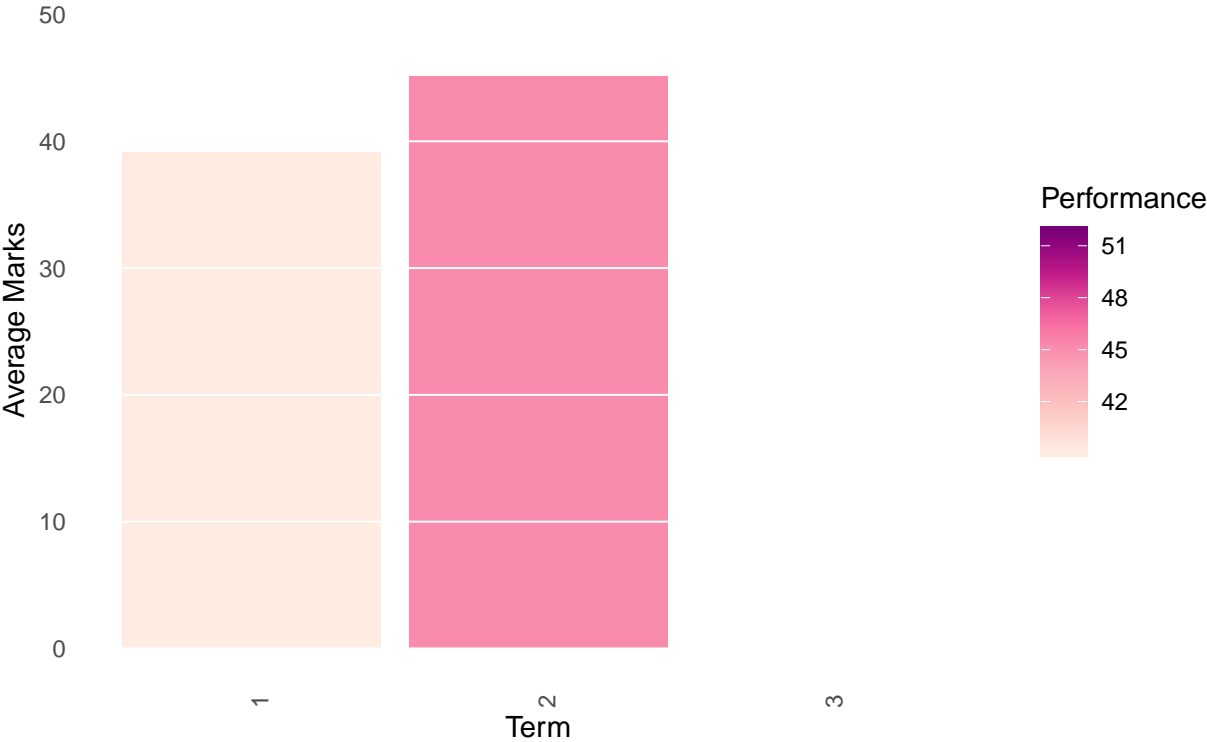
Overall Marks over the Year



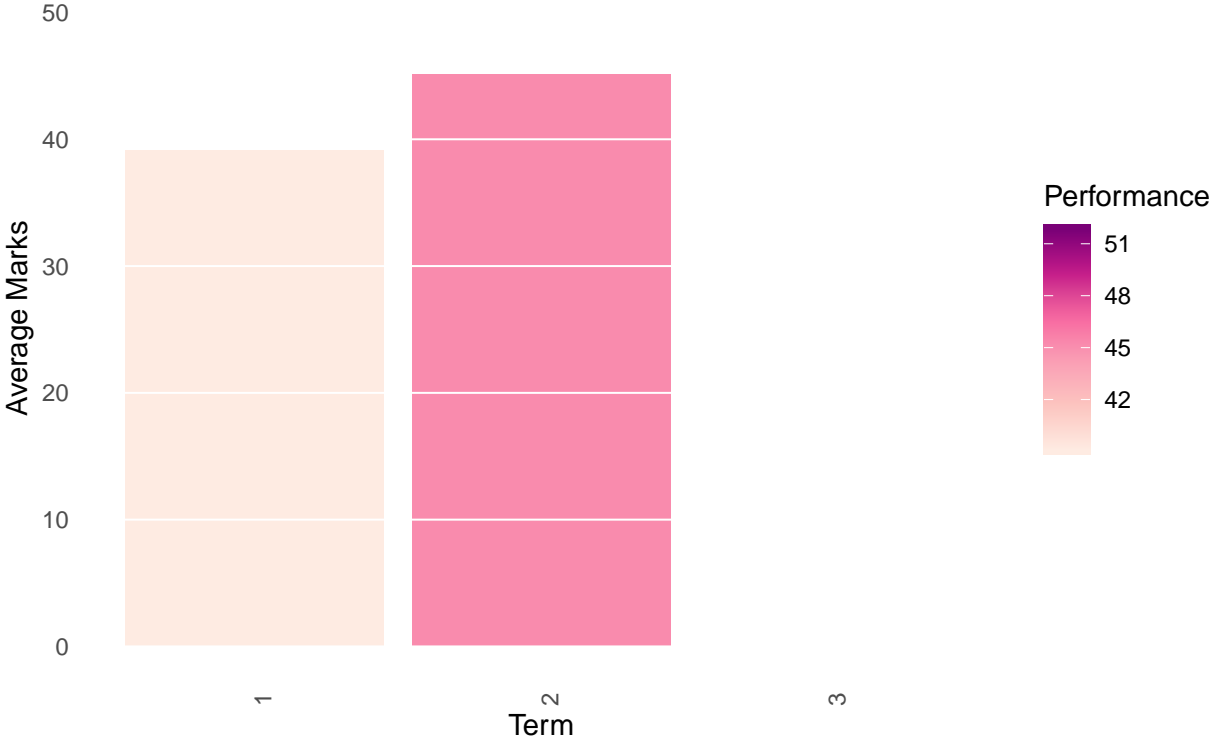
Overall Marks over the Year



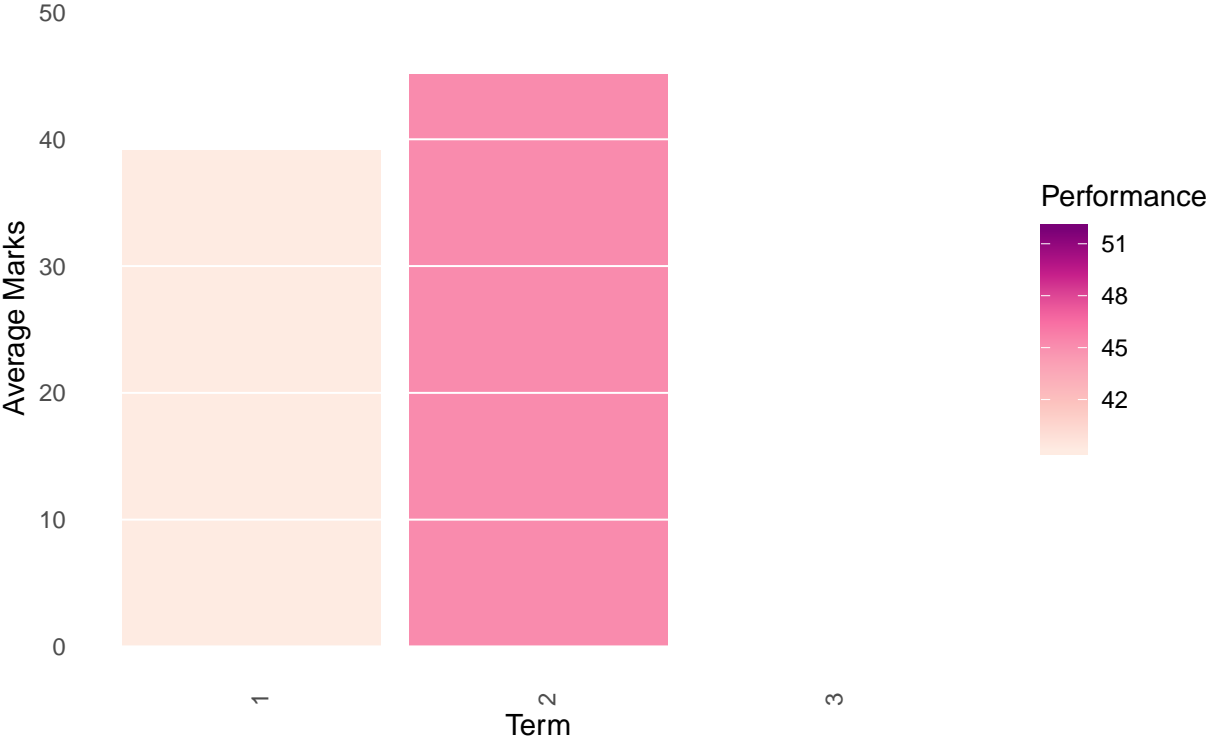
Overall Marks over the Year



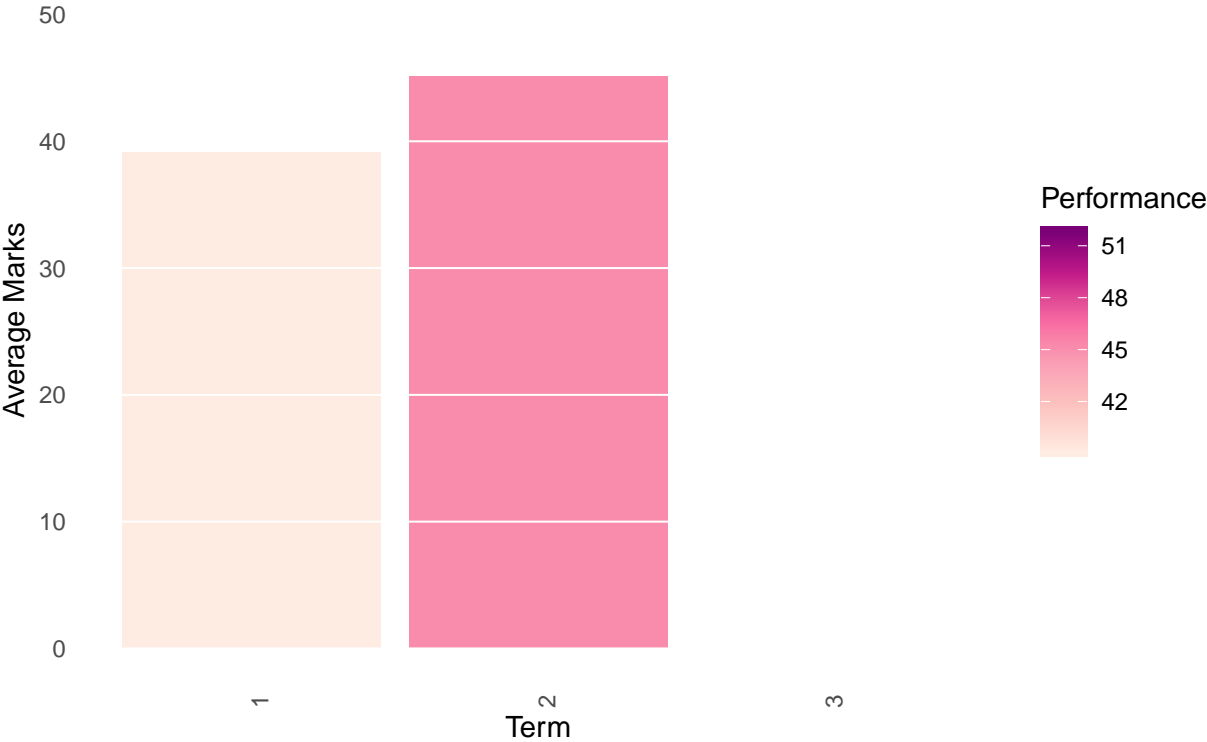
Overall Marks over the Year



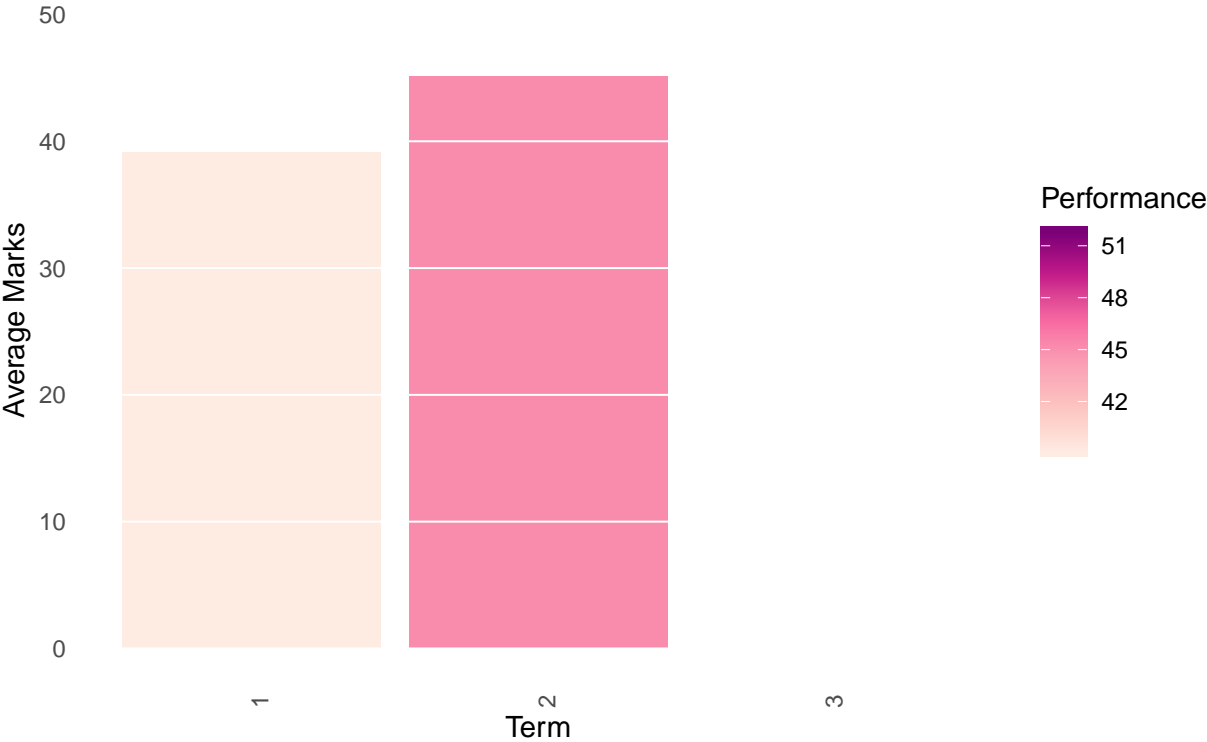
Overall Marks over the Year



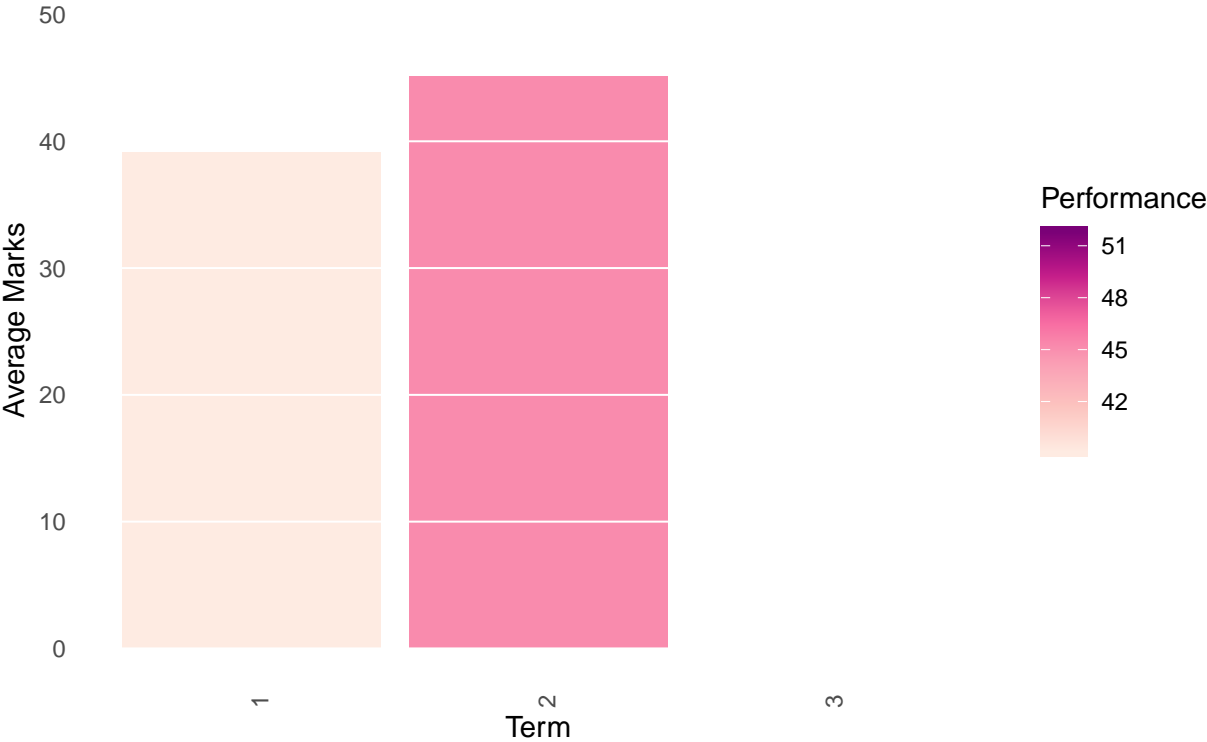
Overall Marks over the Year



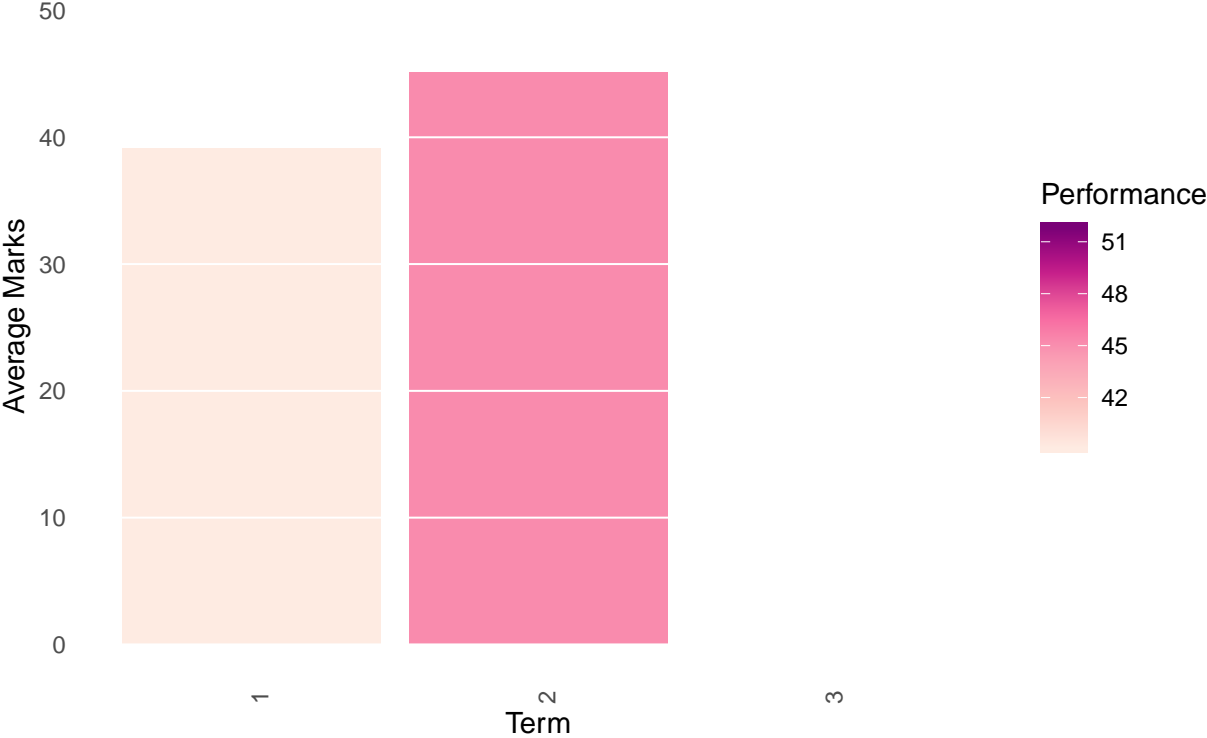
Overall Marks over the Year



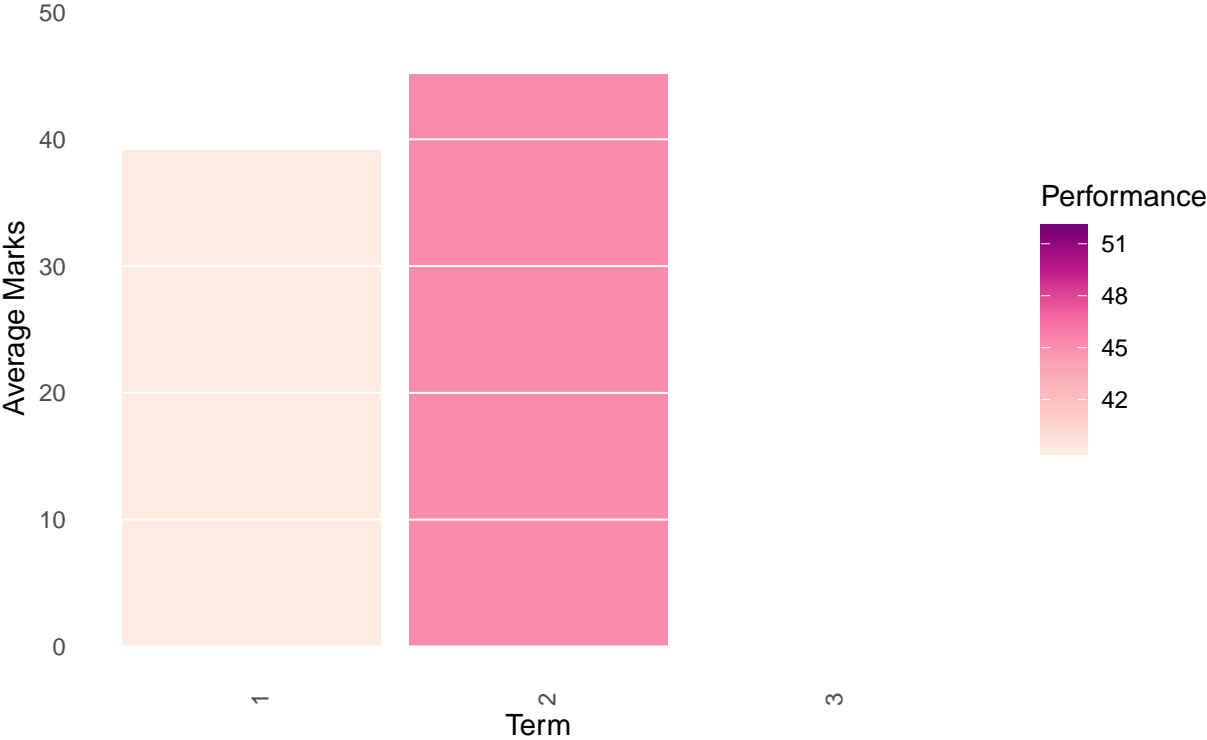
Overall Marks over the Year



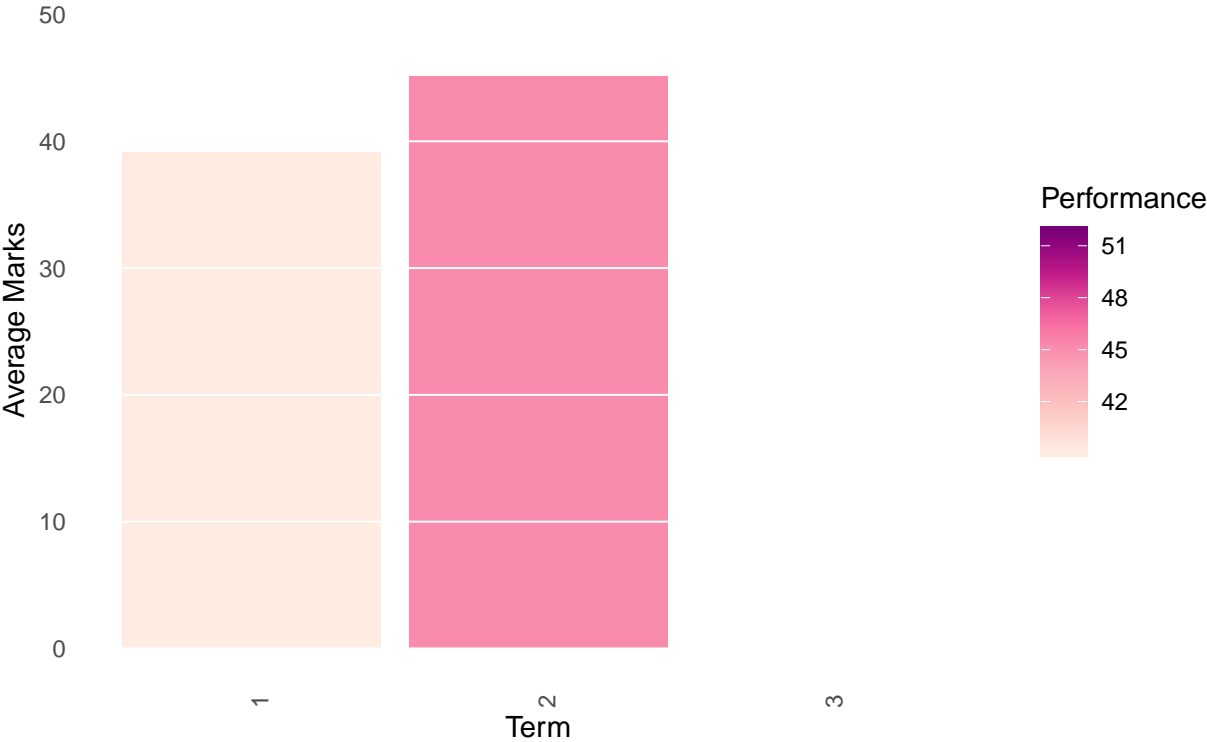
Overall Marks over the Year



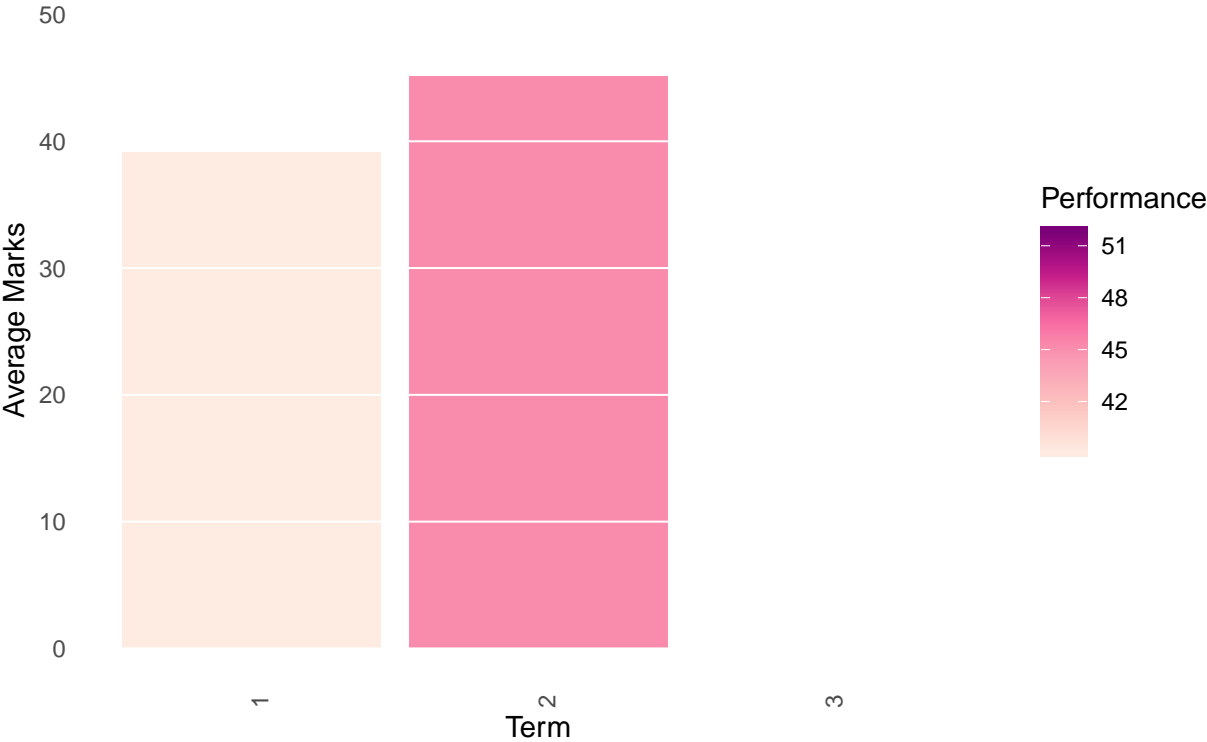
Overall Marks over the Year



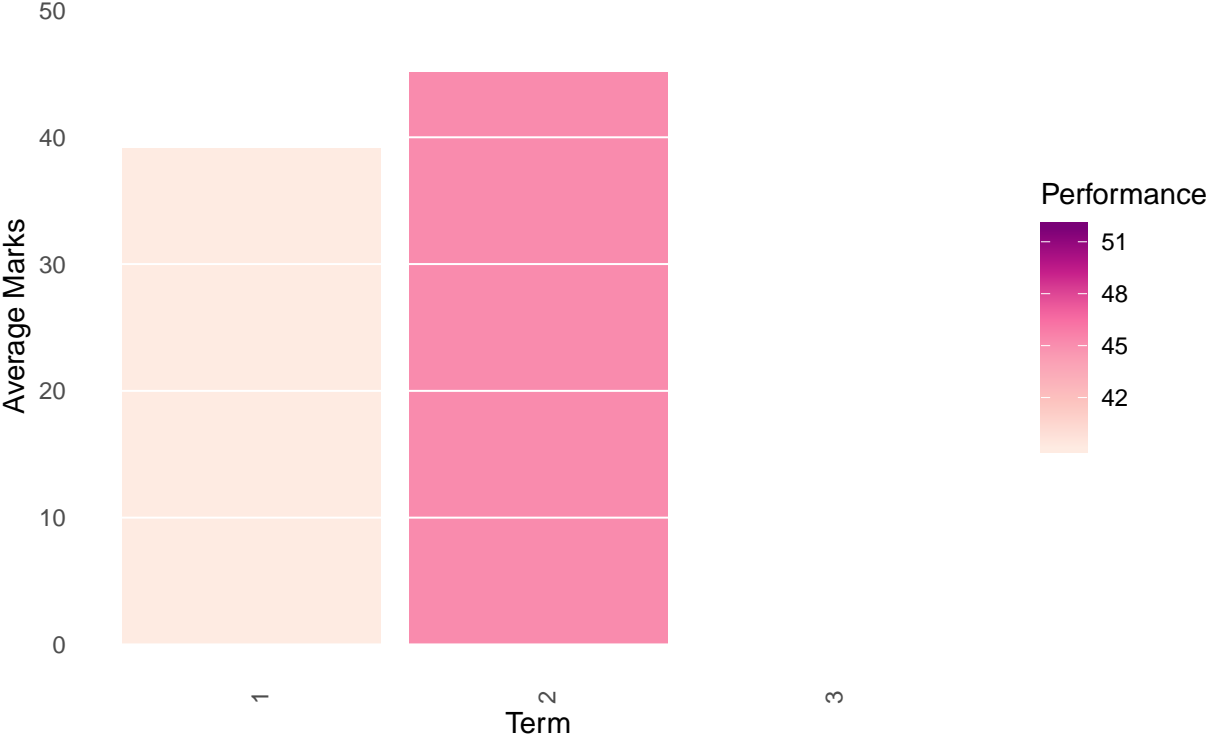
Overall Marks over the Year



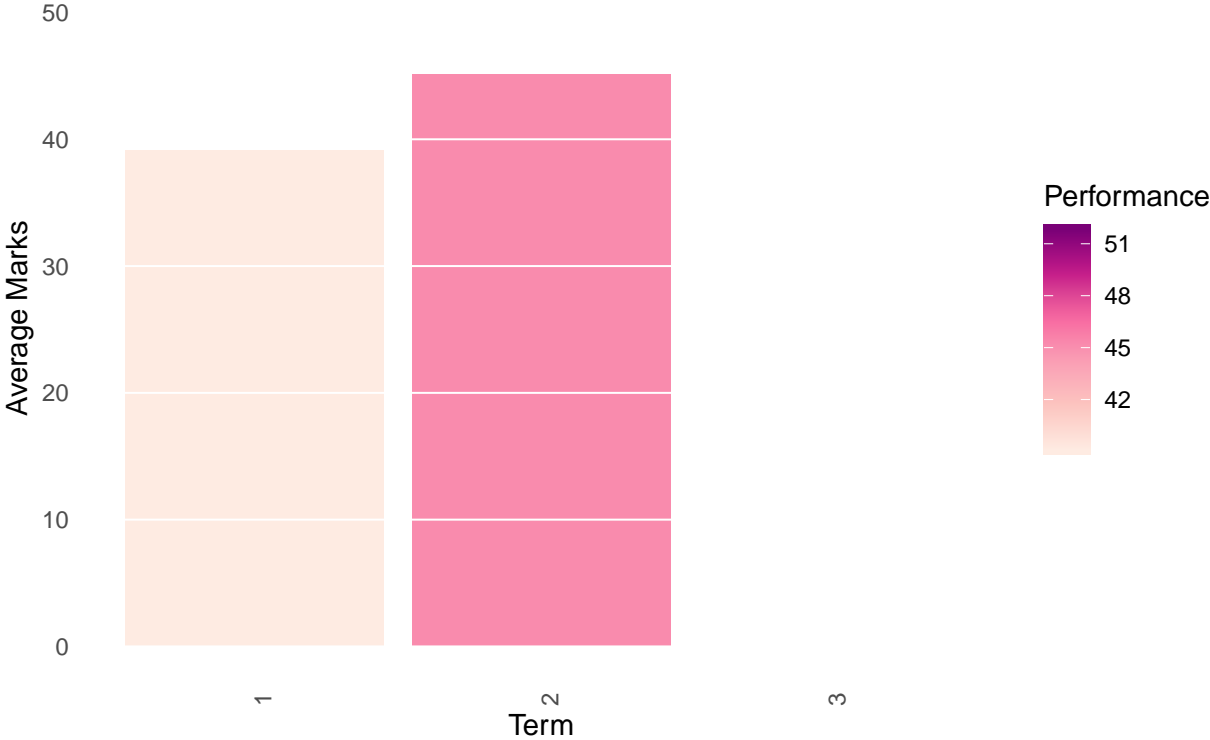
Overall Marks over the Year



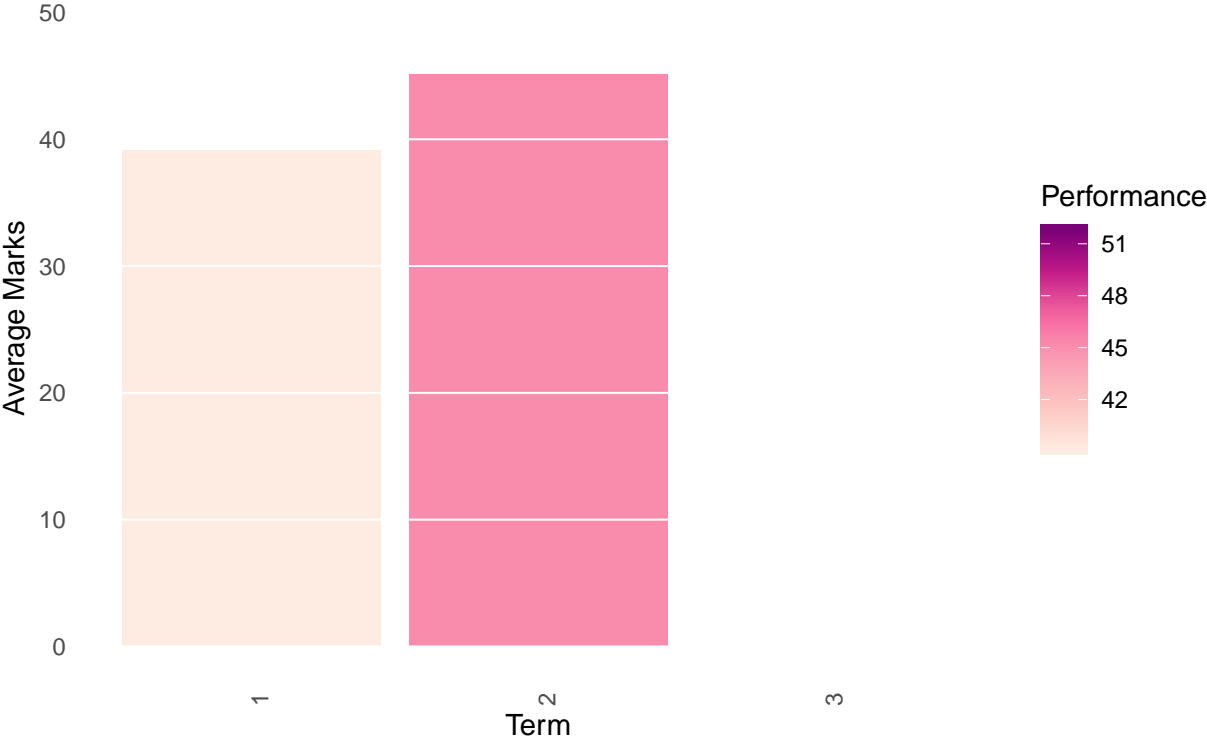
Overall Marks over the Year



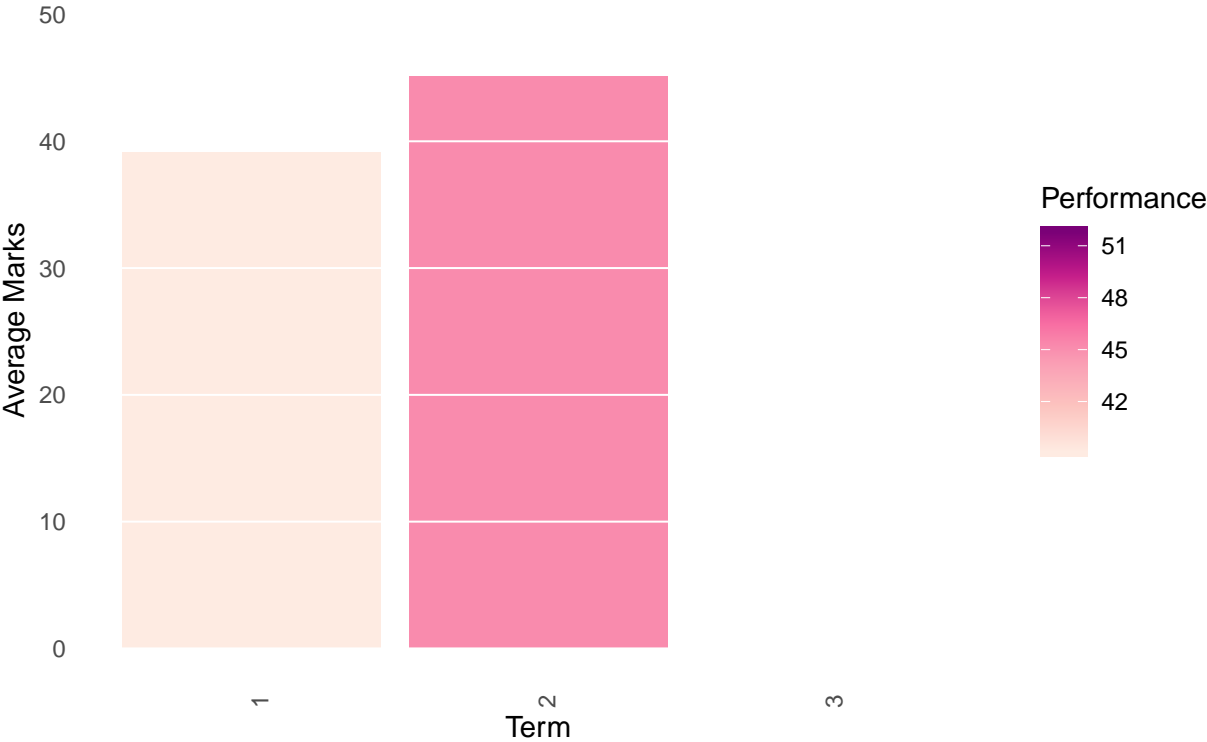
Overall Marks over the Year



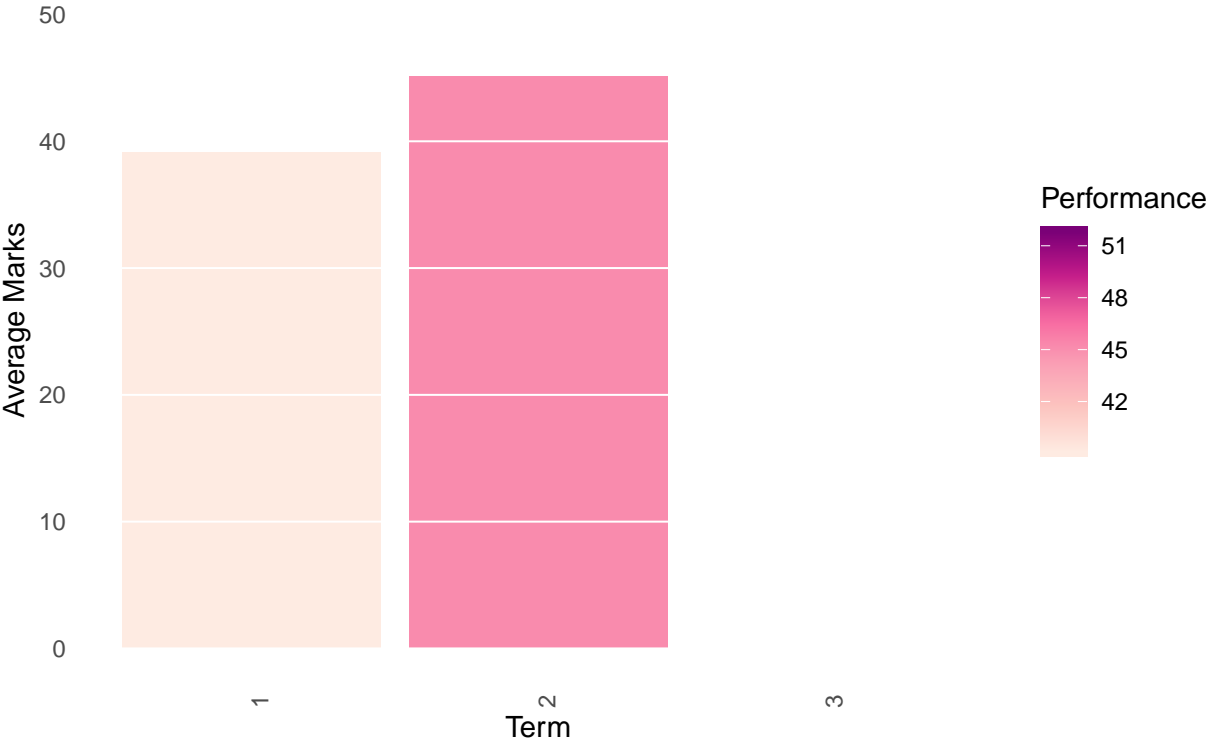
Overall Marks over the Year



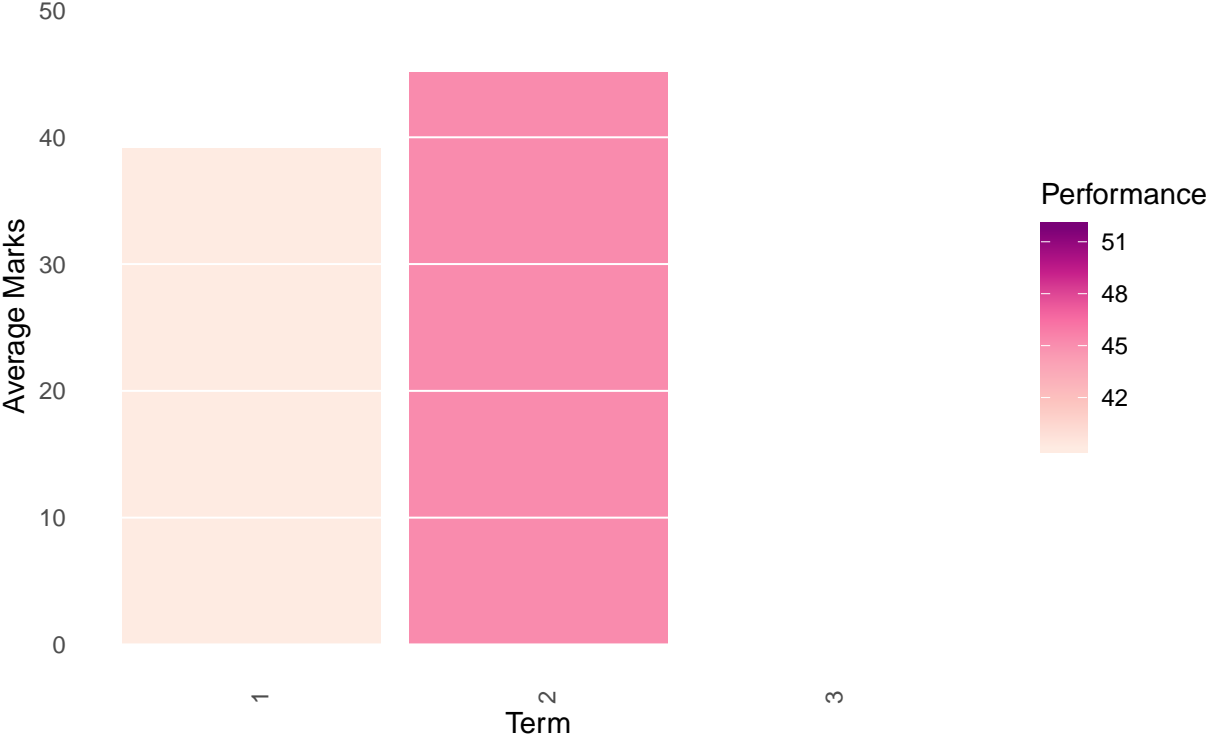
Overall Marks over the Year



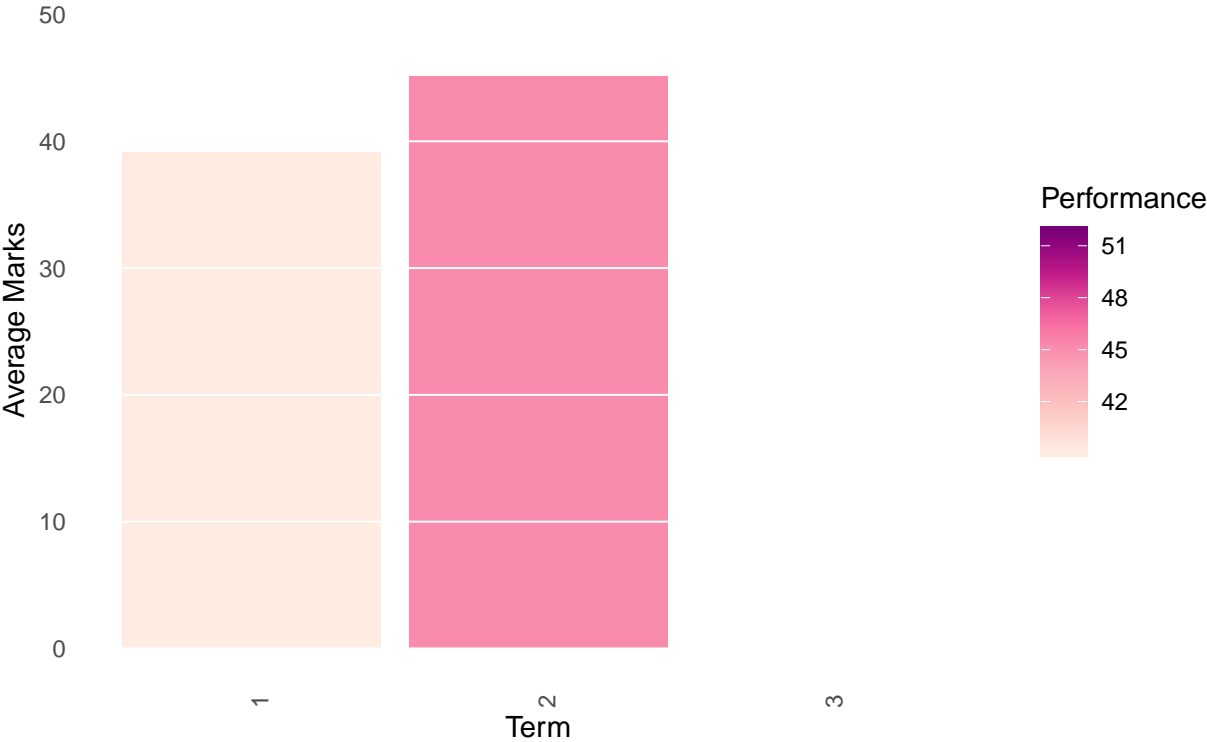
Overall Marks over the Year



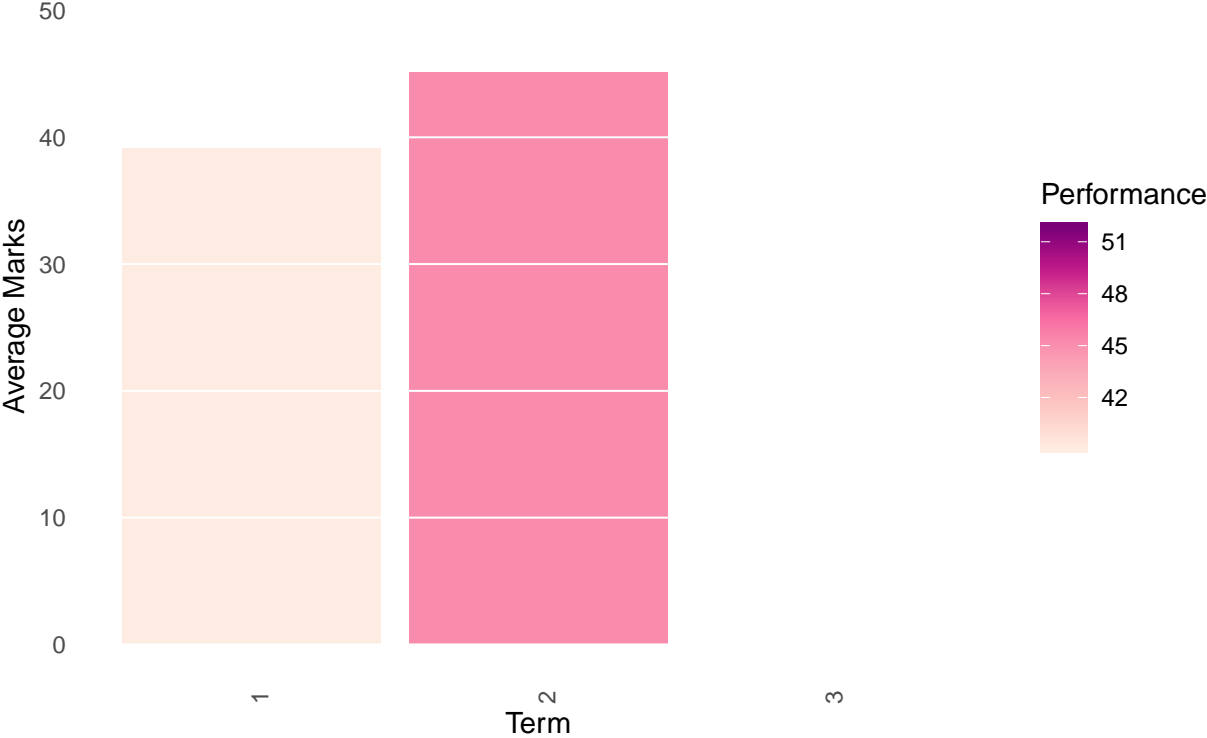
Overall Marks over the Year



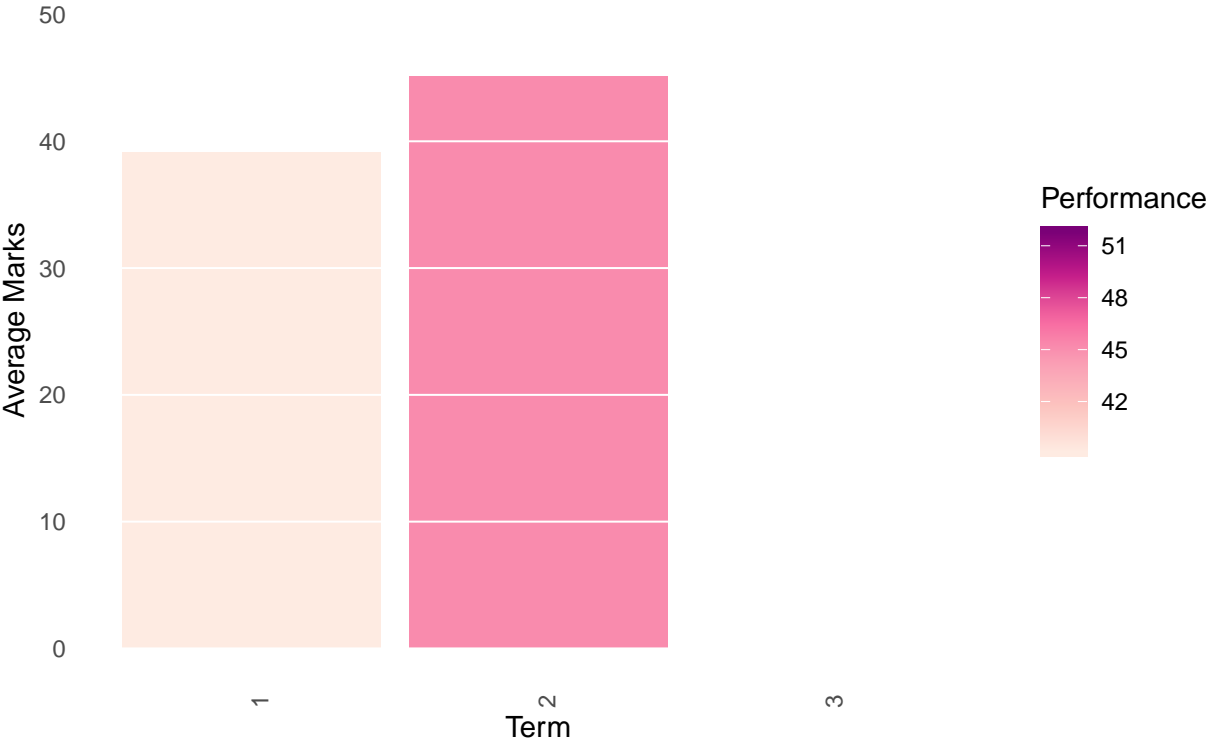
Overall Marks over the Year



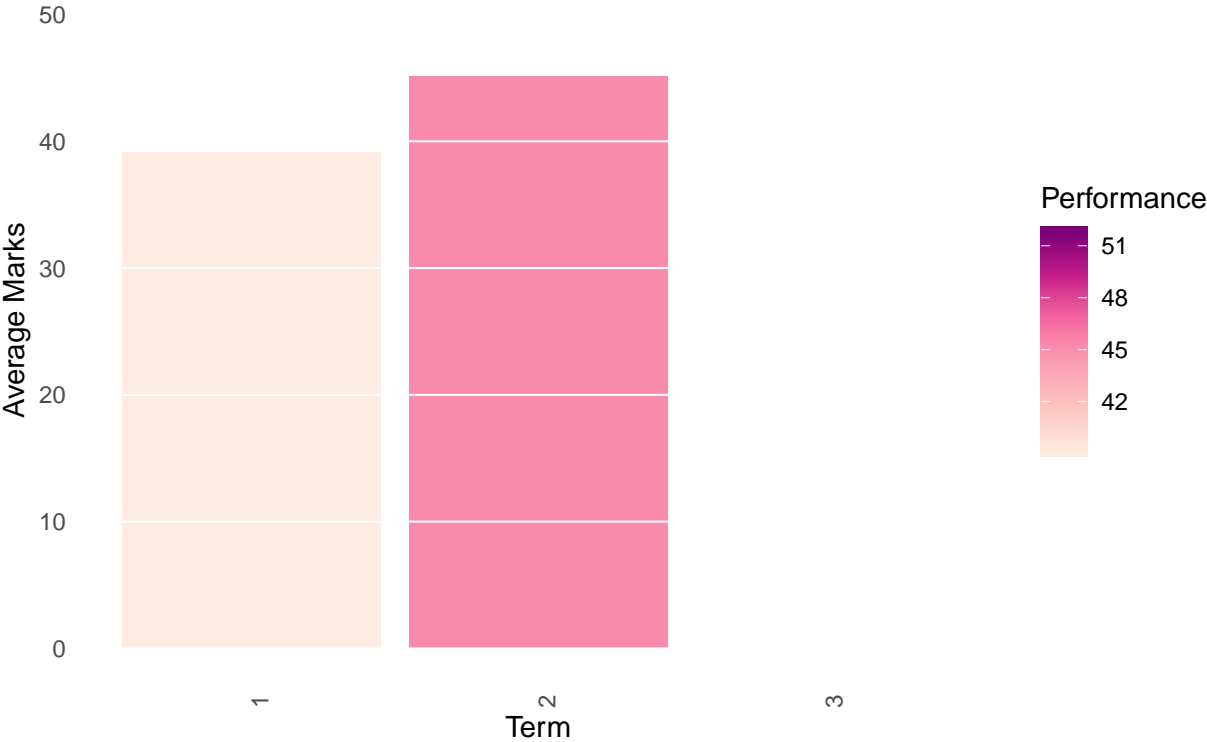
Overall Marks over the Year



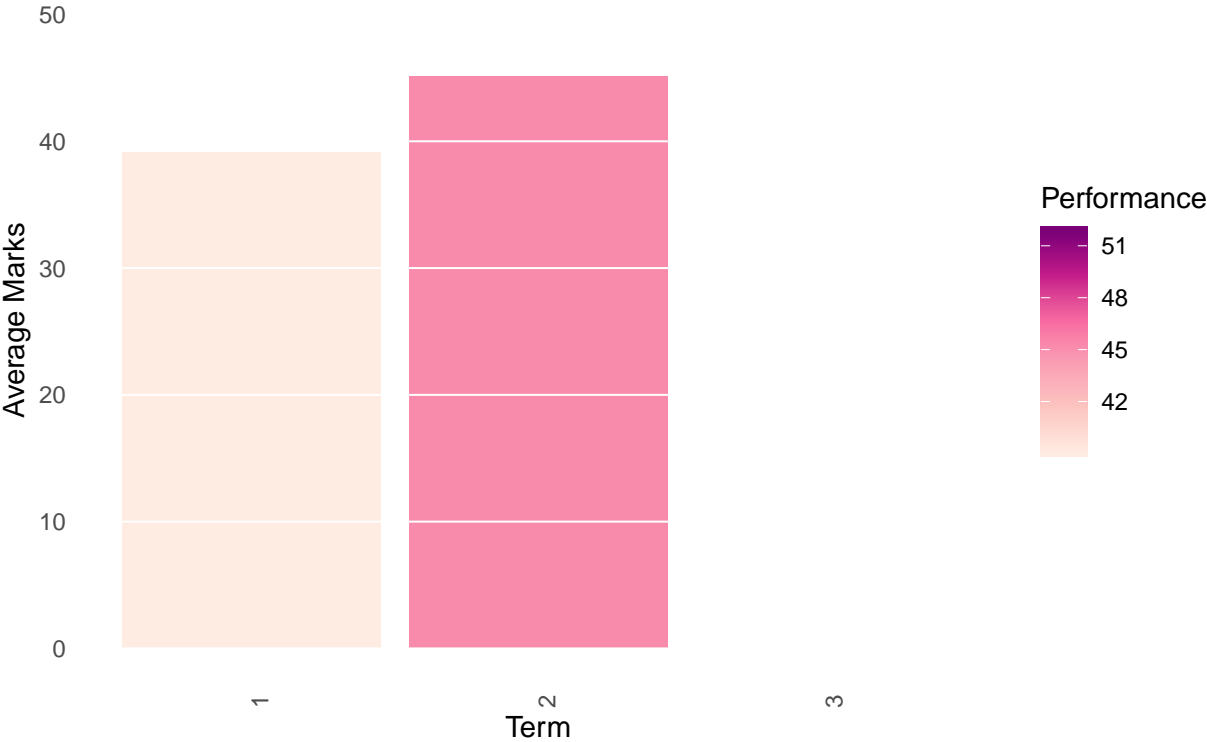
Overall Marks over the Year



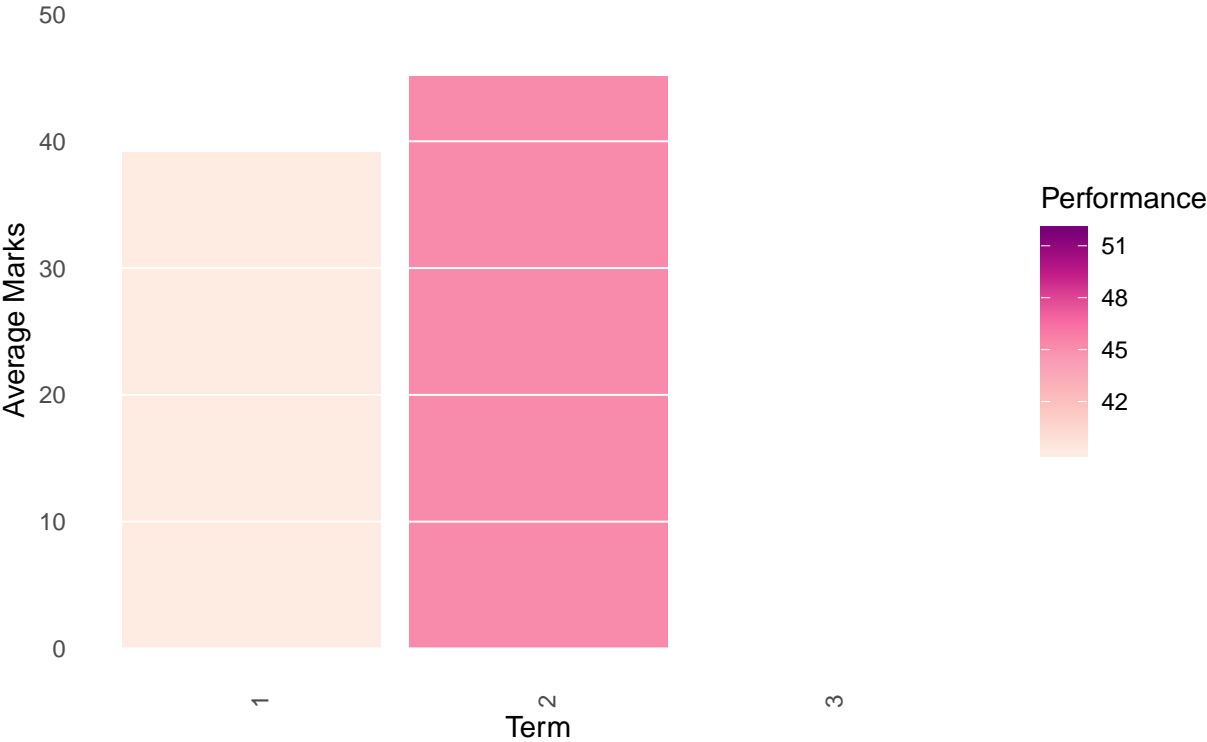
Overall Marks over the Year



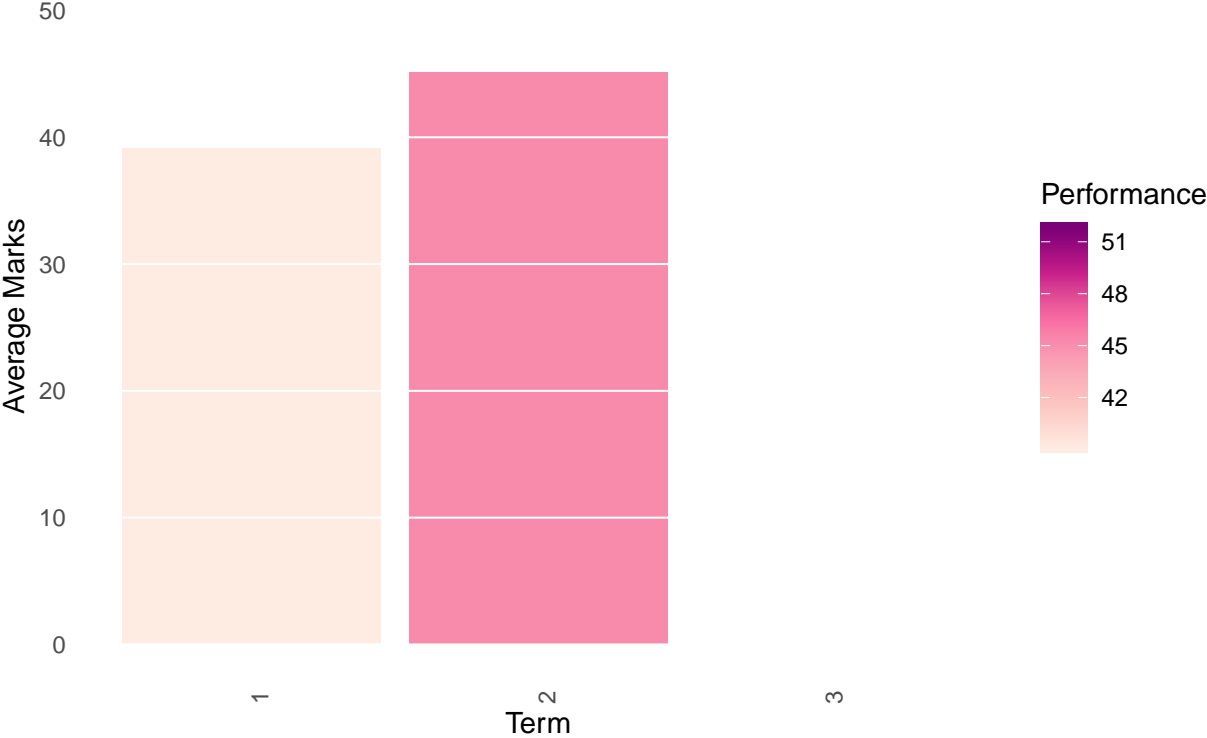
Overall Marks over the Year



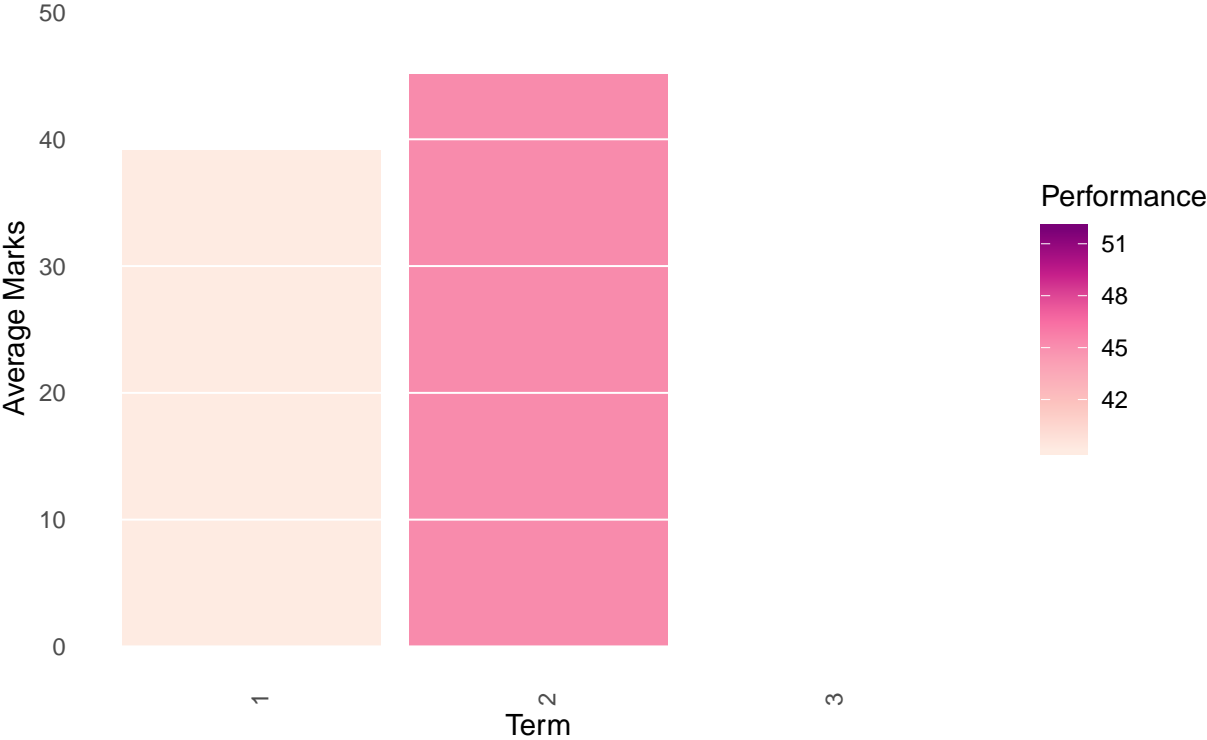
Overall Marks over the Year



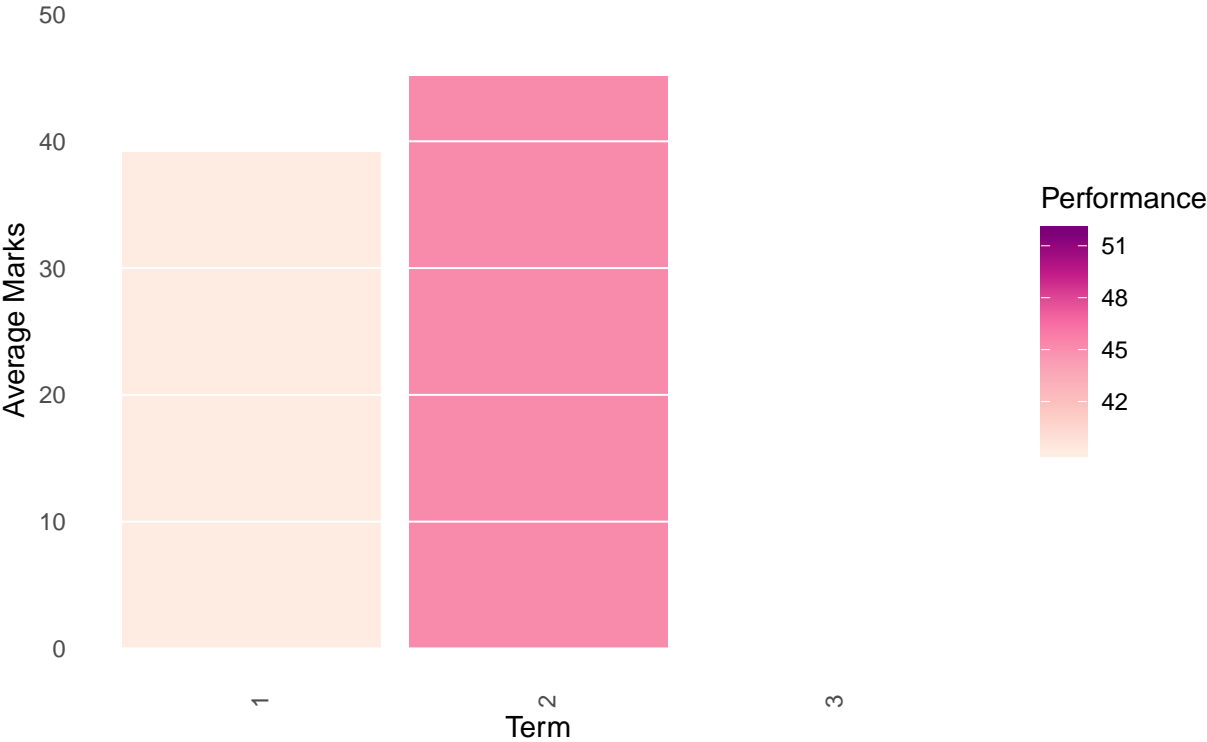
Overall Marks over the Year



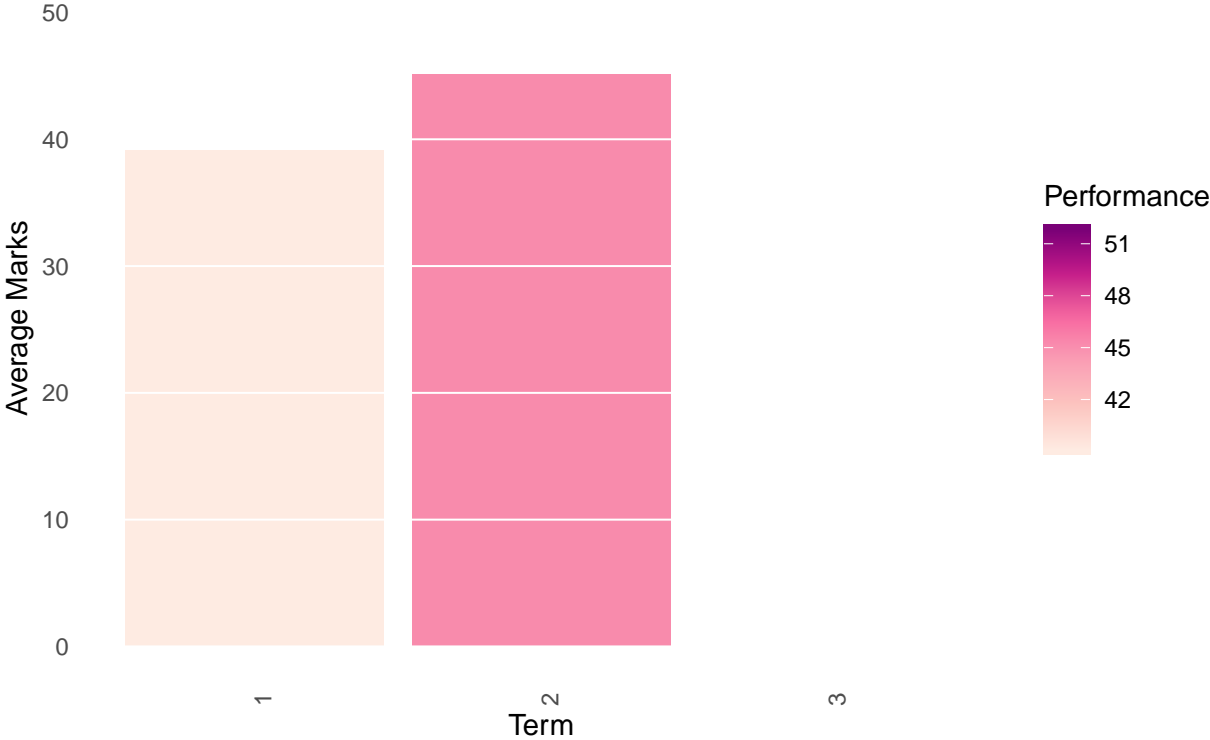
Overall Marks over the Year



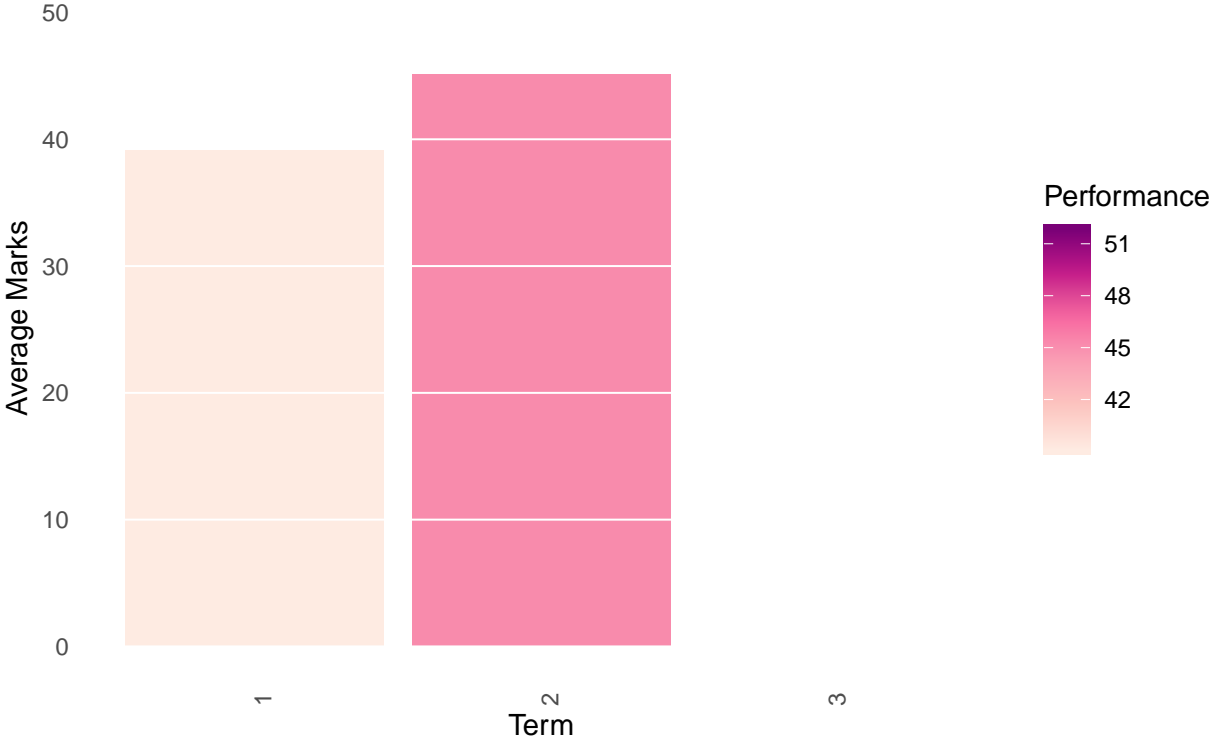
Overall Marks over the Year



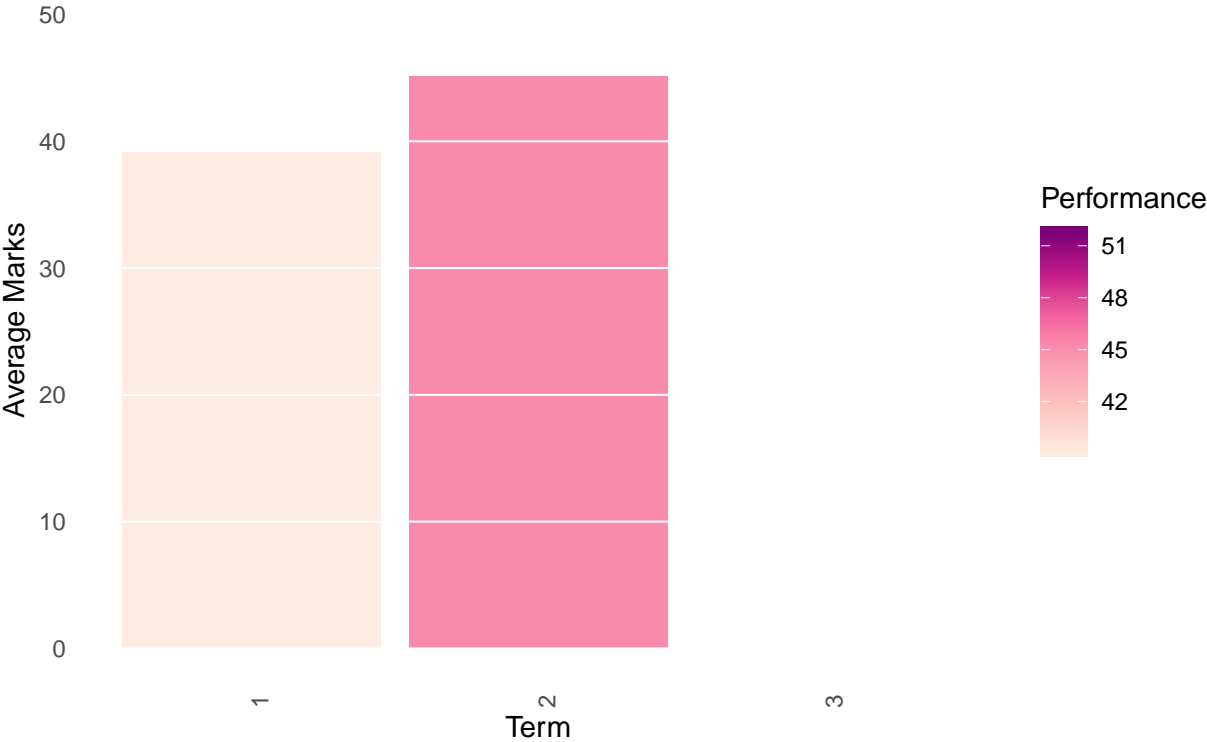
Overall Marks over the Year



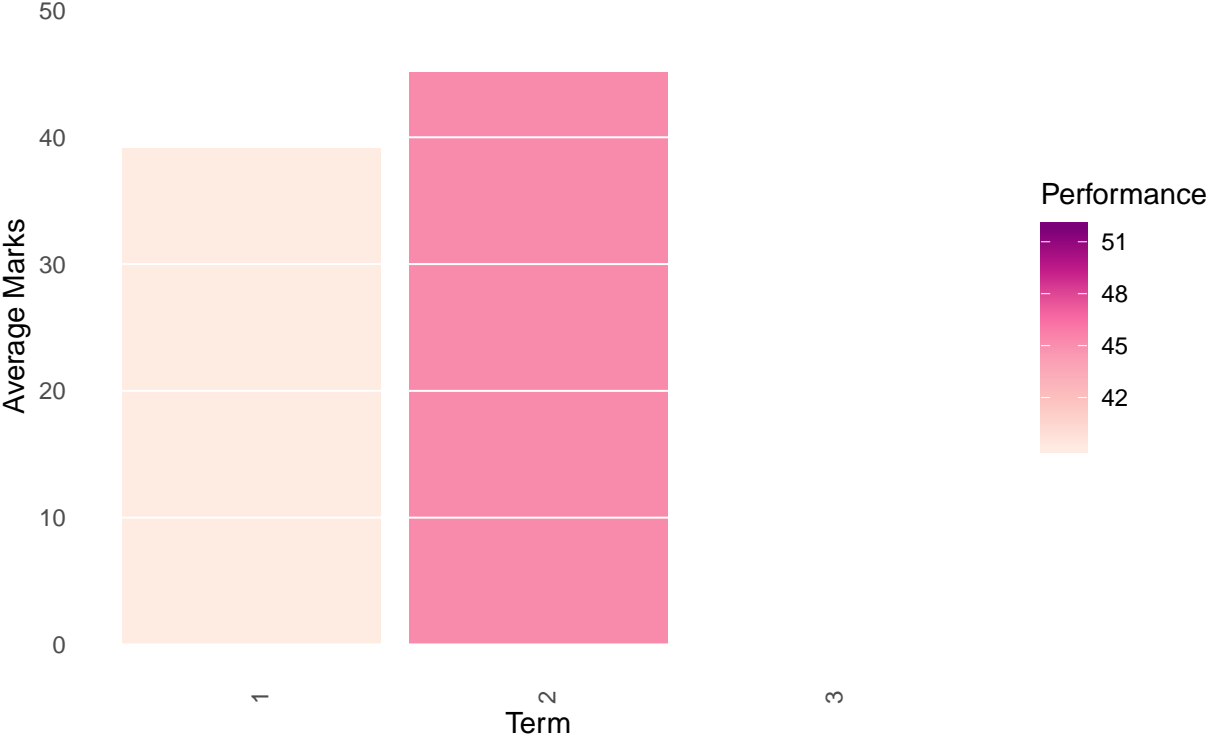
Overall Marks over the Year



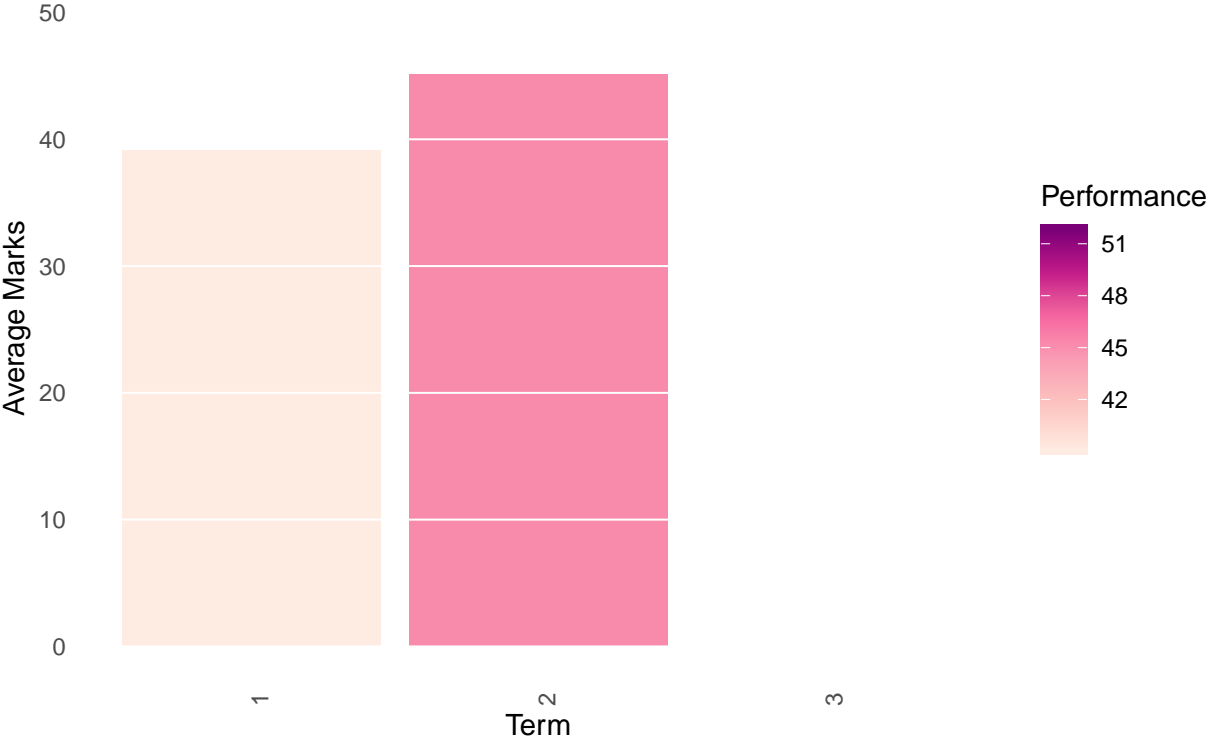
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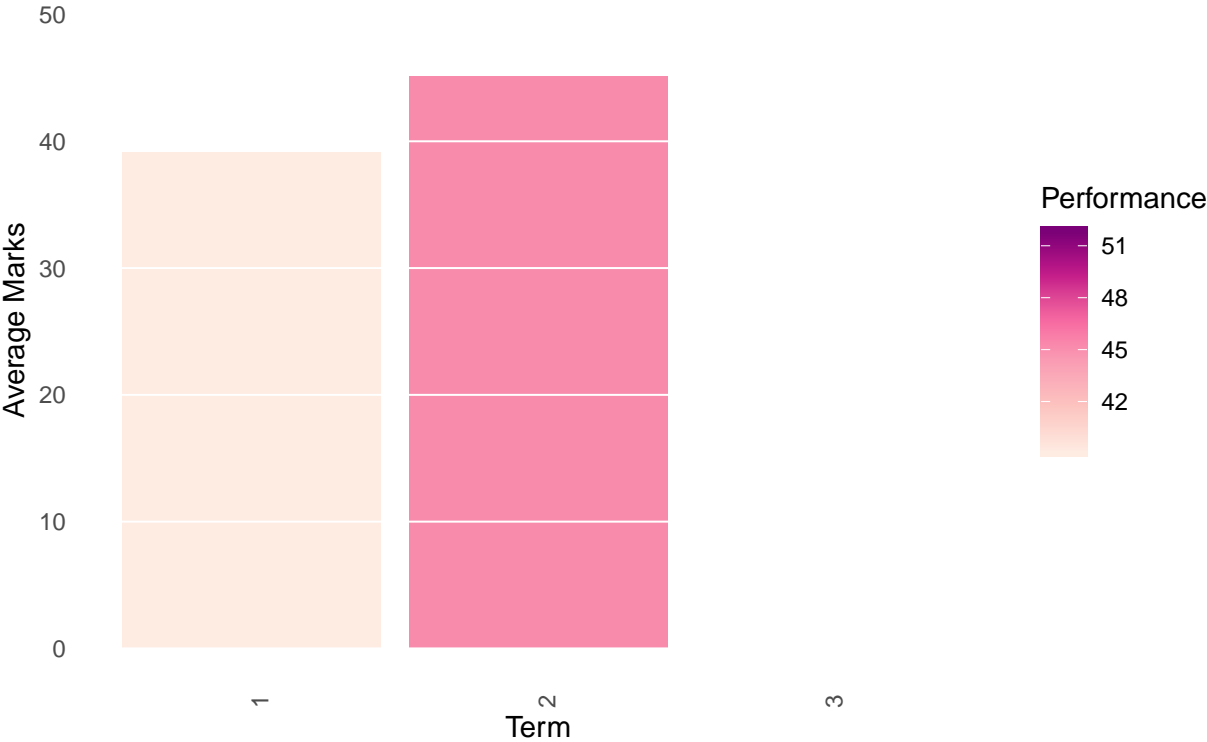
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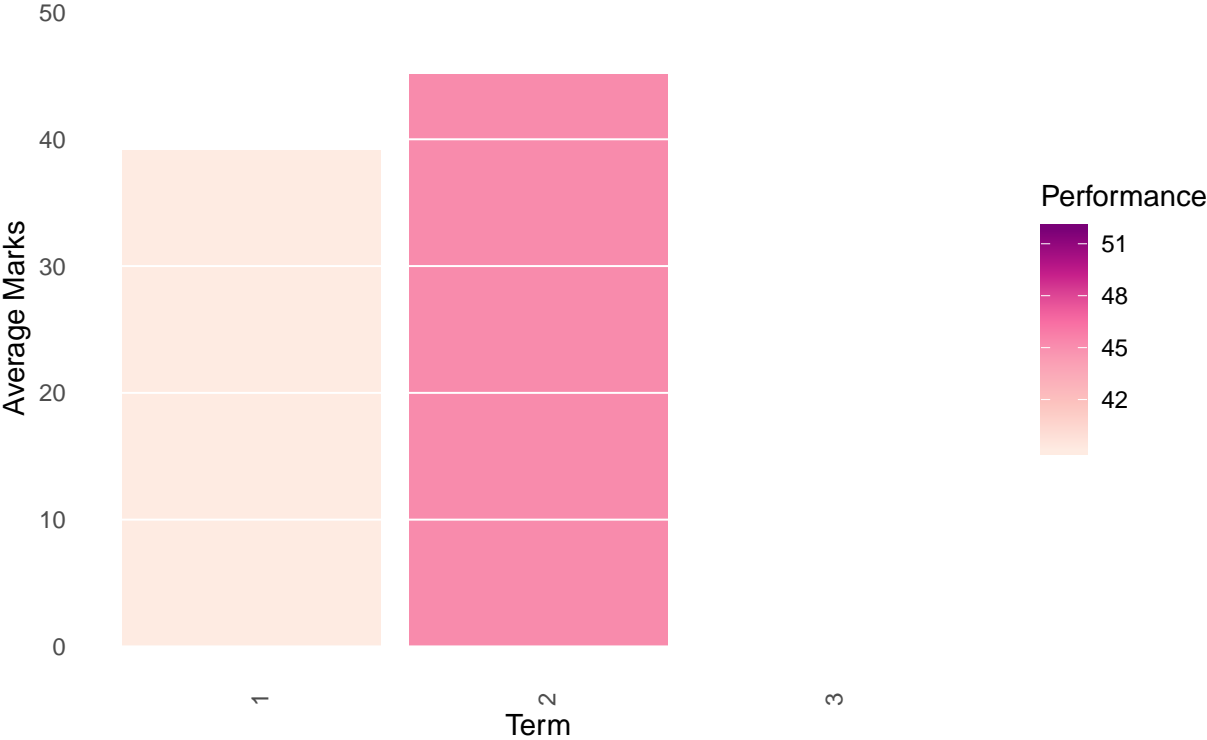
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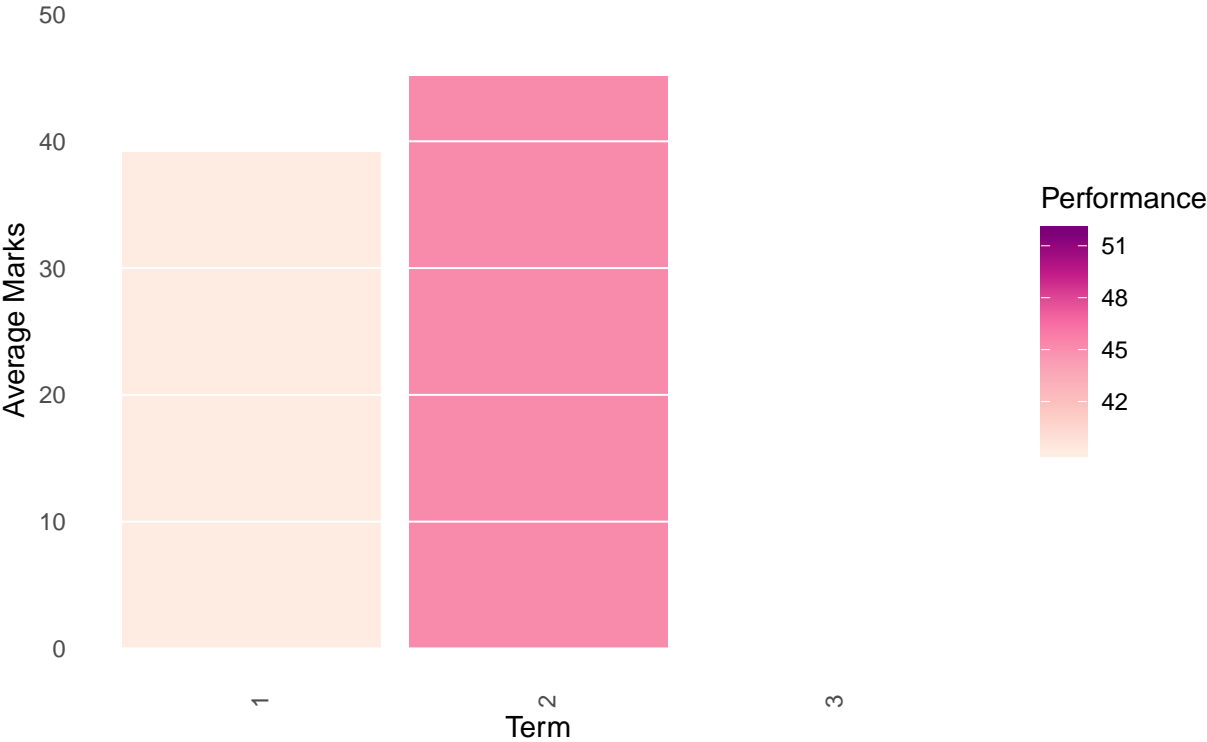
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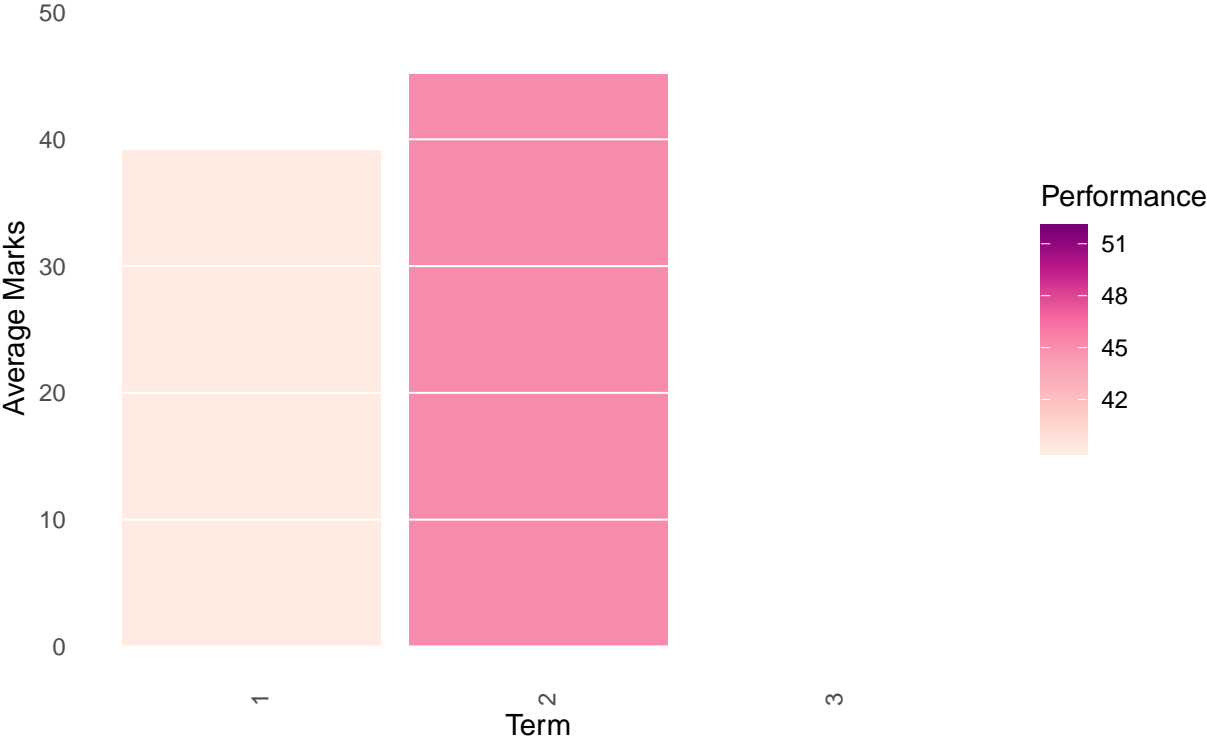
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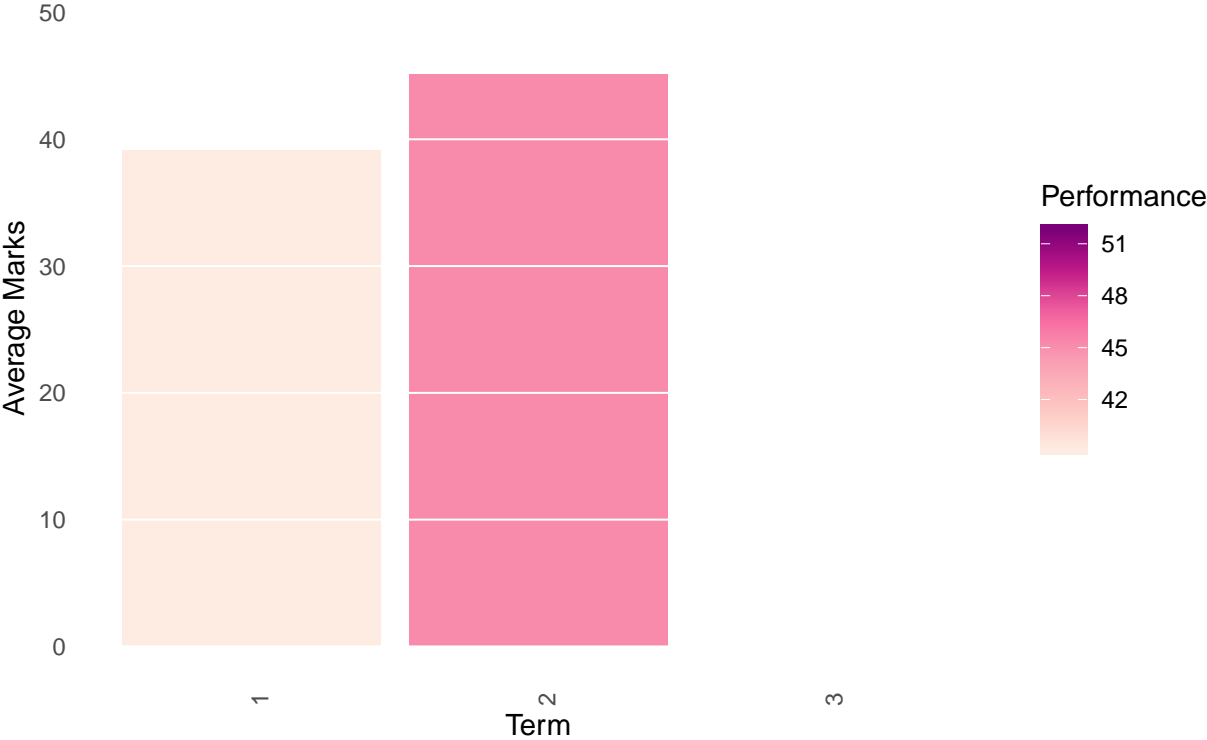
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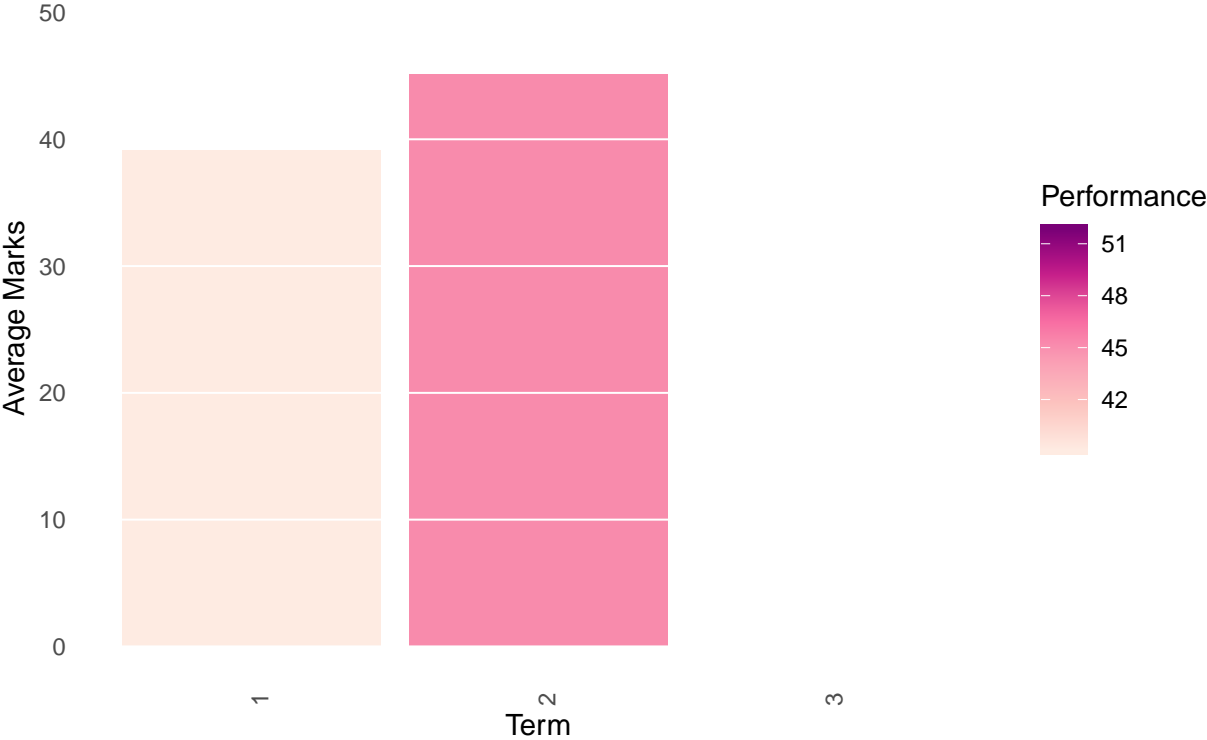
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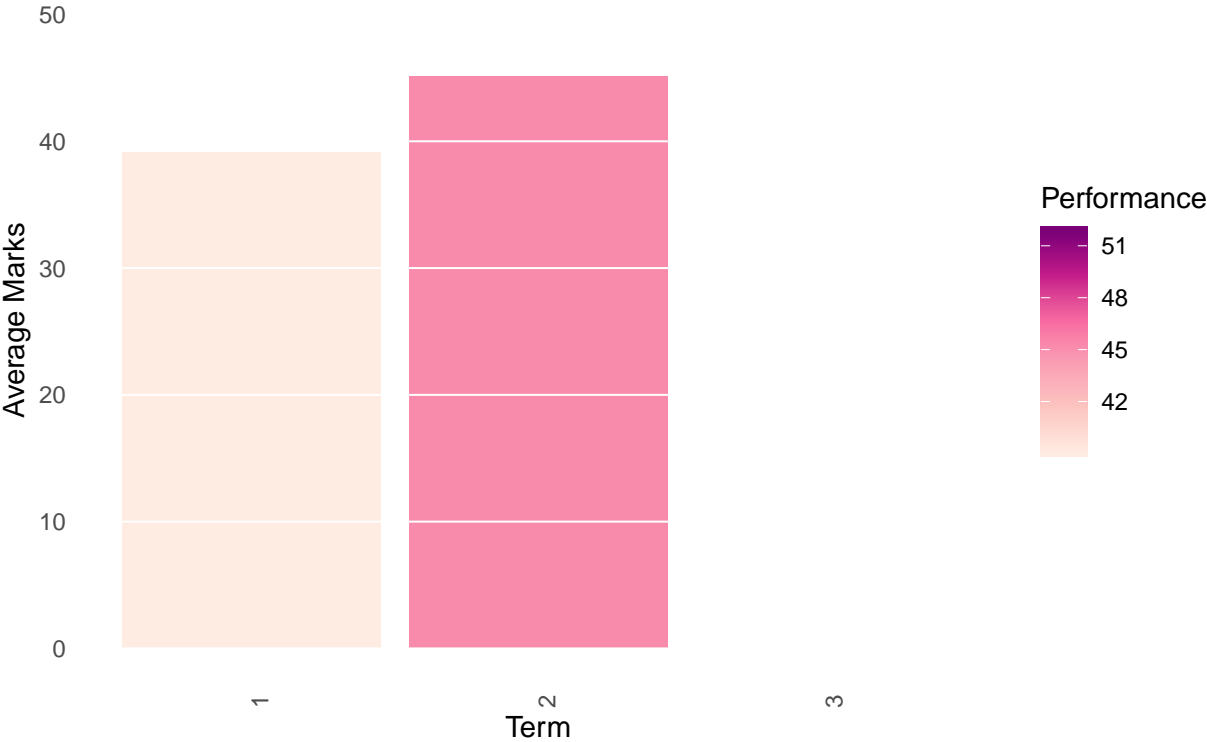
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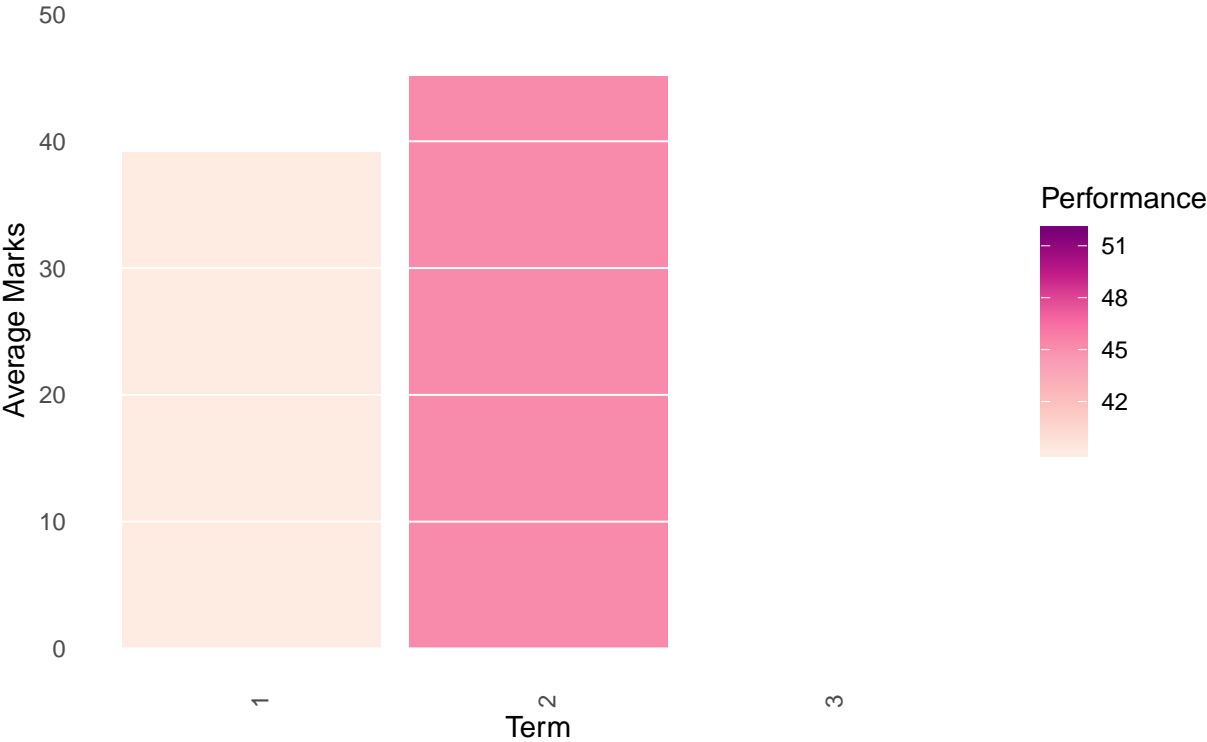
Overall Marks over the Year



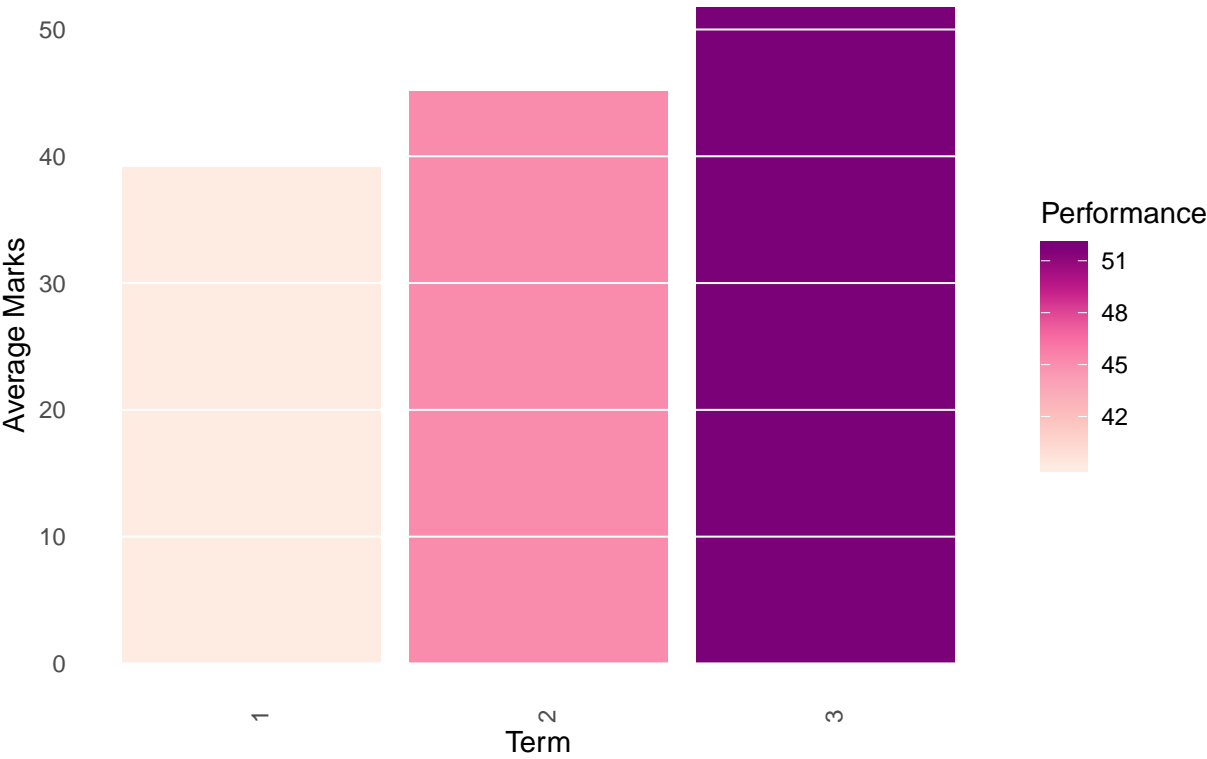
Overall Marks over the Year



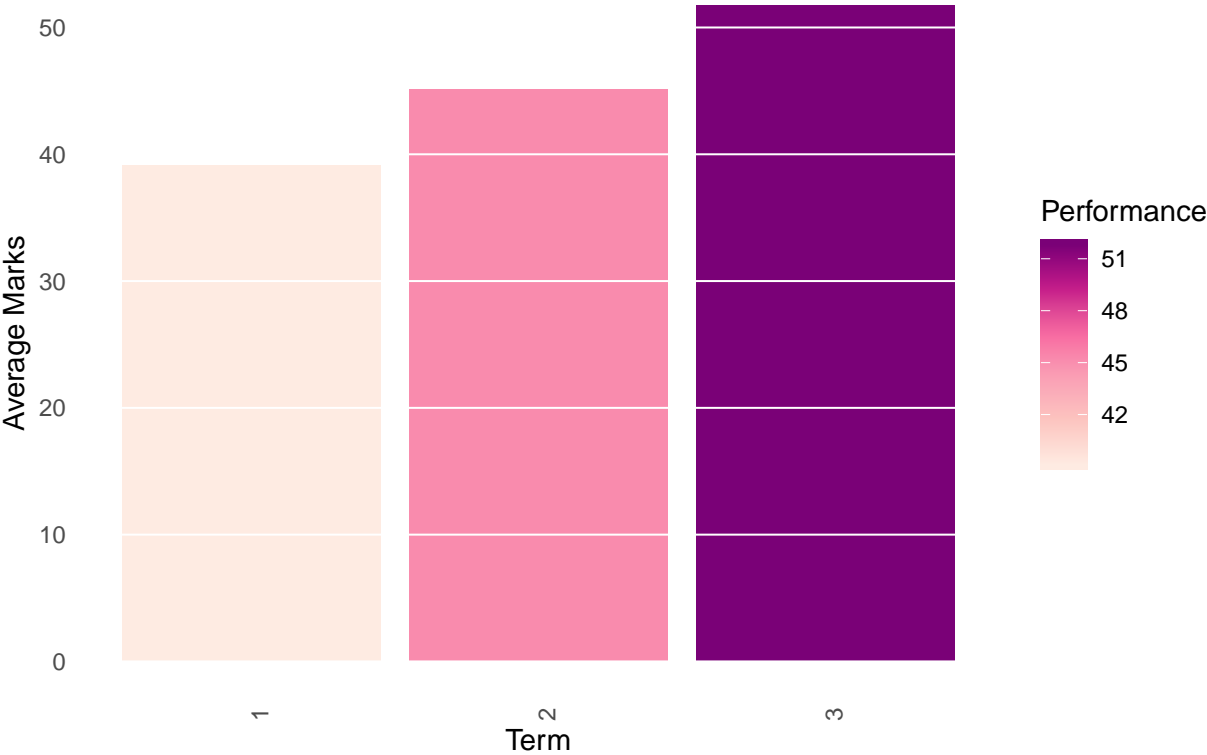
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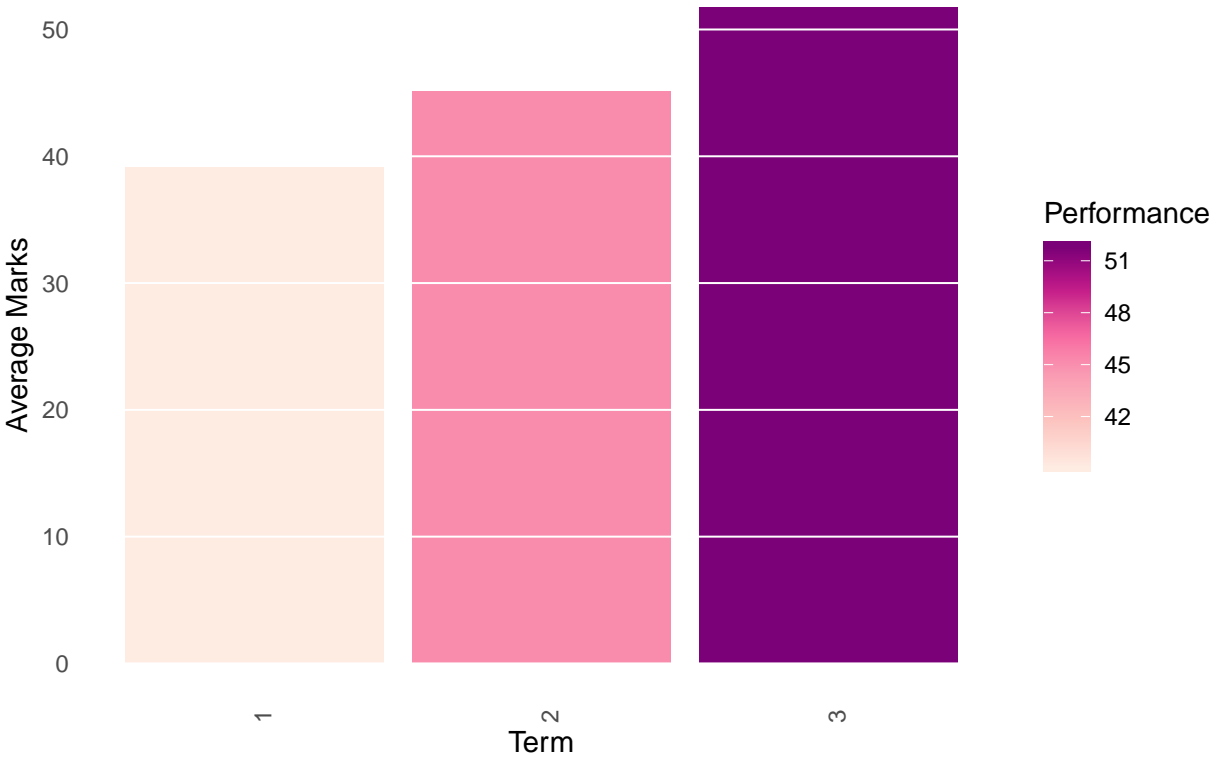
Overall Marks over the Year



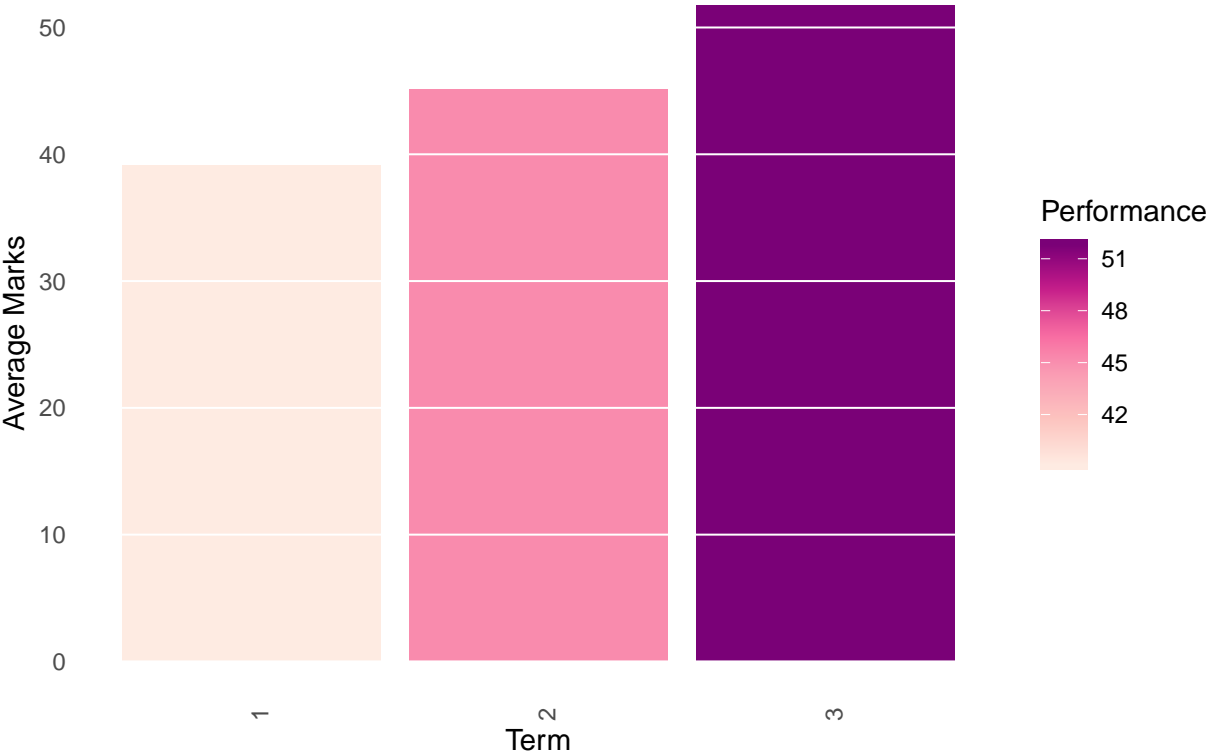
Overall Marks over the Year



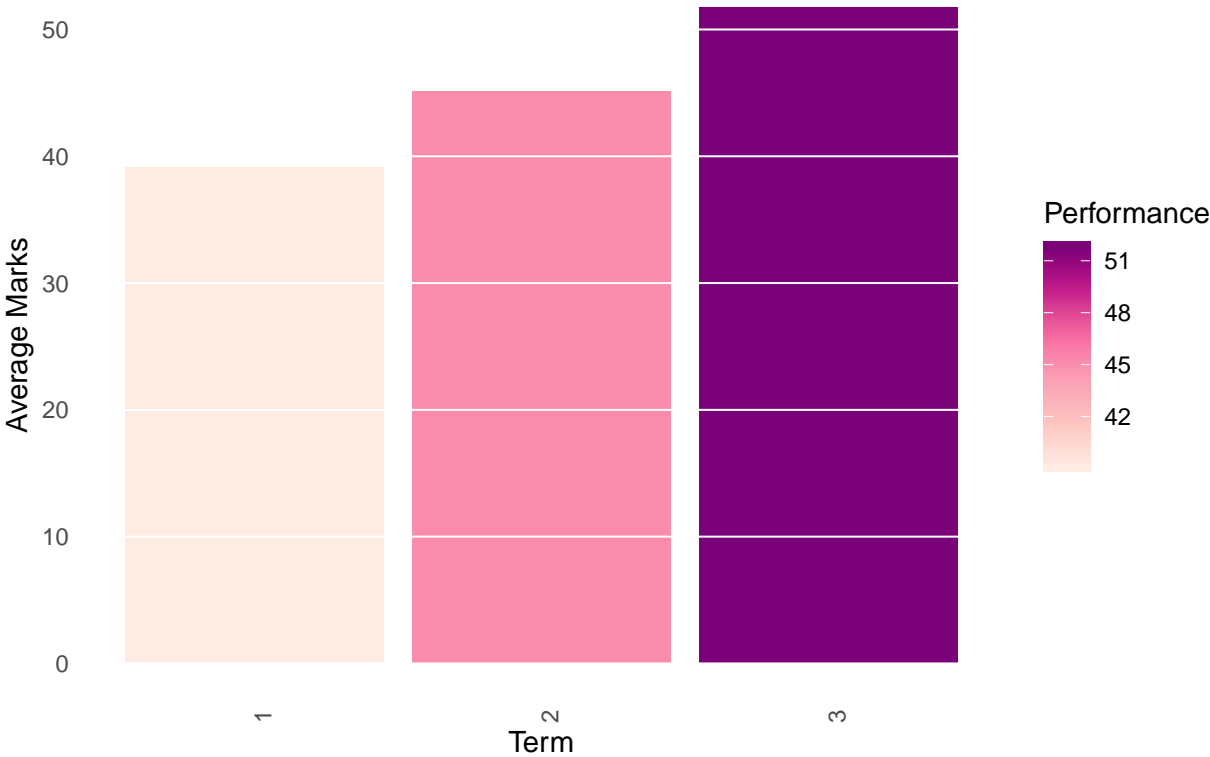
Overall Marks over the Year

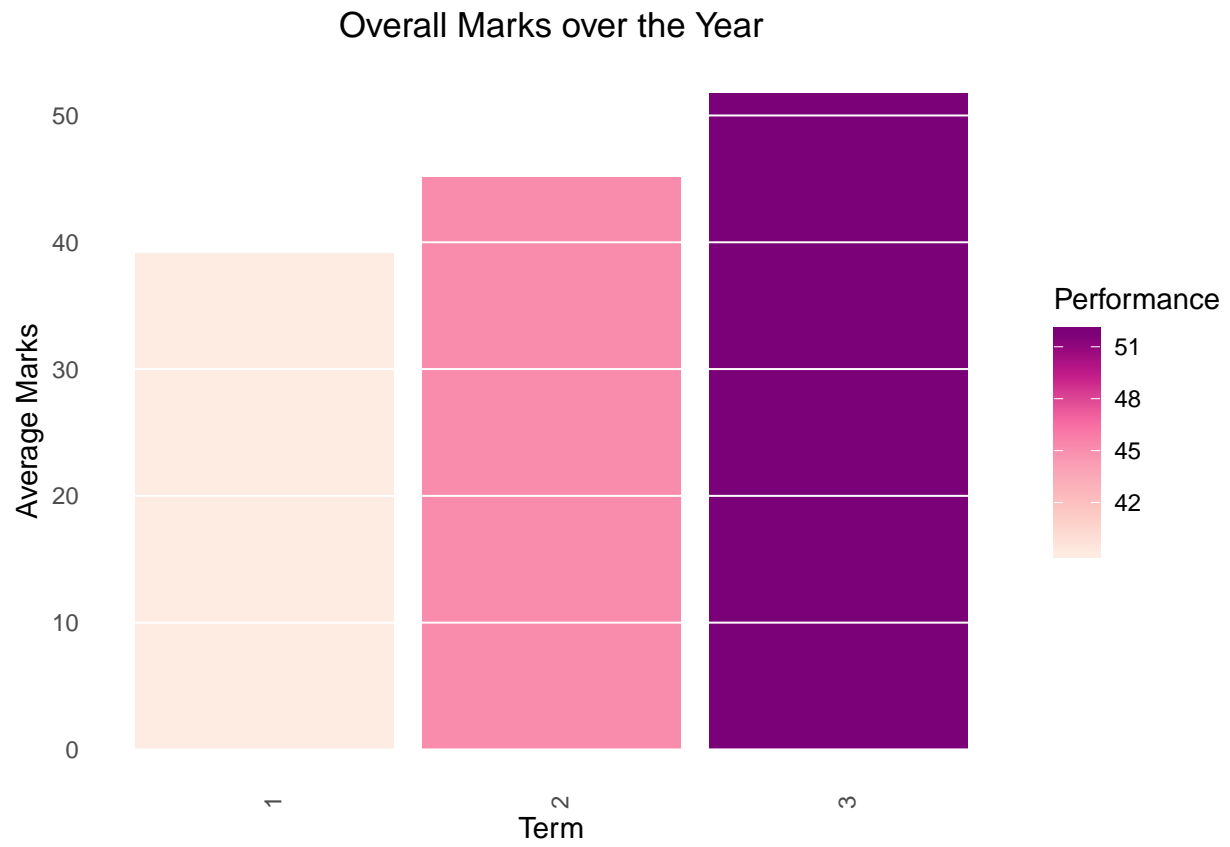


Overall Marks over the Year

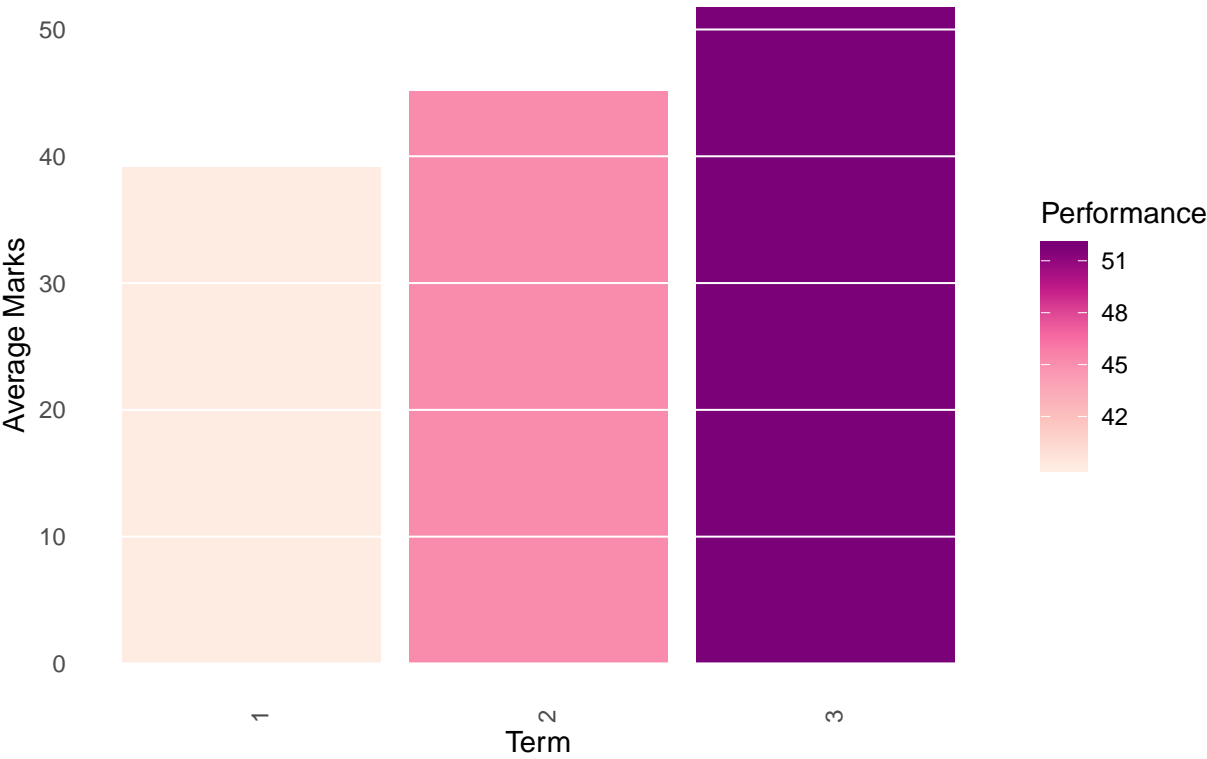


Overall Marks over the Year

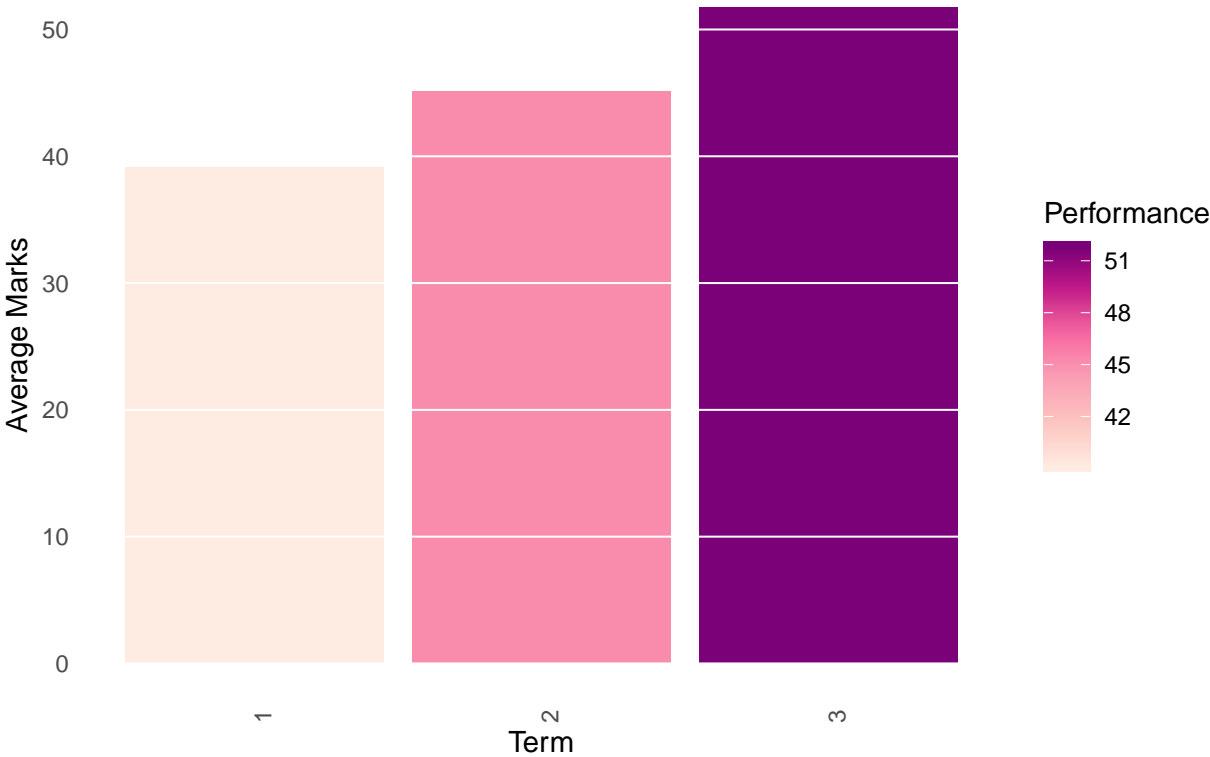


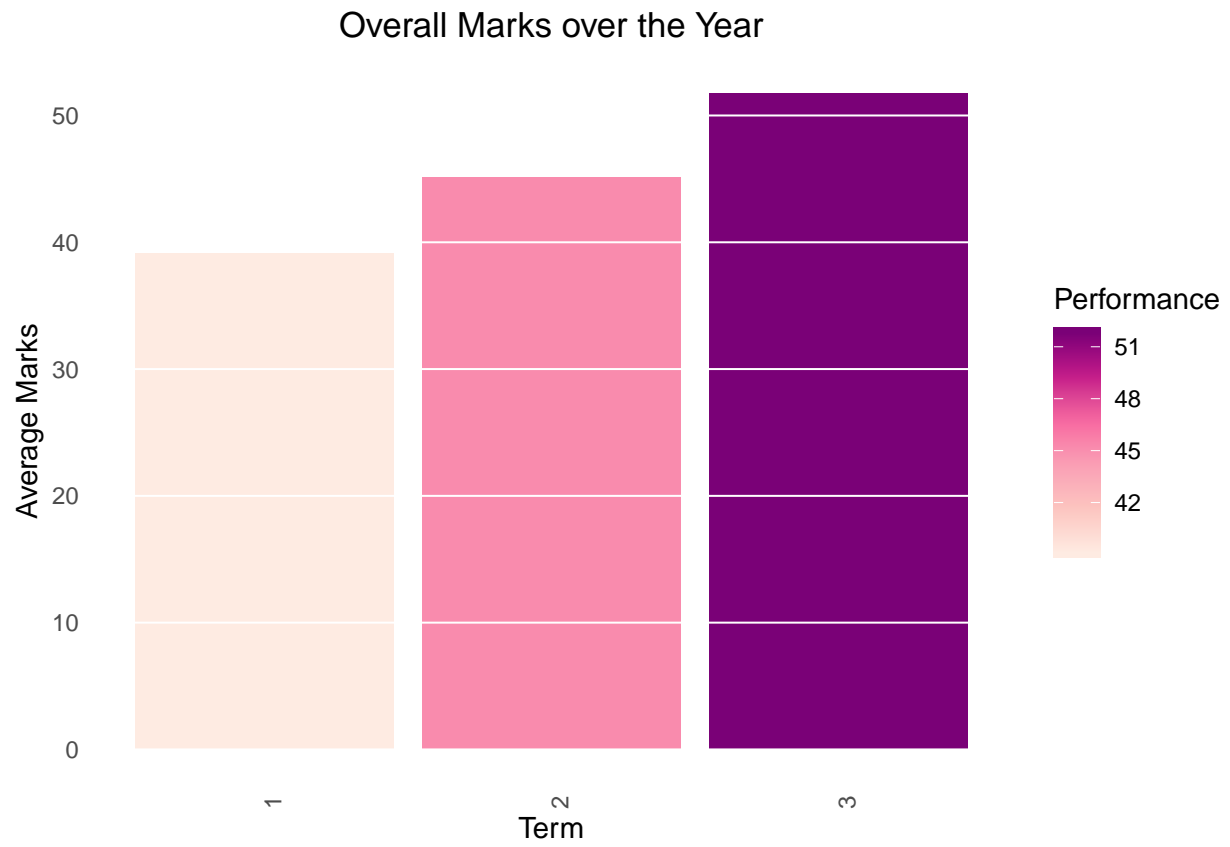


Overall Marks over the Year

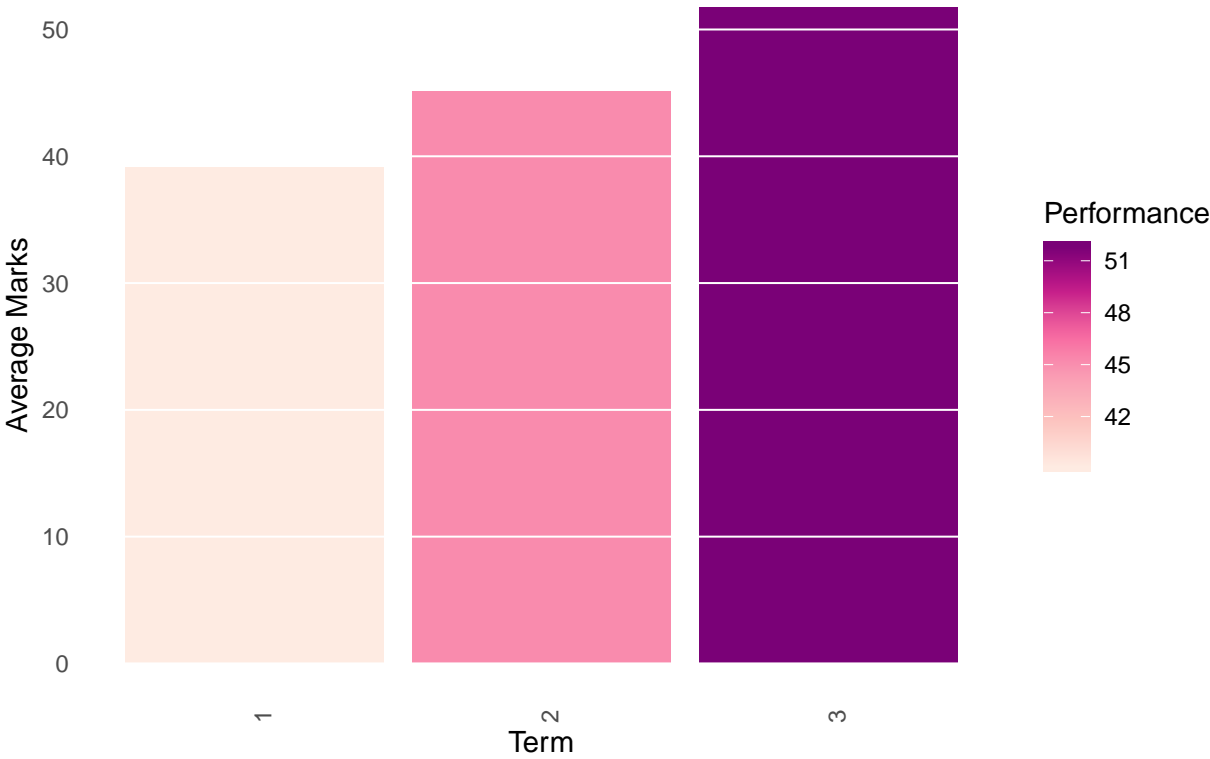


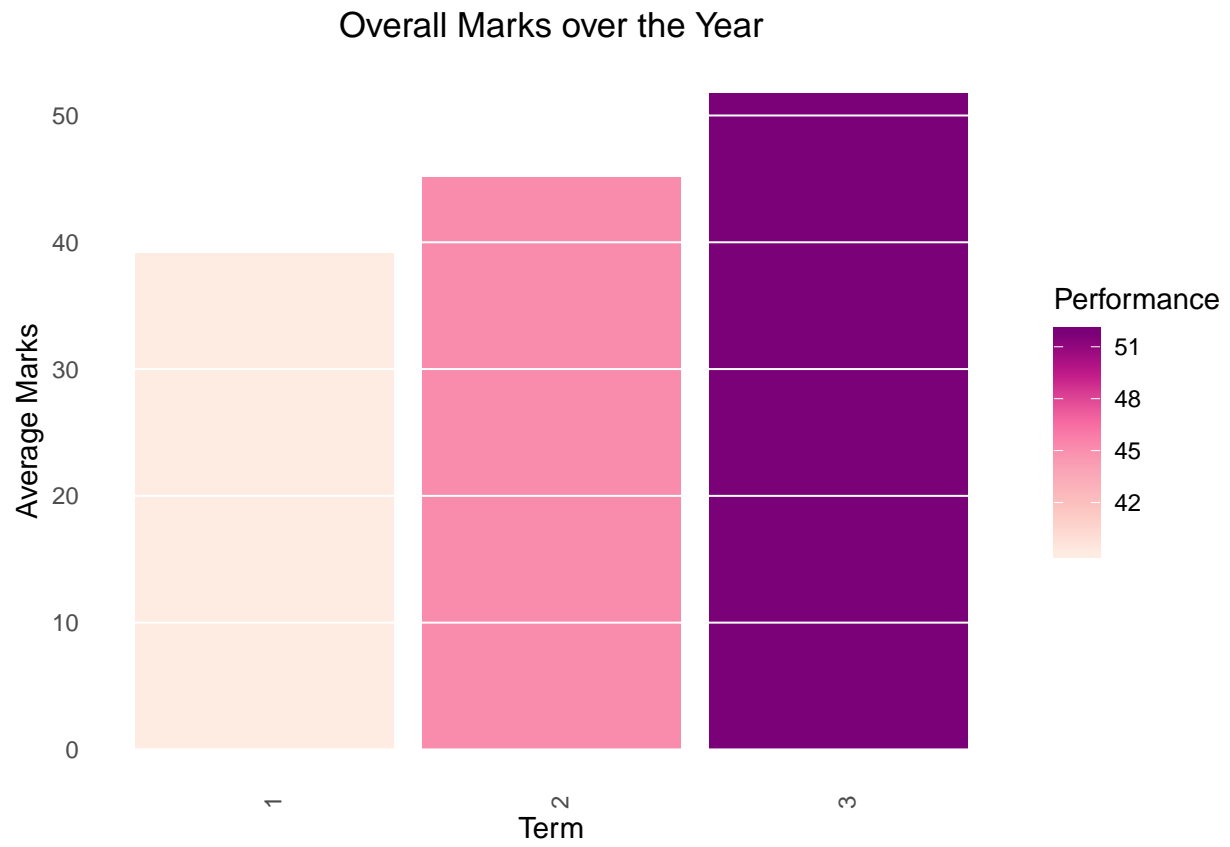
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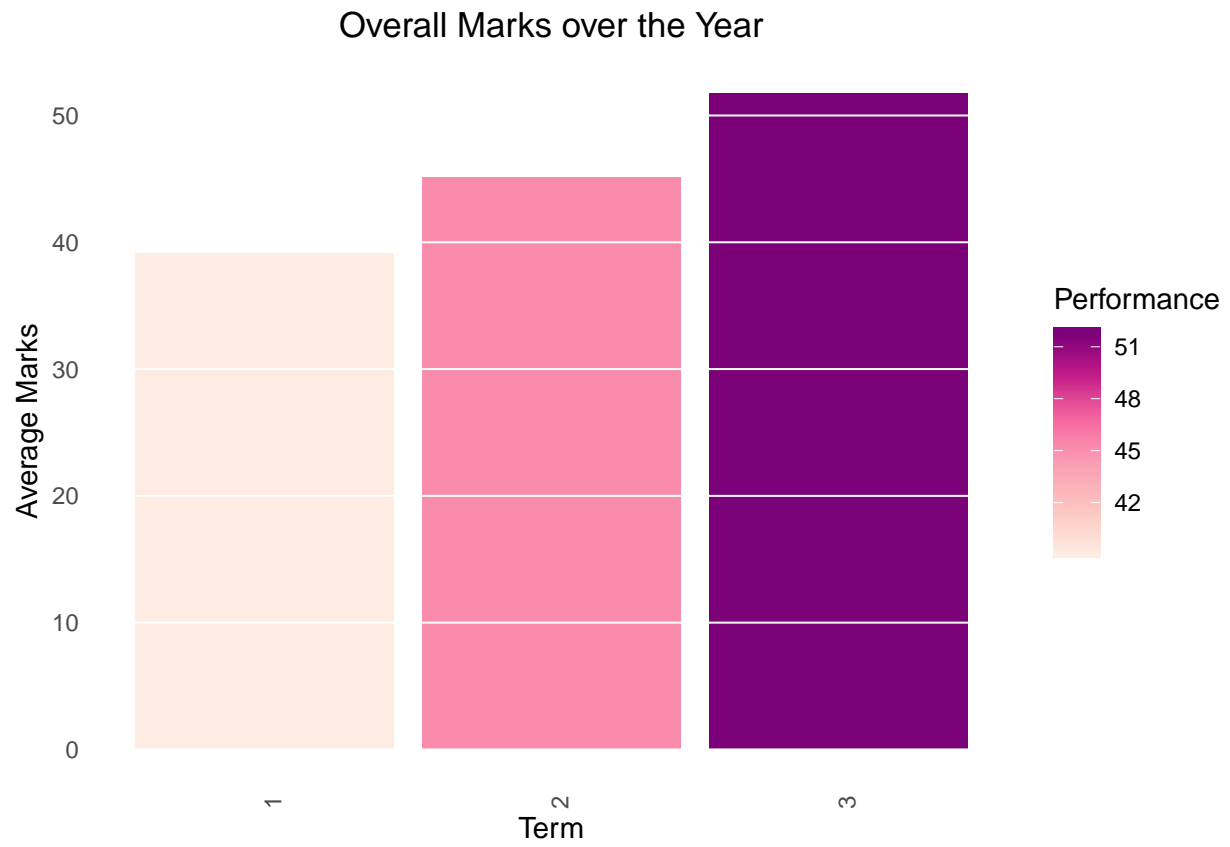




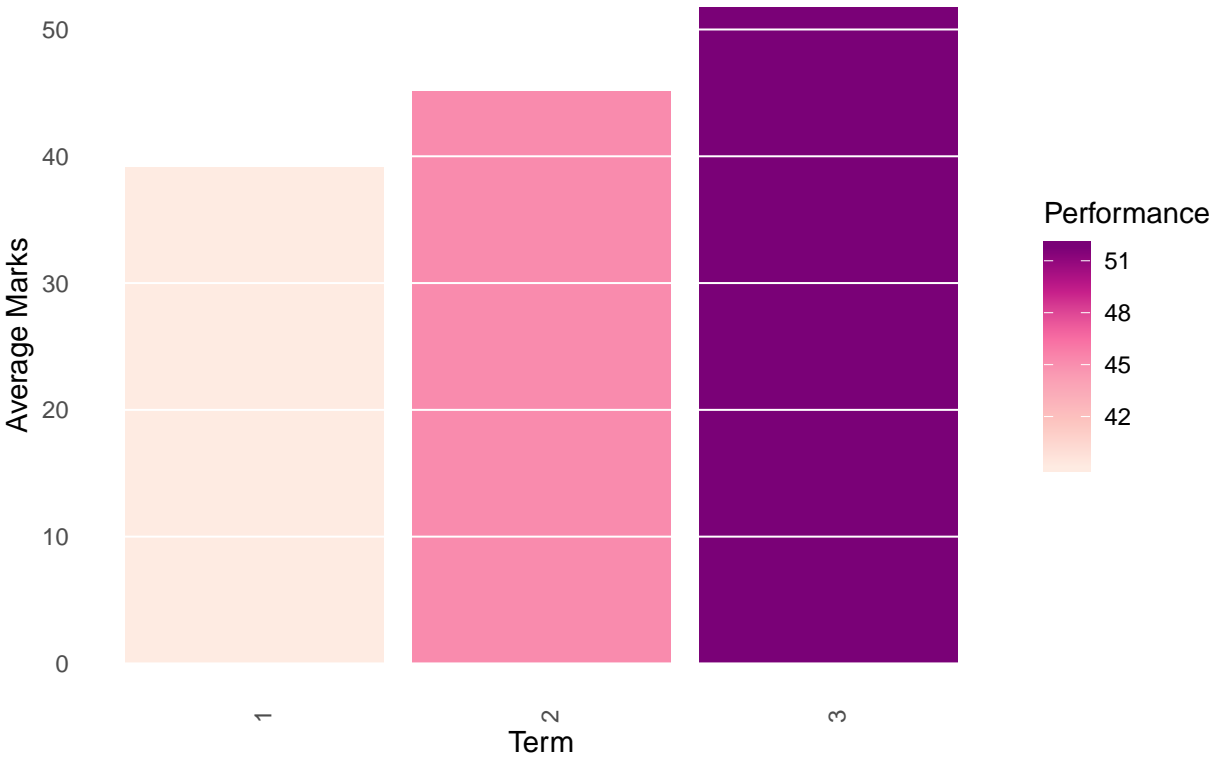
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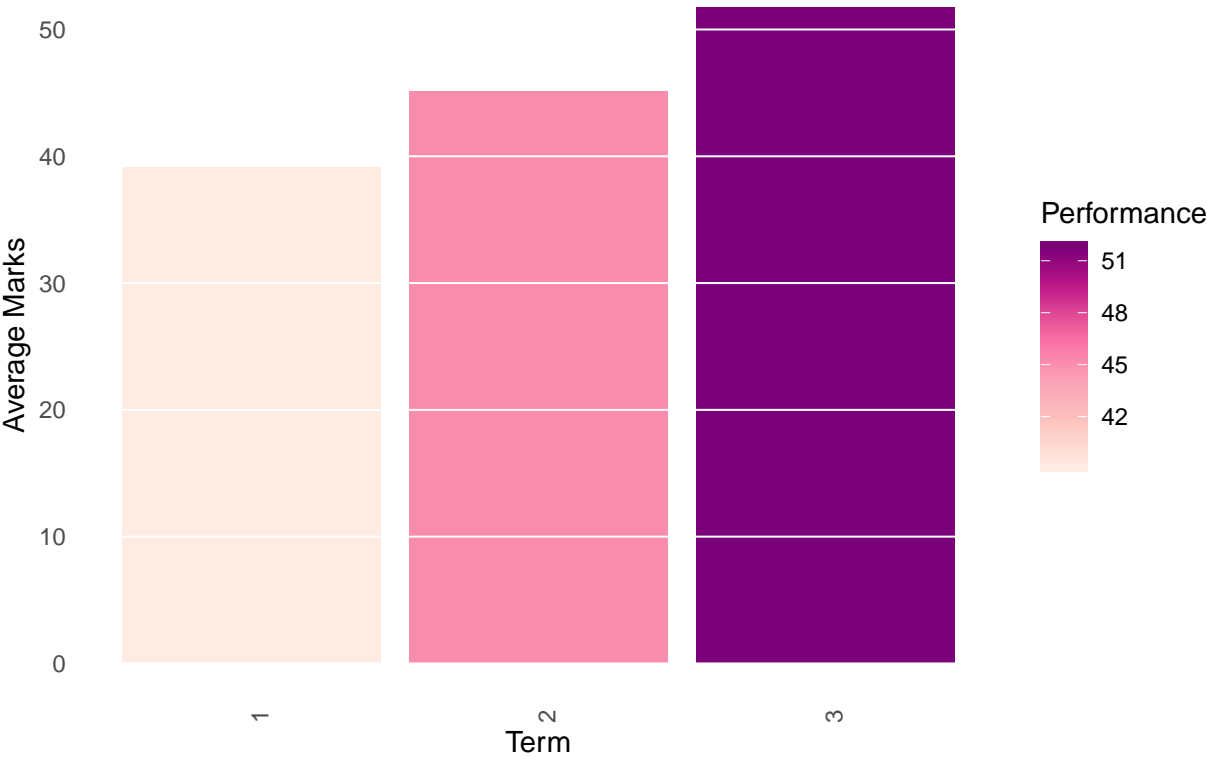




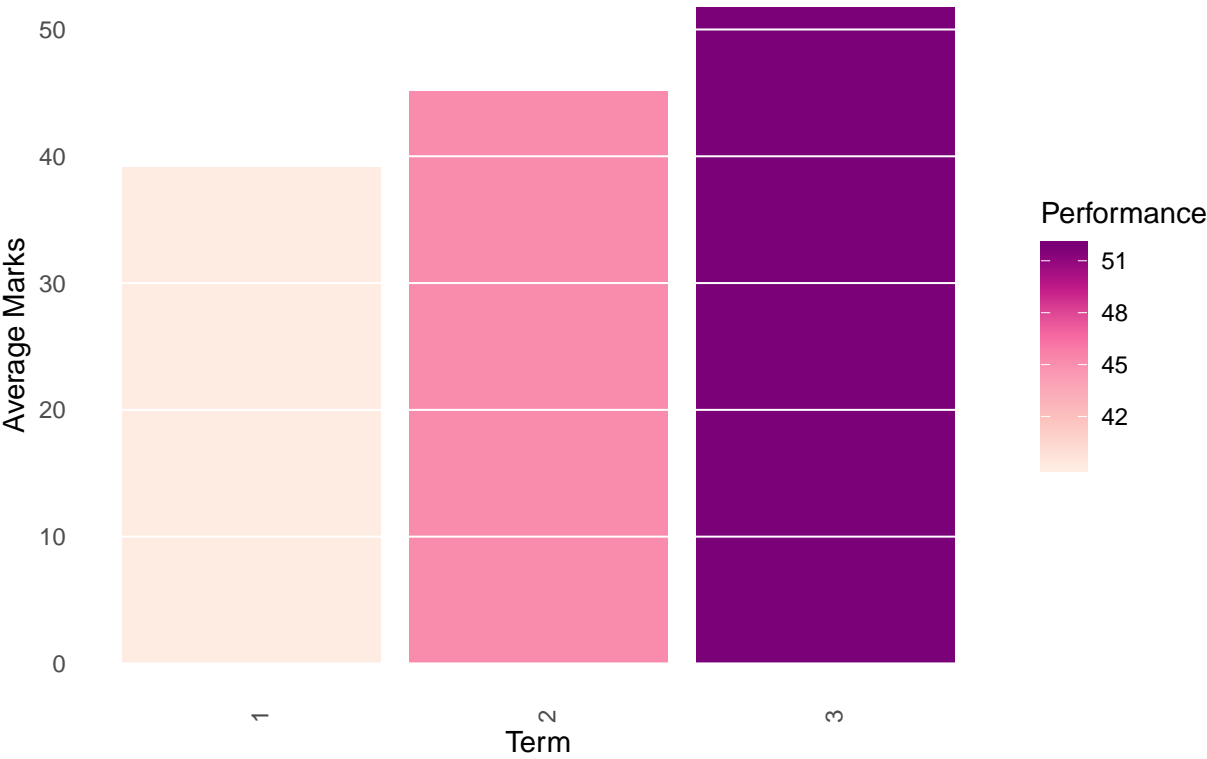
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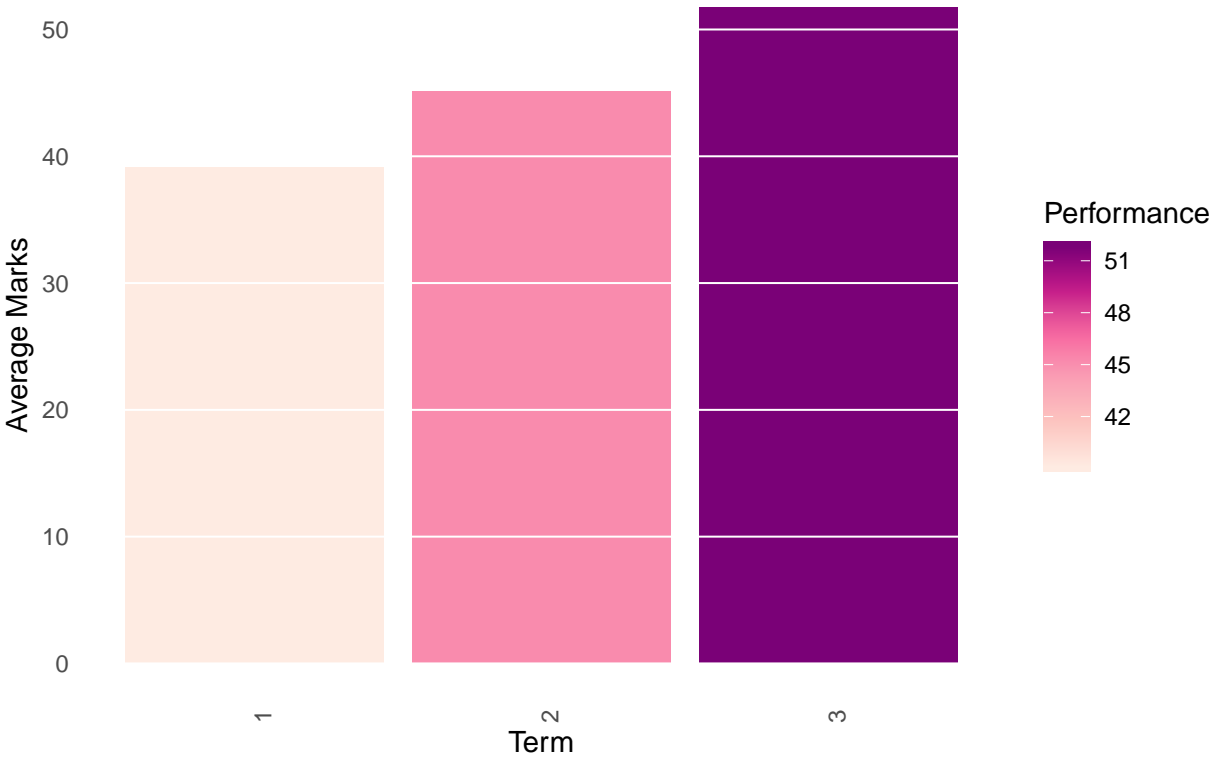
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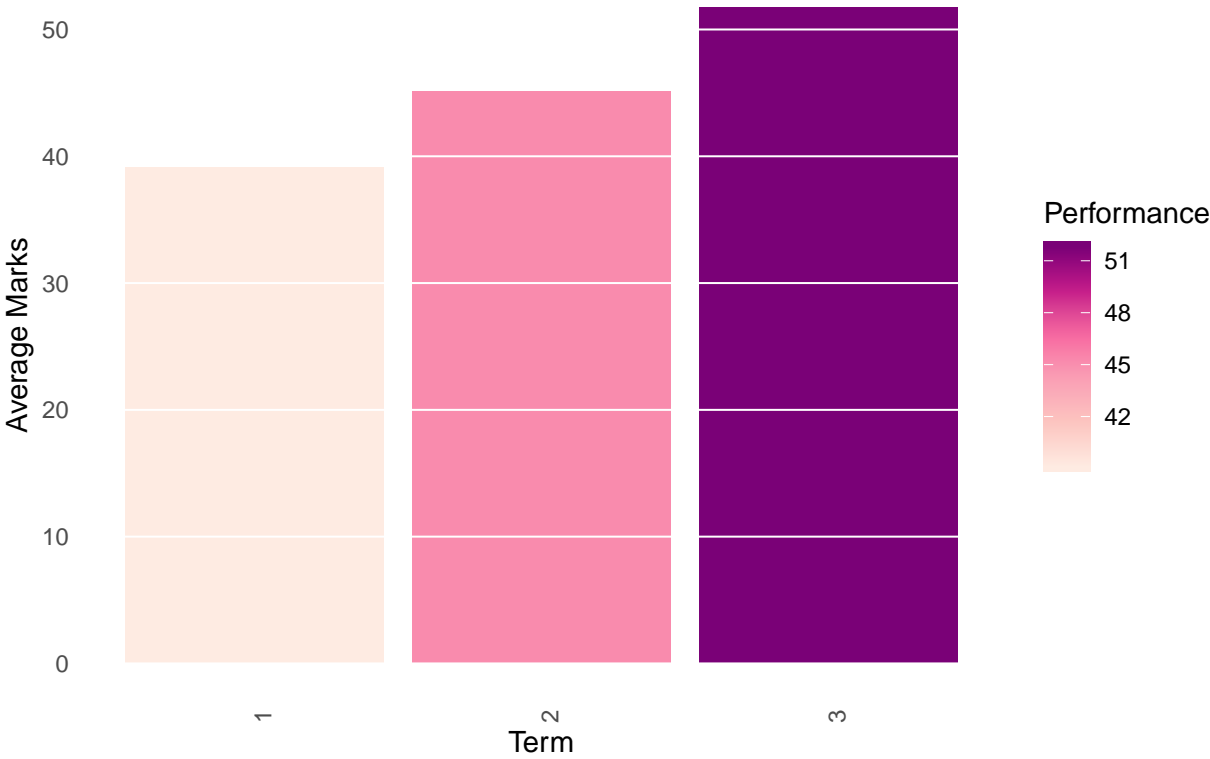
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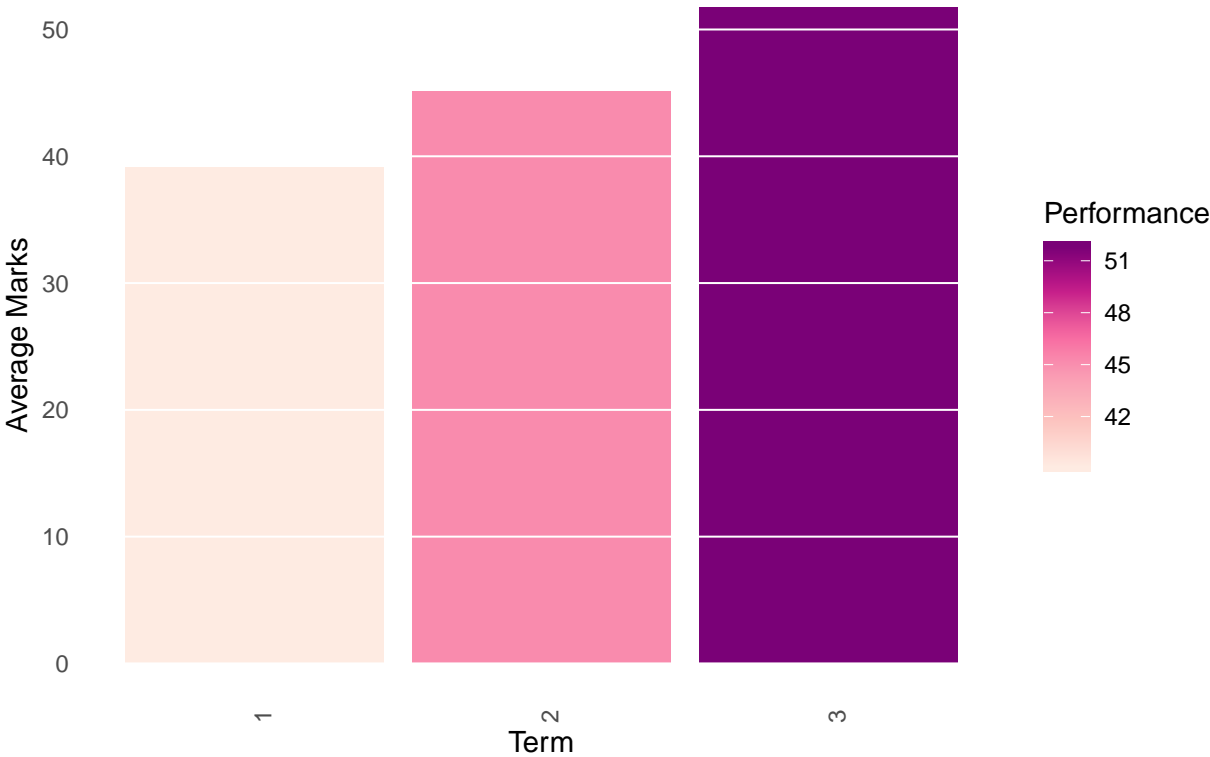
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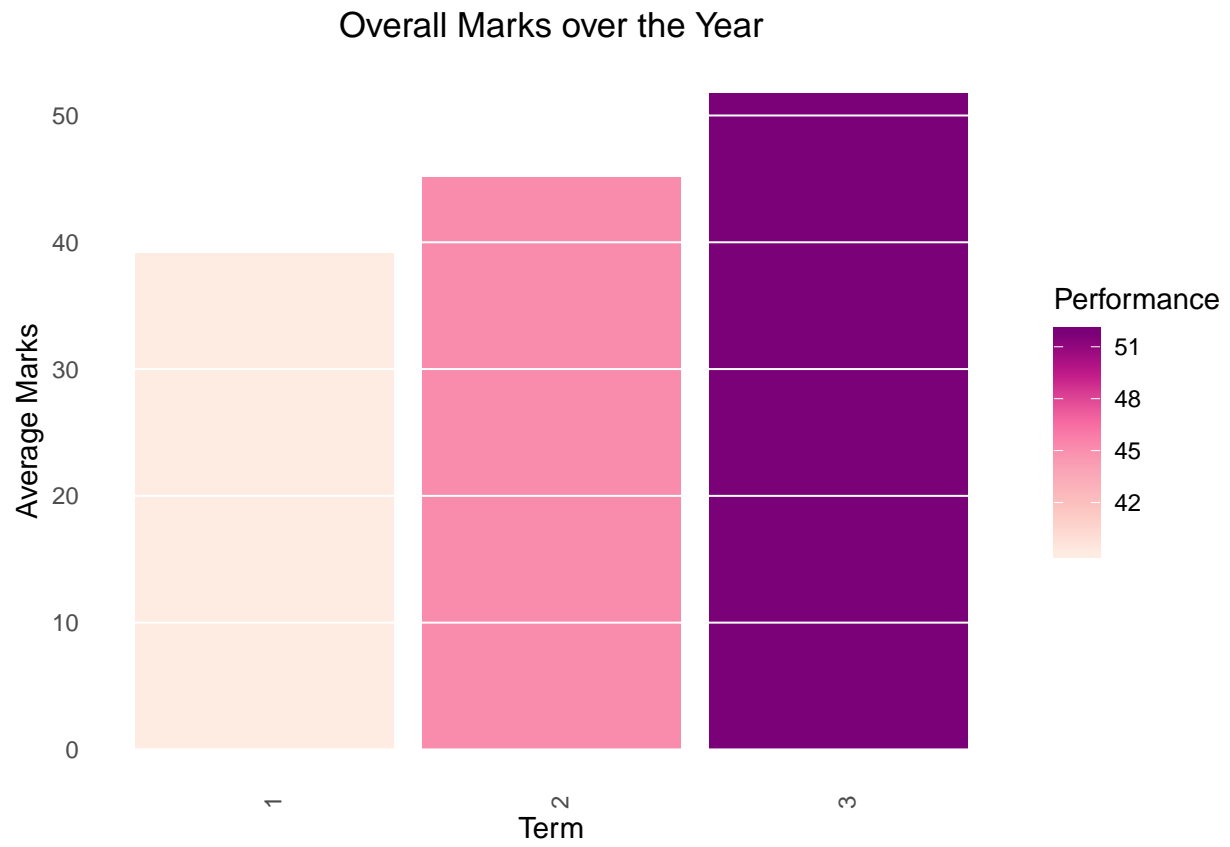


Overall Marks over the Year

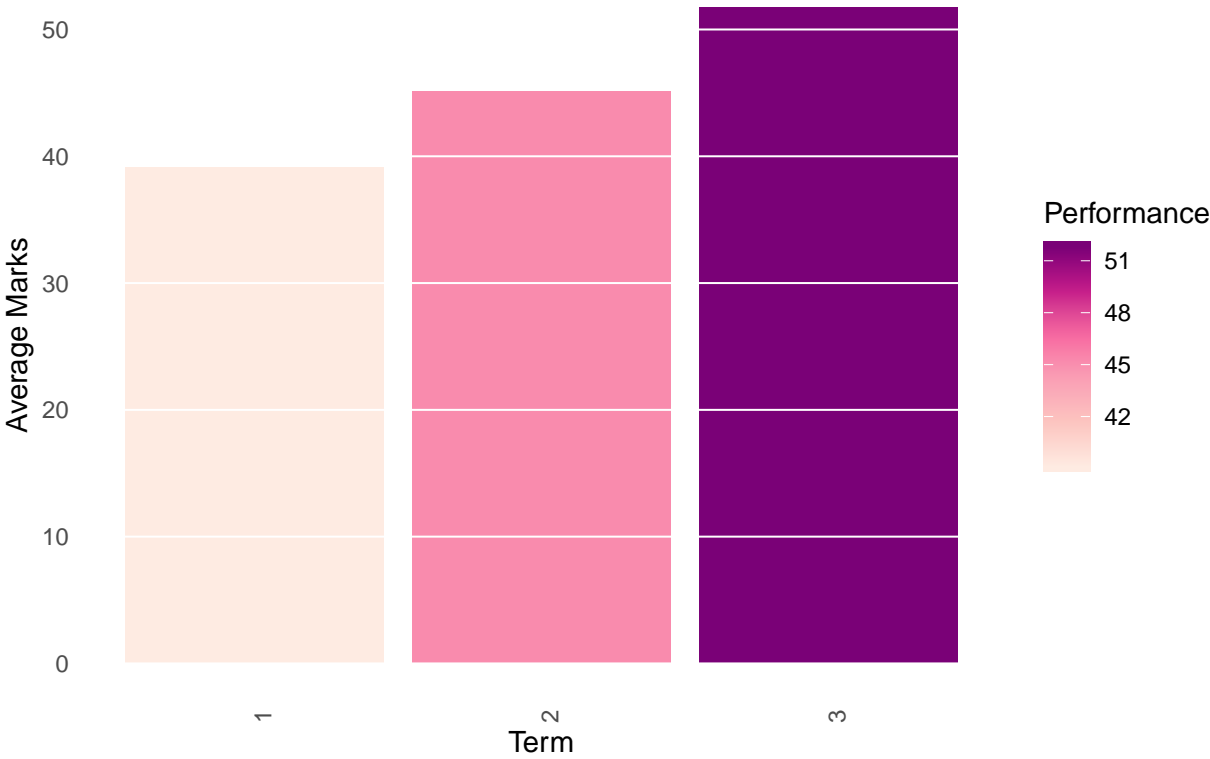


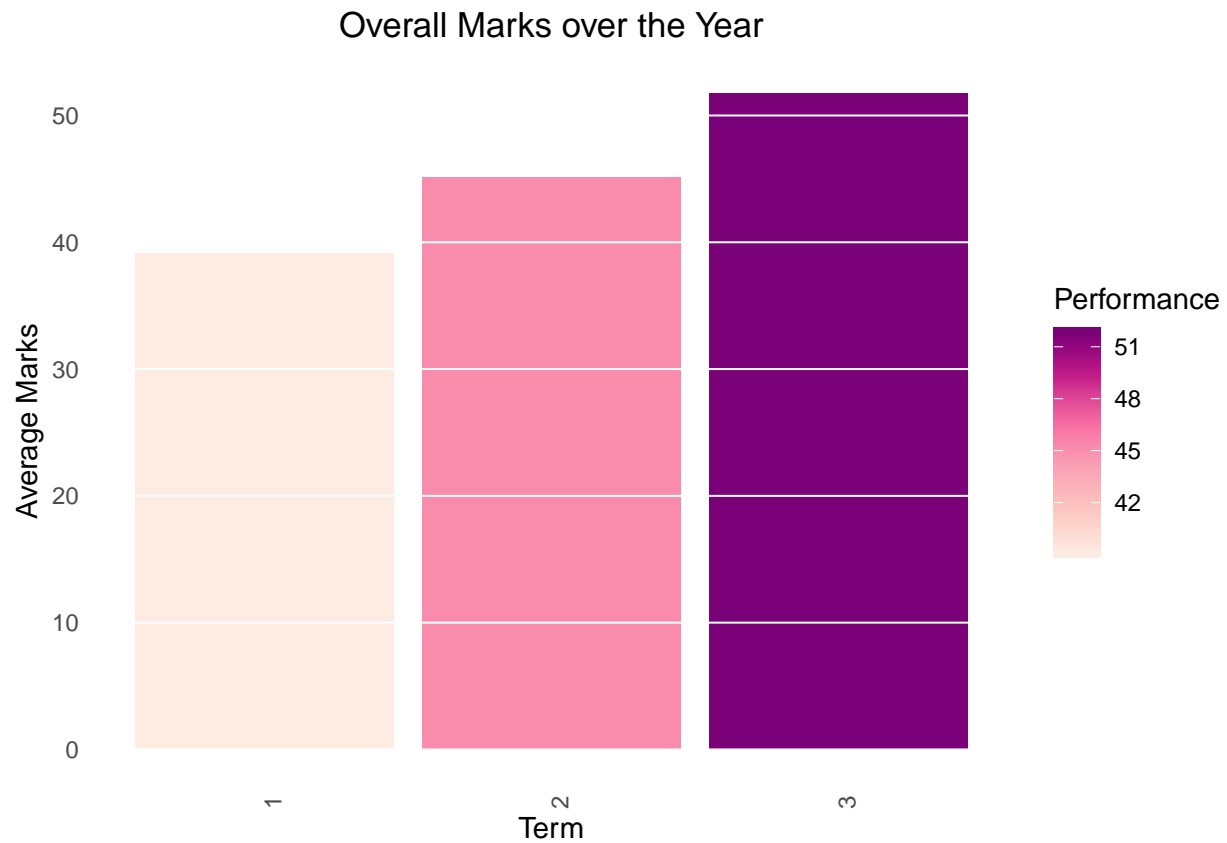
Overall Marks over the Year





Overall Marks over the Year

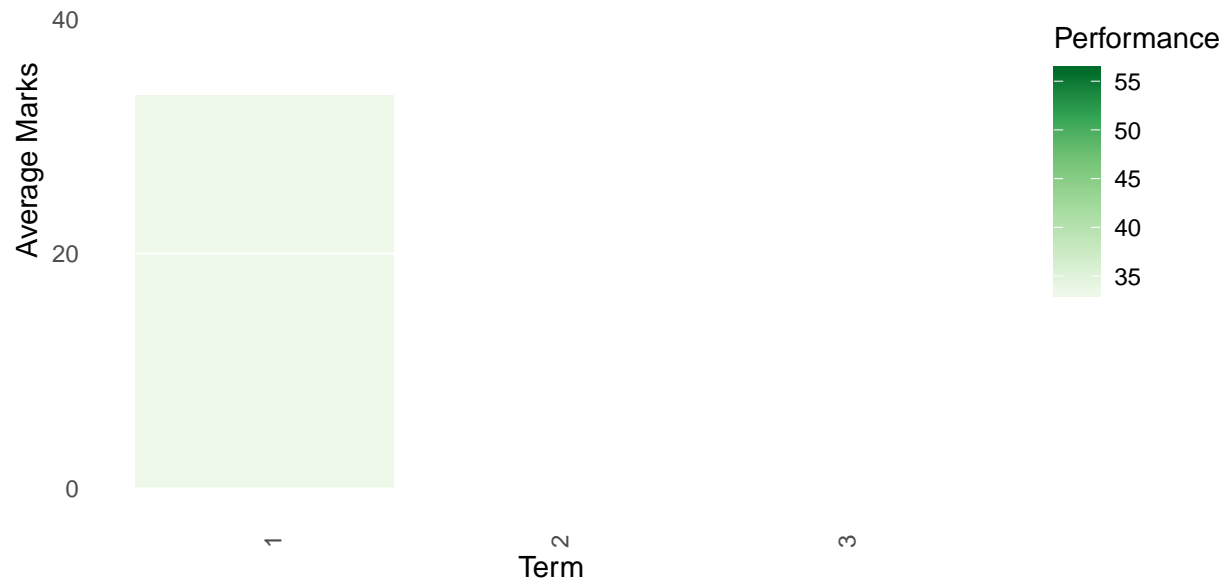




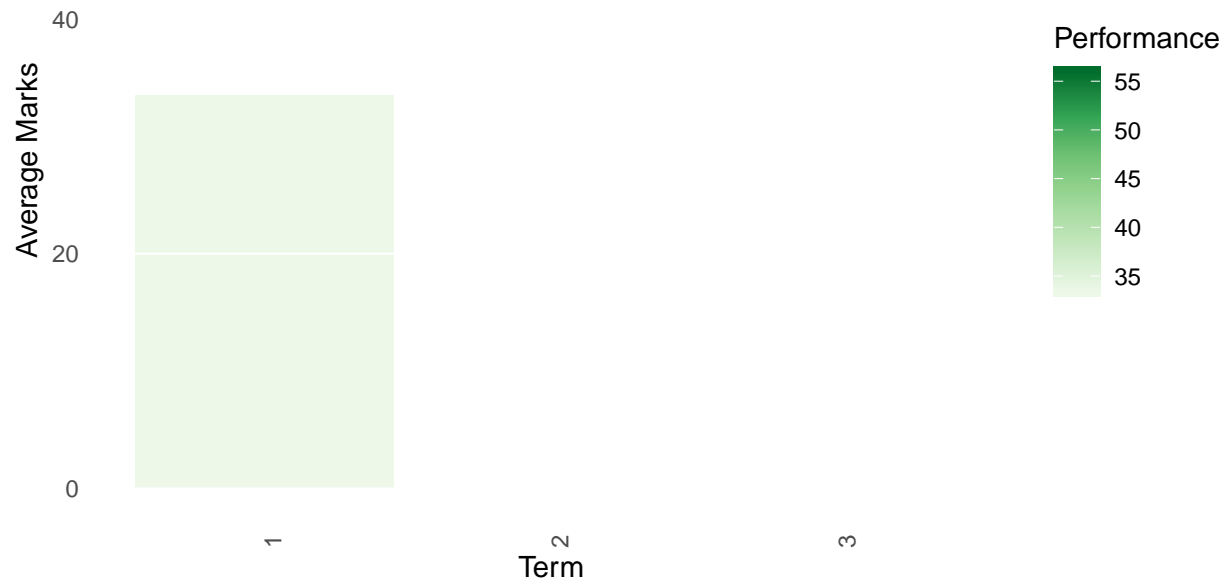
```
p <- ggplot(average_marks_control, aes(as.factor(term), Performance, fill = Performance)) +
  geom_col() + scale_fill_distiller(palette = "Greens", direction = 1) +
  ggtitle("Overall Marks over the Year for Treatment Group") + labs(x="Term", y="Average Marks") +
  theme_minimal() +
  theme(
    panel.grid = element_blank(),
    panel.grid.major.y = element_line(color = "white"),
    panel.ontop = TRUE, plot.title = element_text(hjust = 0.5),
    axis.text.x = element_text(angle=90))

p + transition_states(term, wrap = FALSE) + shadow_mark()
```

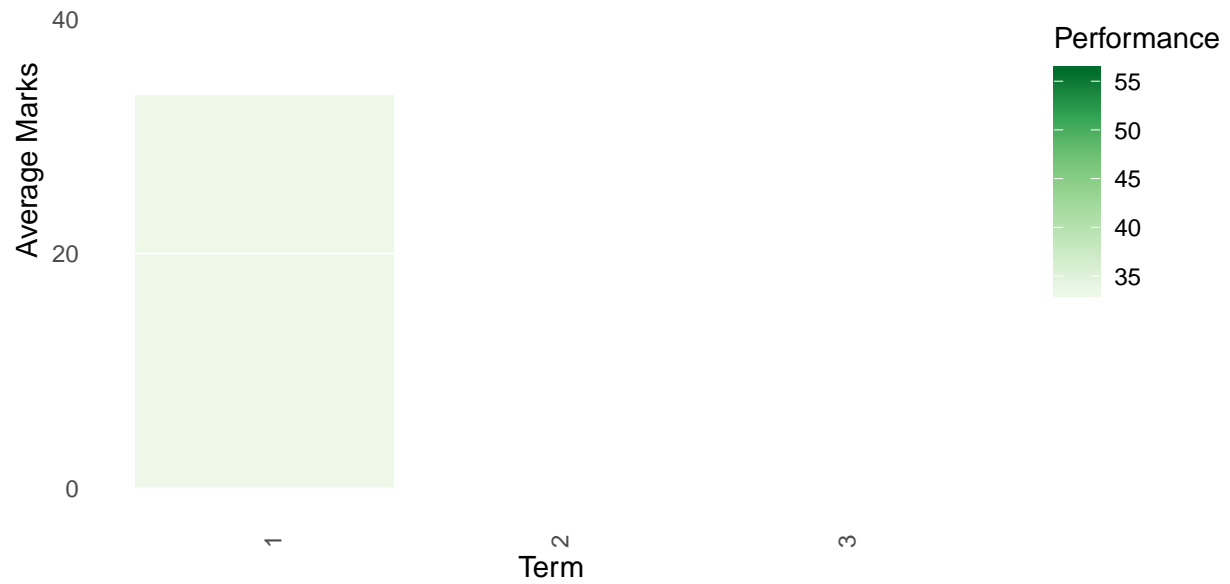
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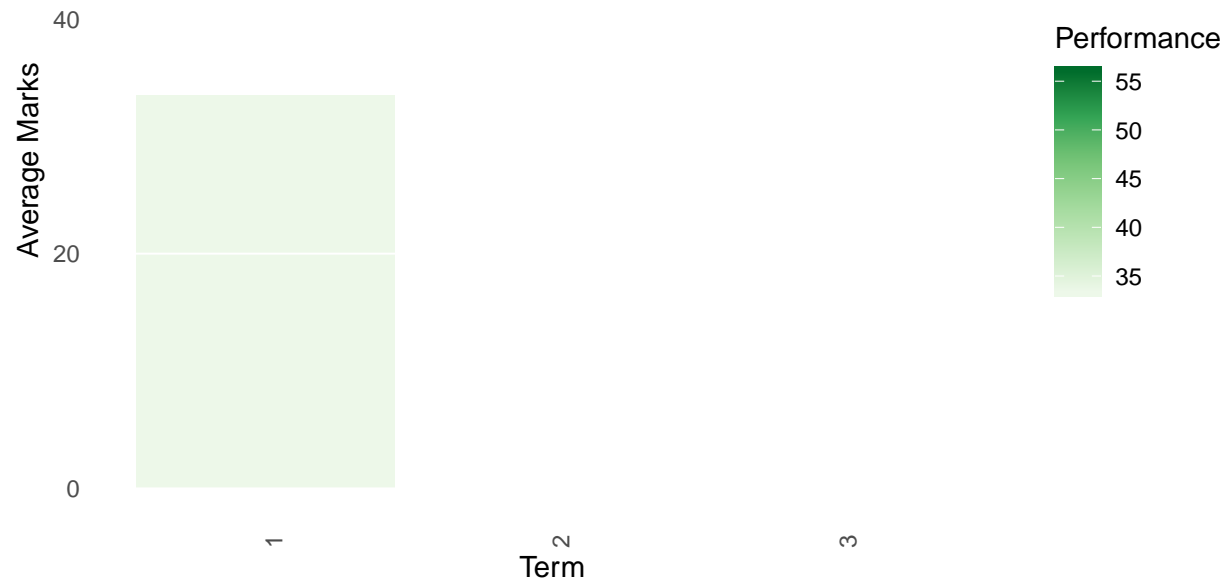
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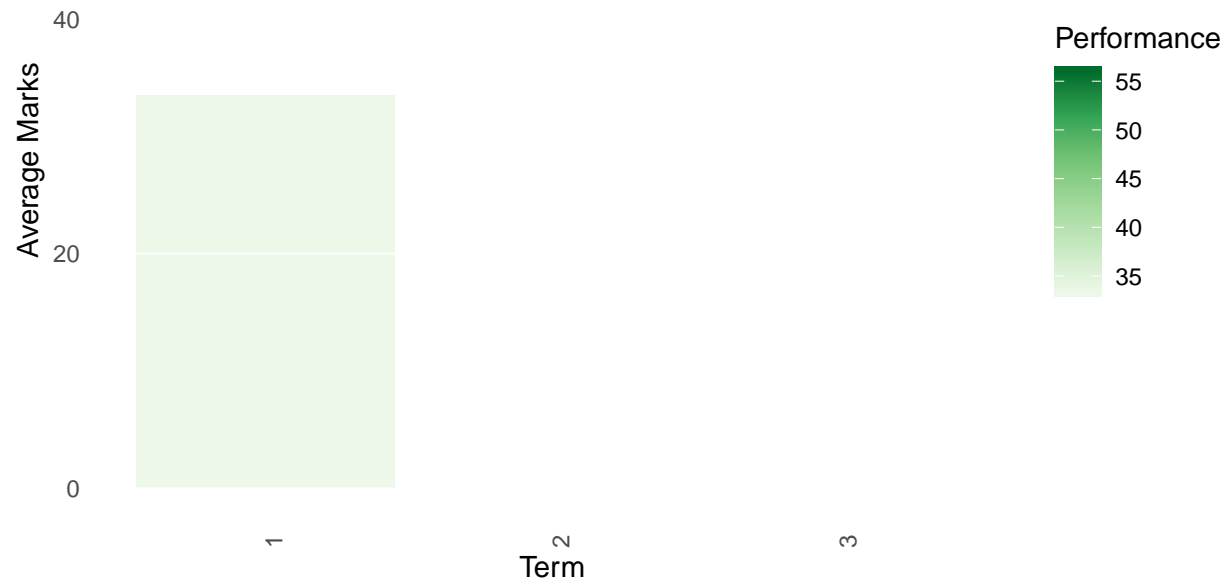
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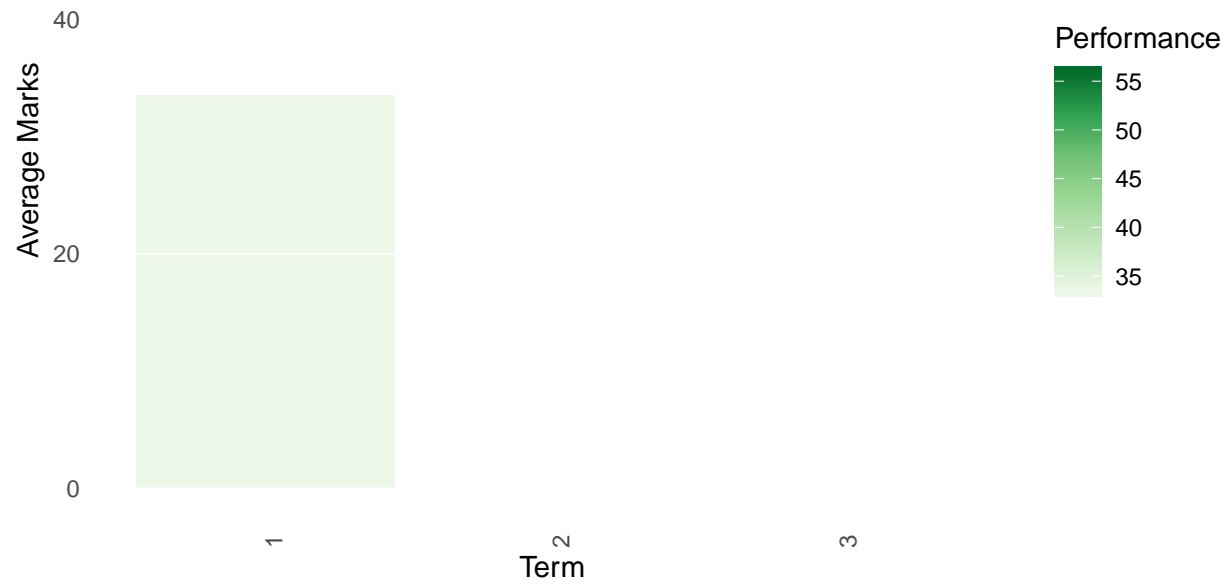
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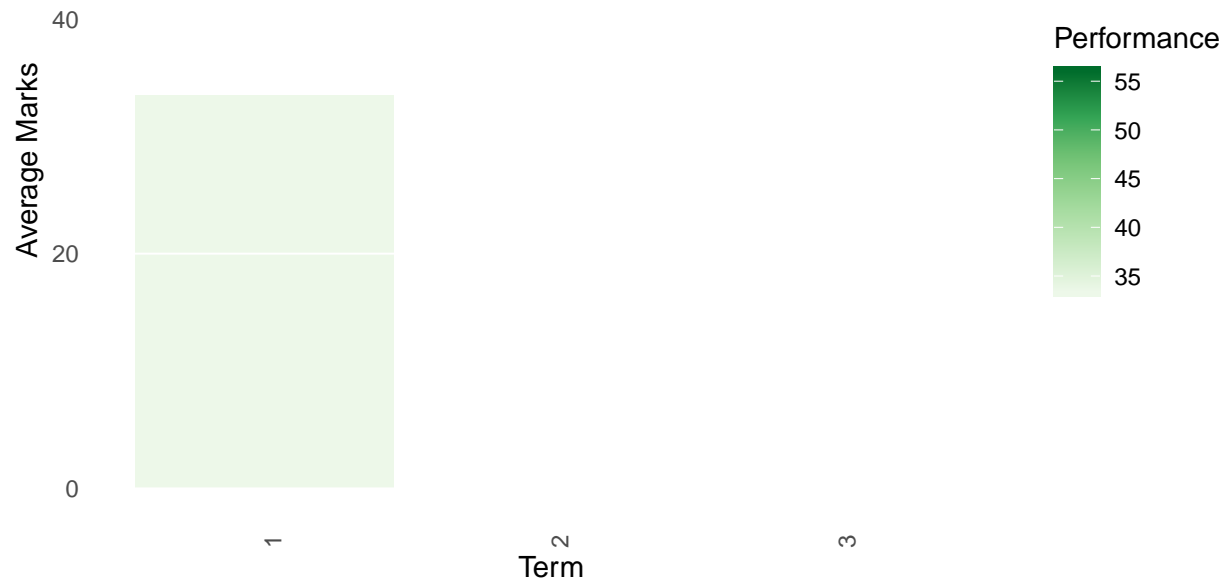
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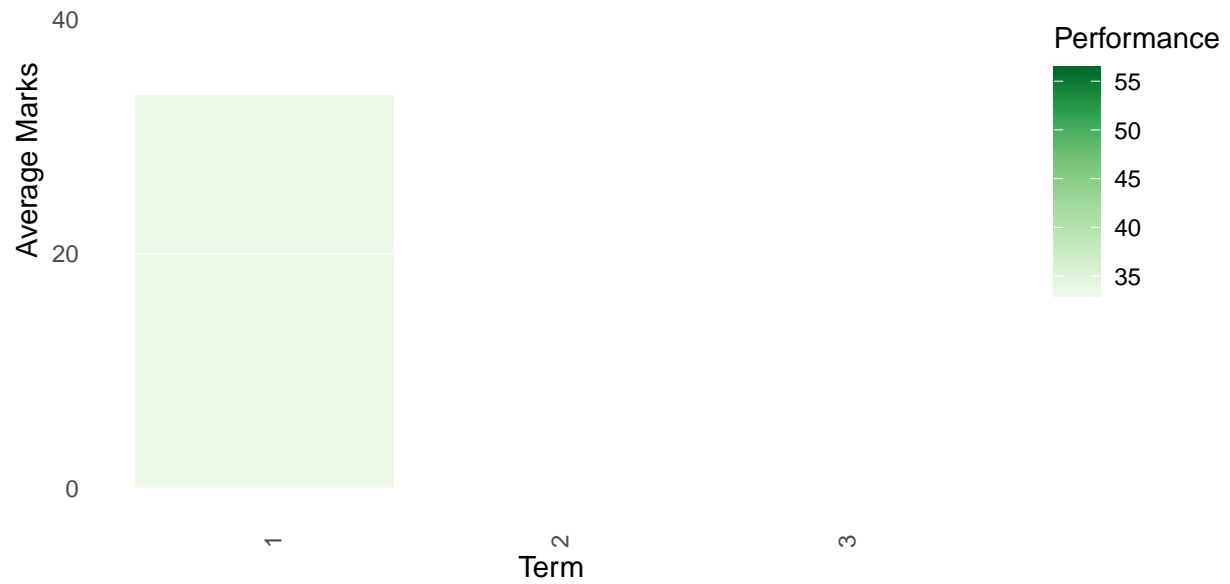
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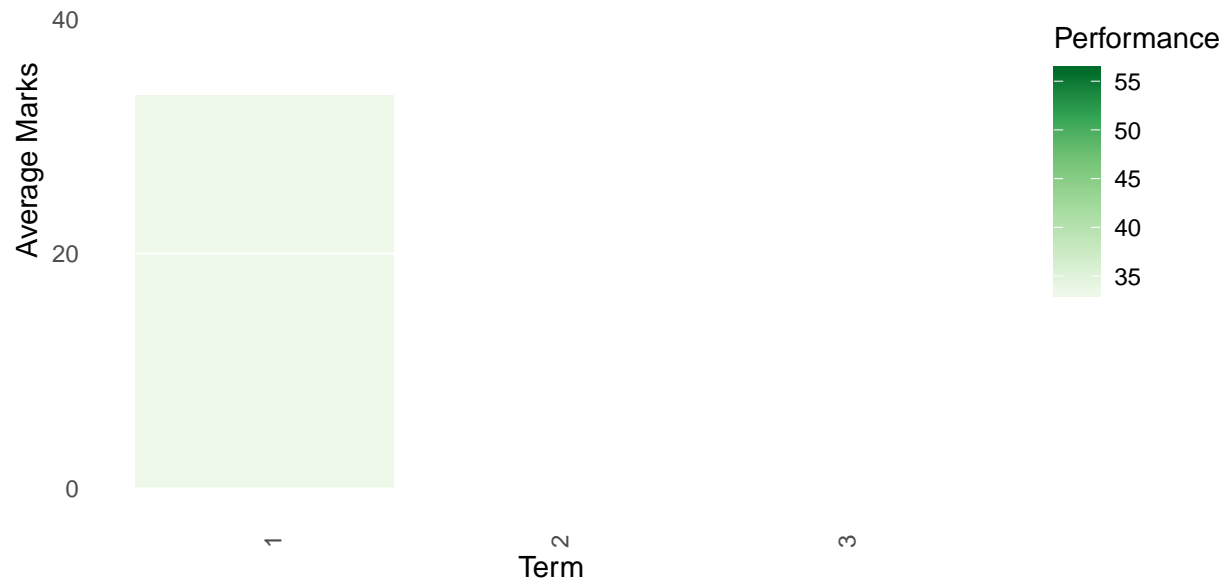
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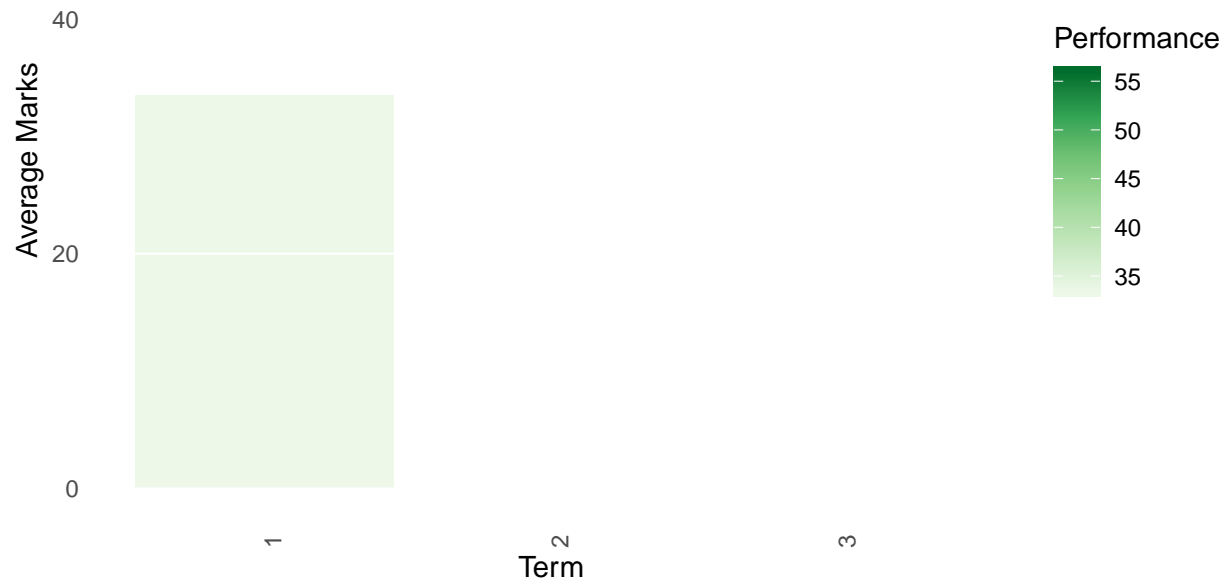
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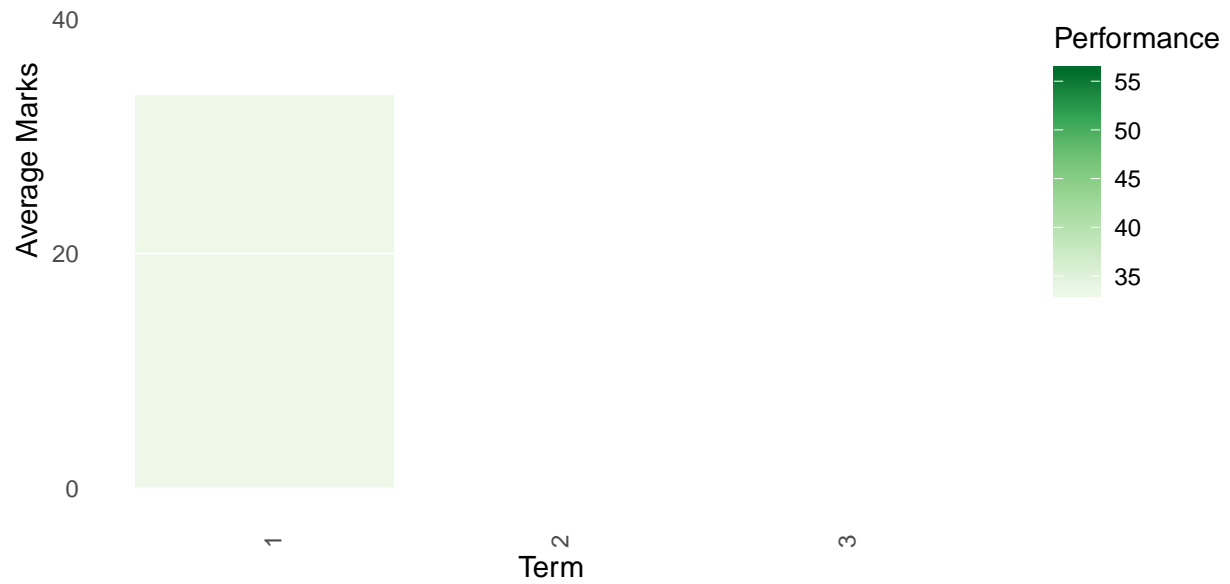
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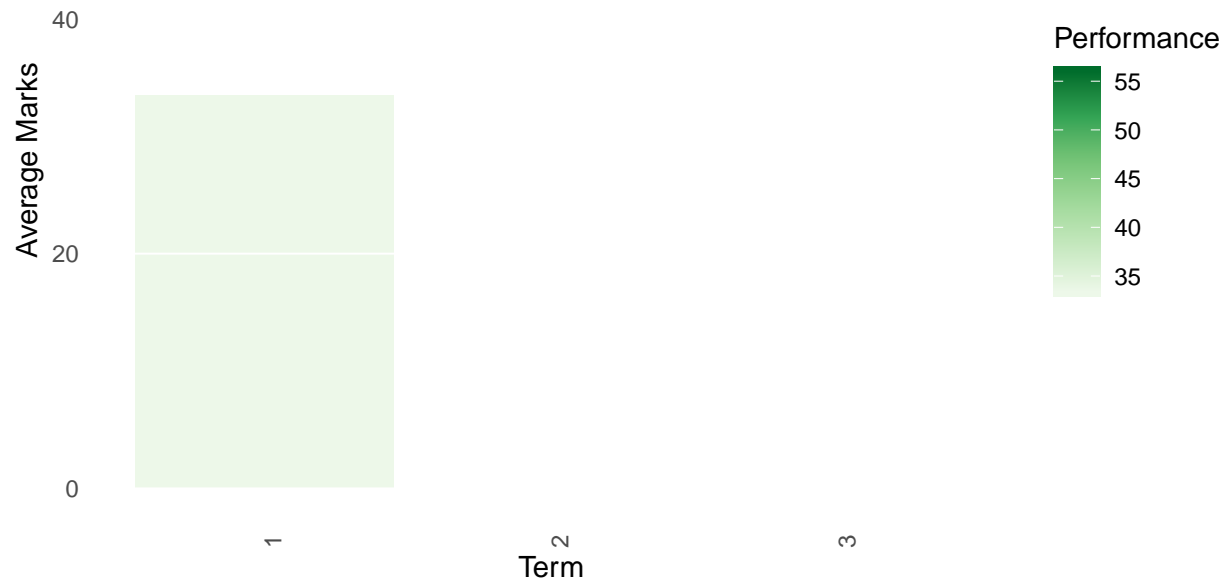
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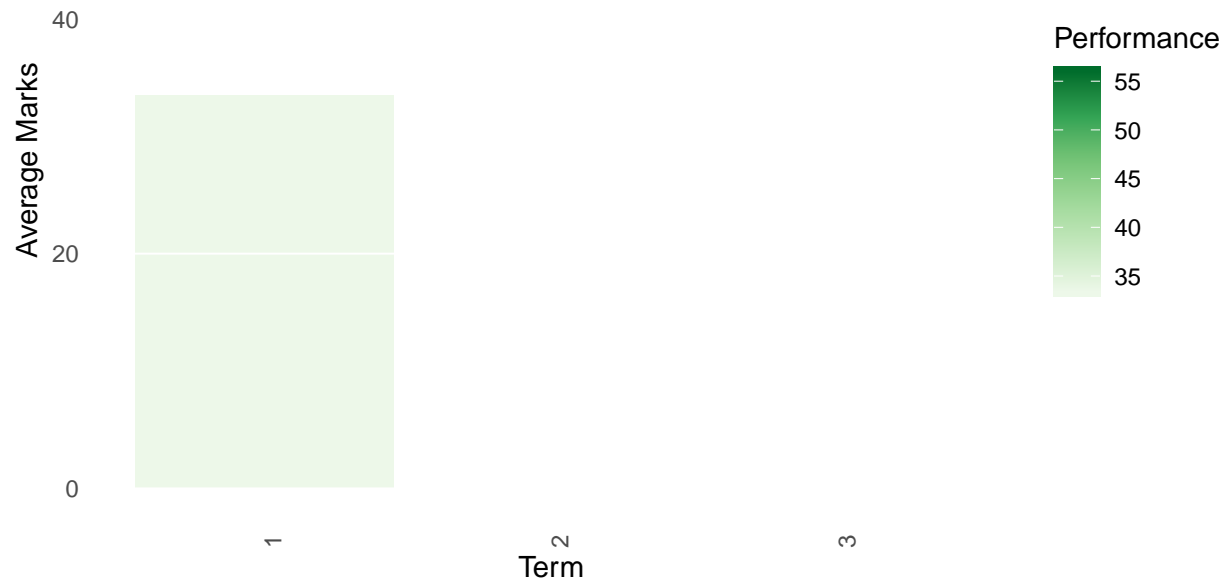
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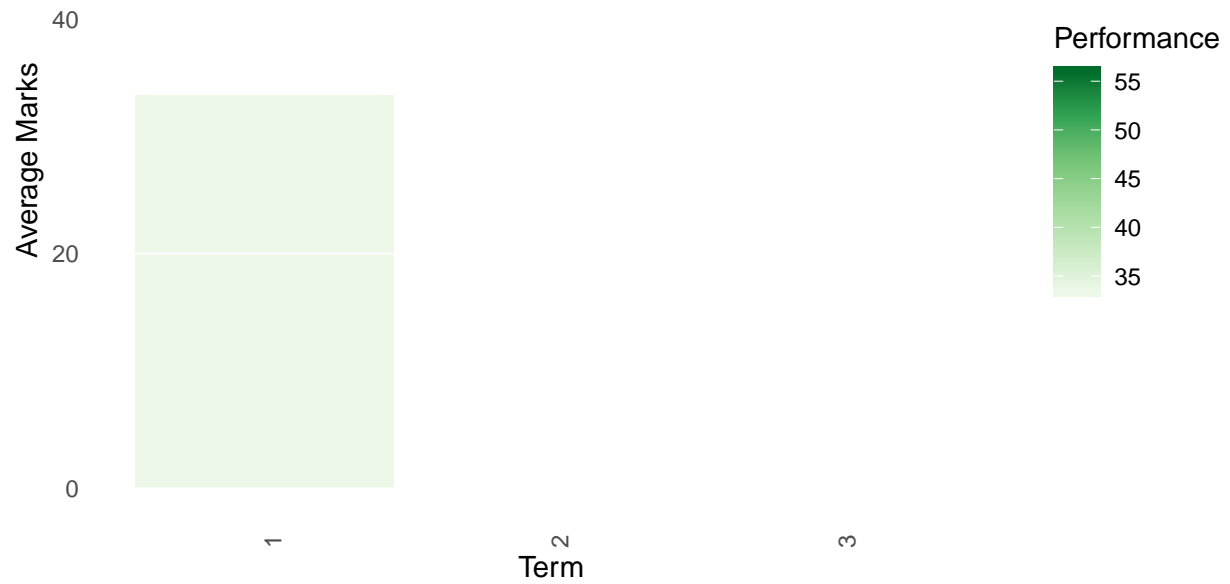
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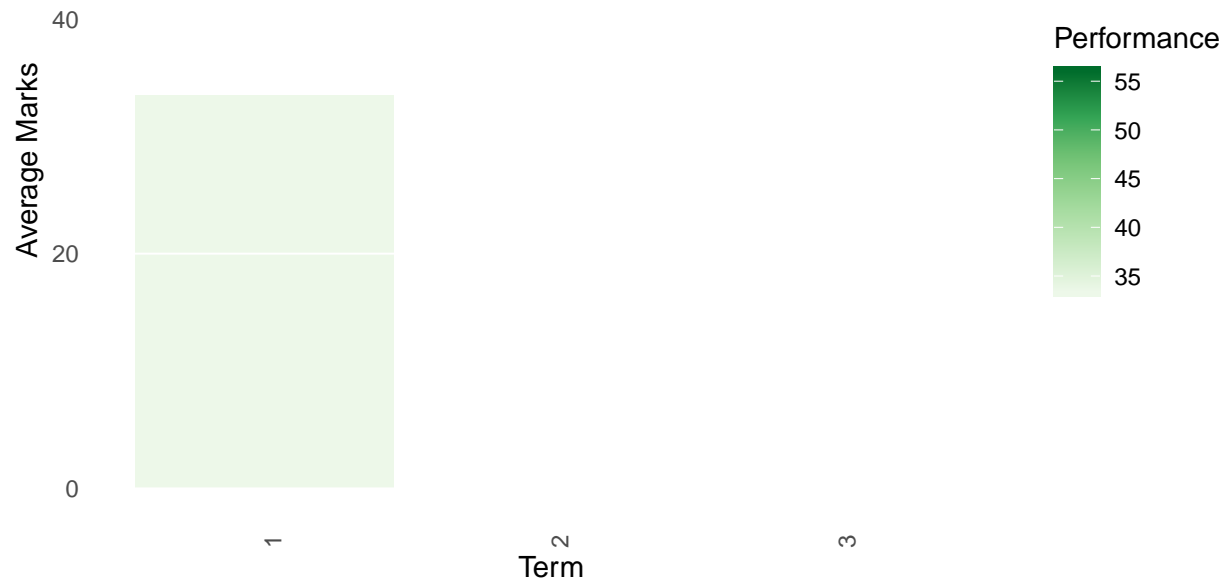
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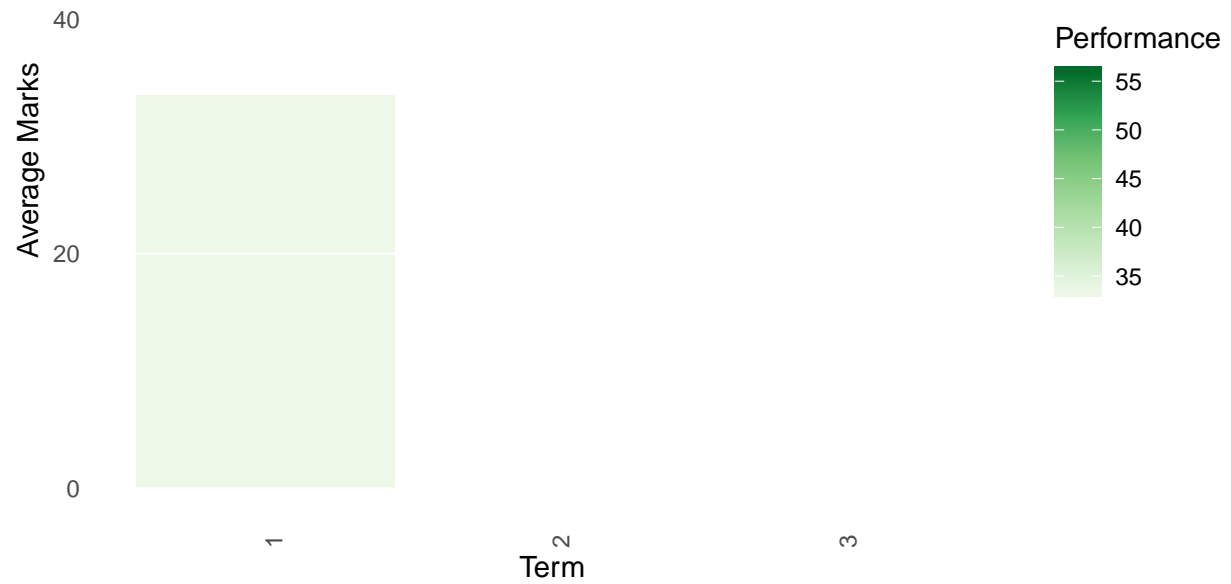
Overall Marks over the Year for Treatment Group



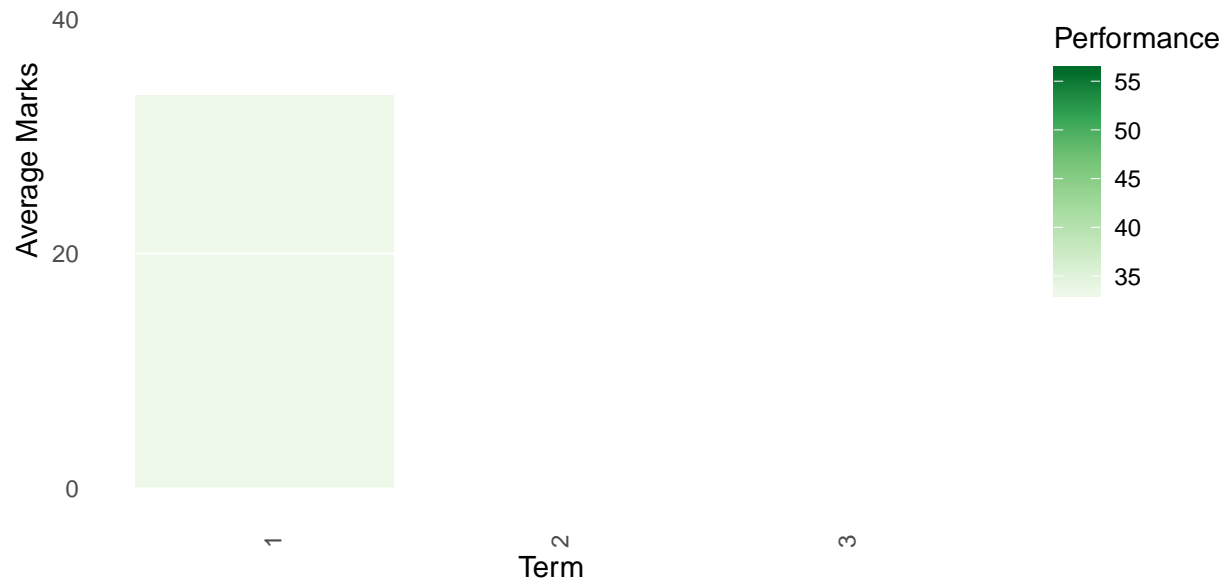
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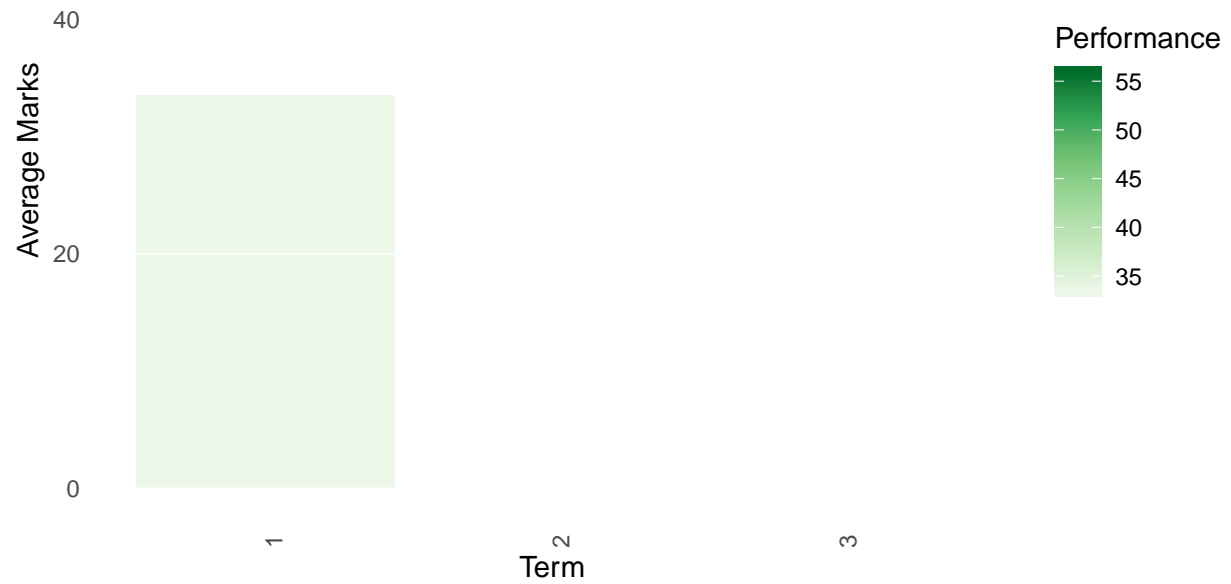
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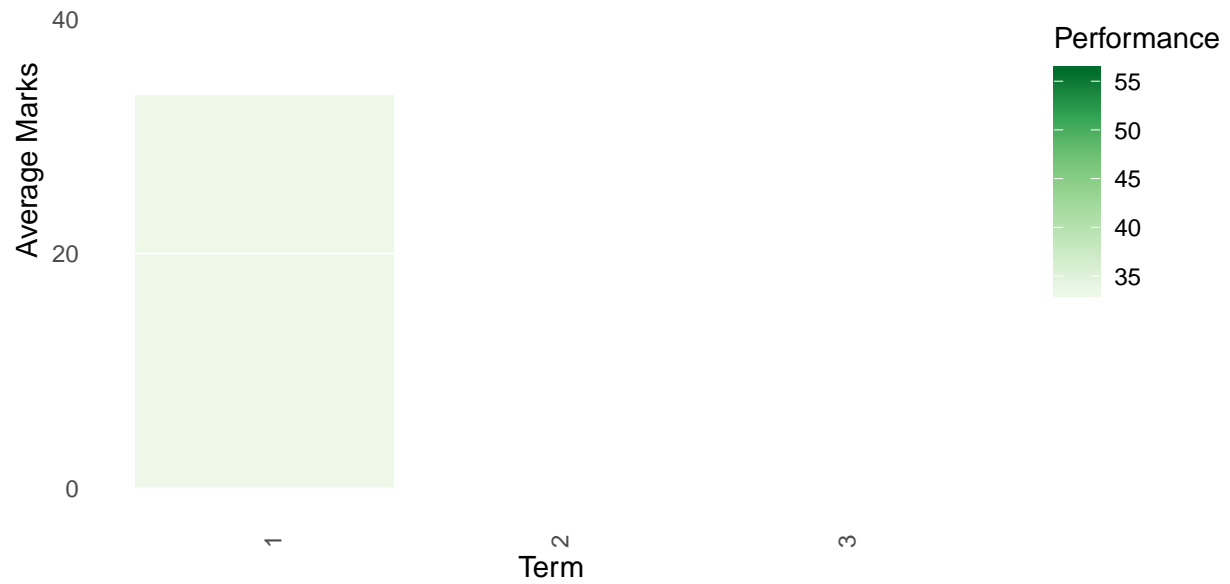
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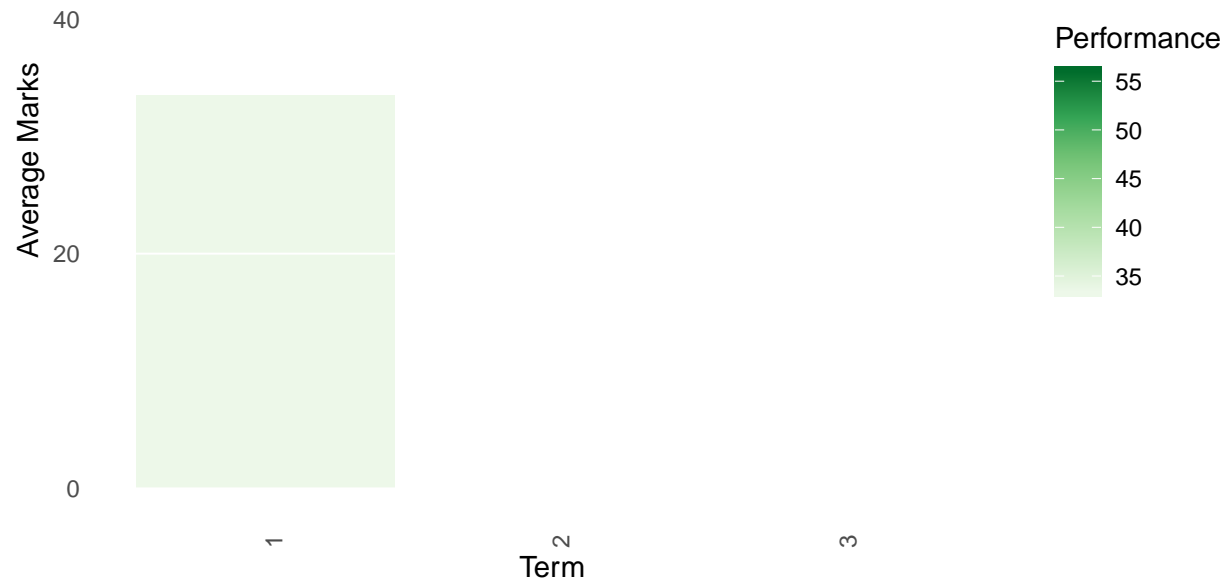
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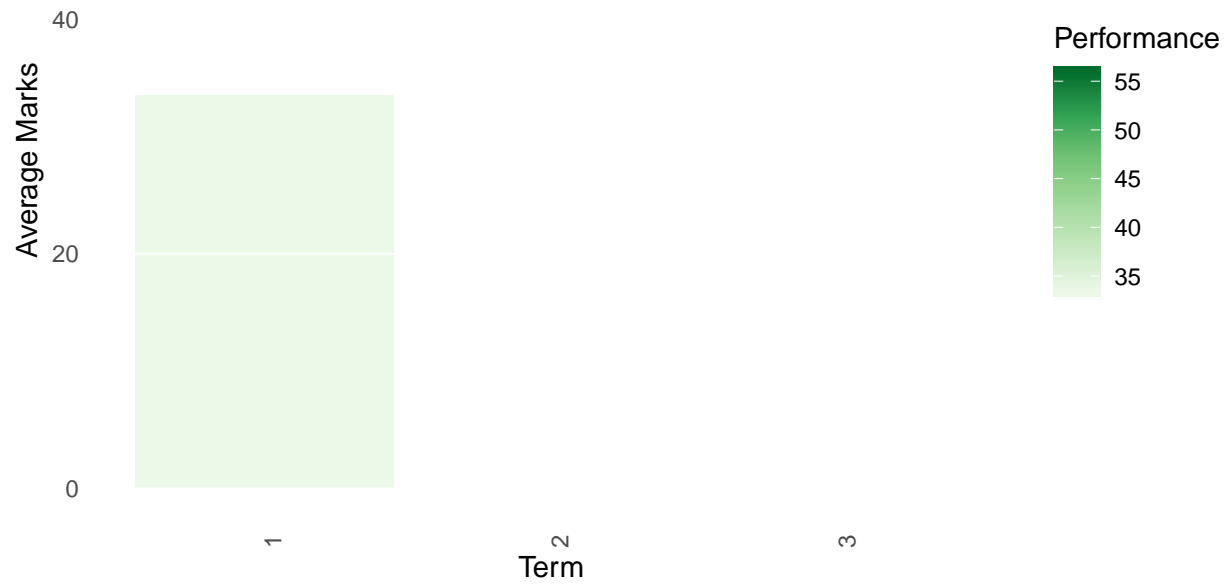
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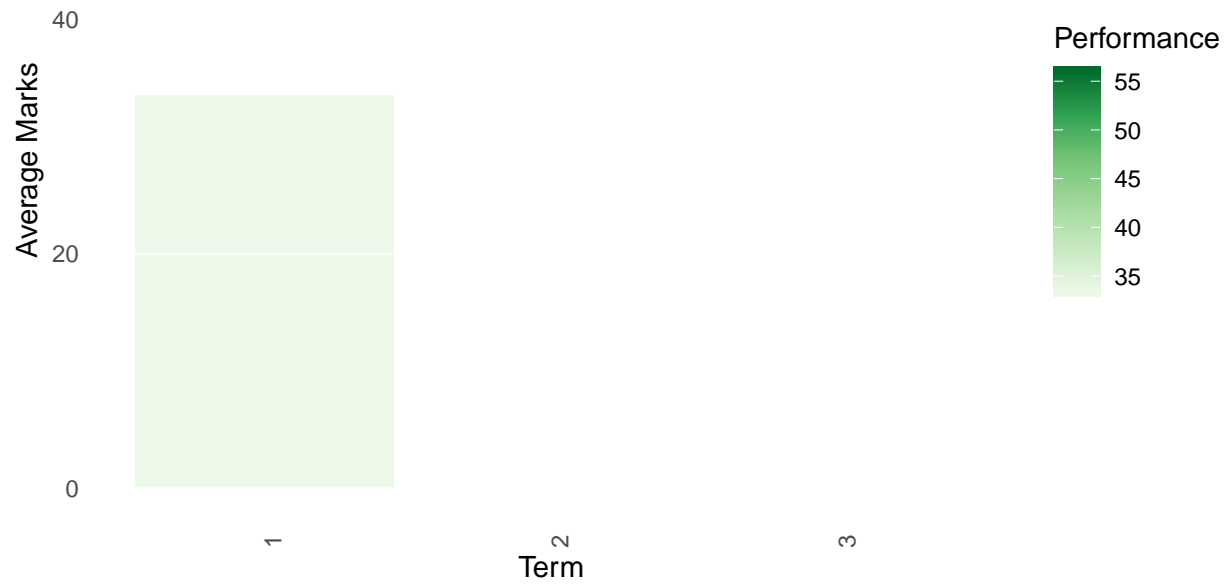
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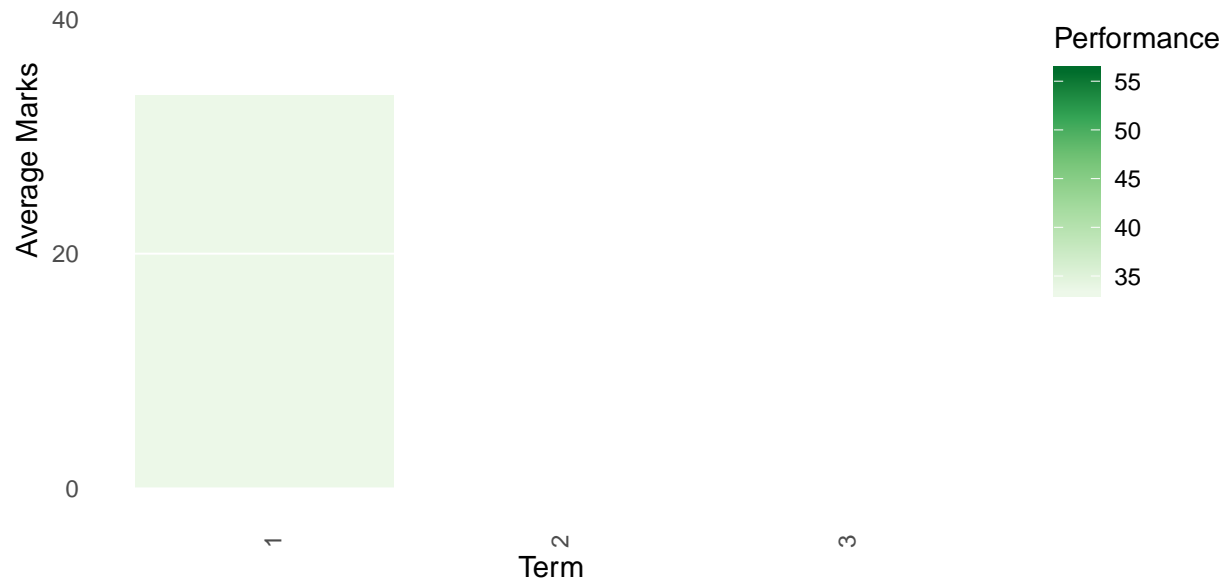
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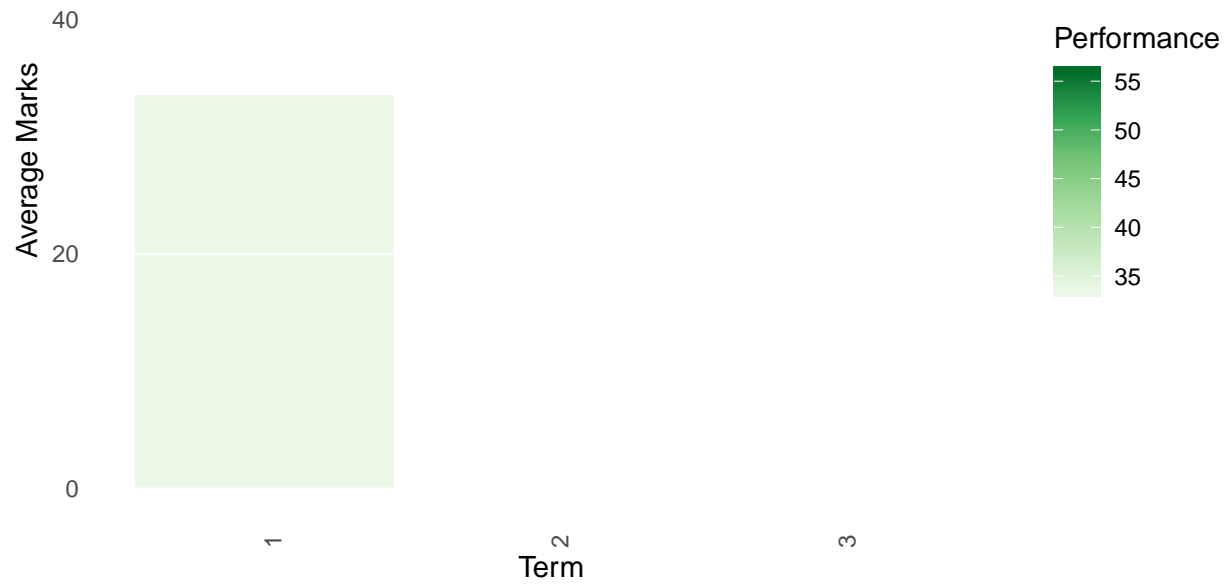
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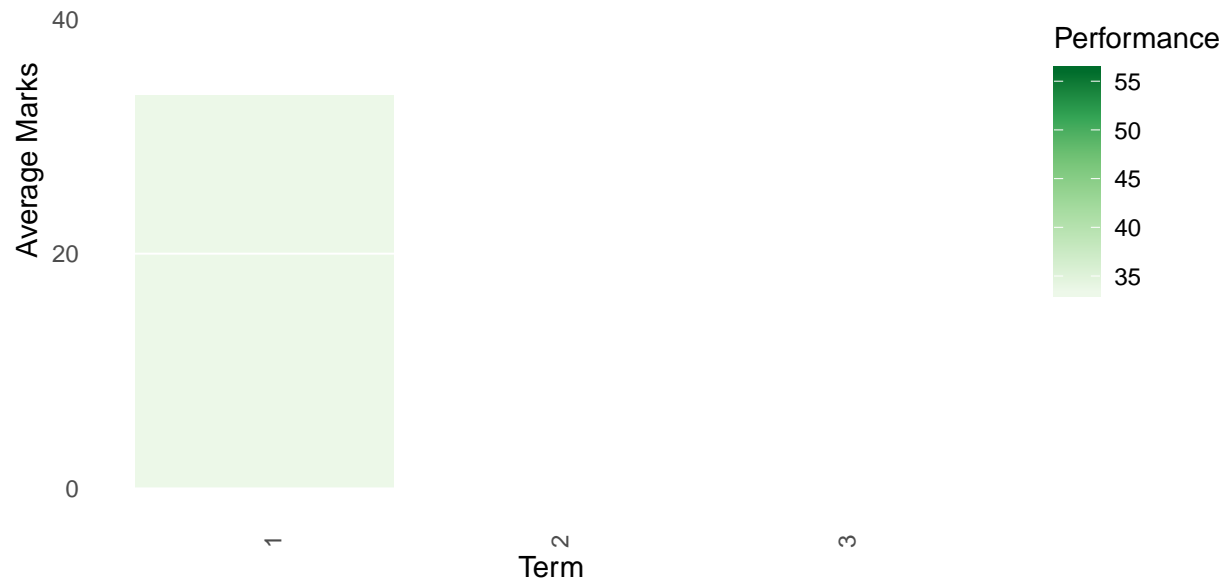
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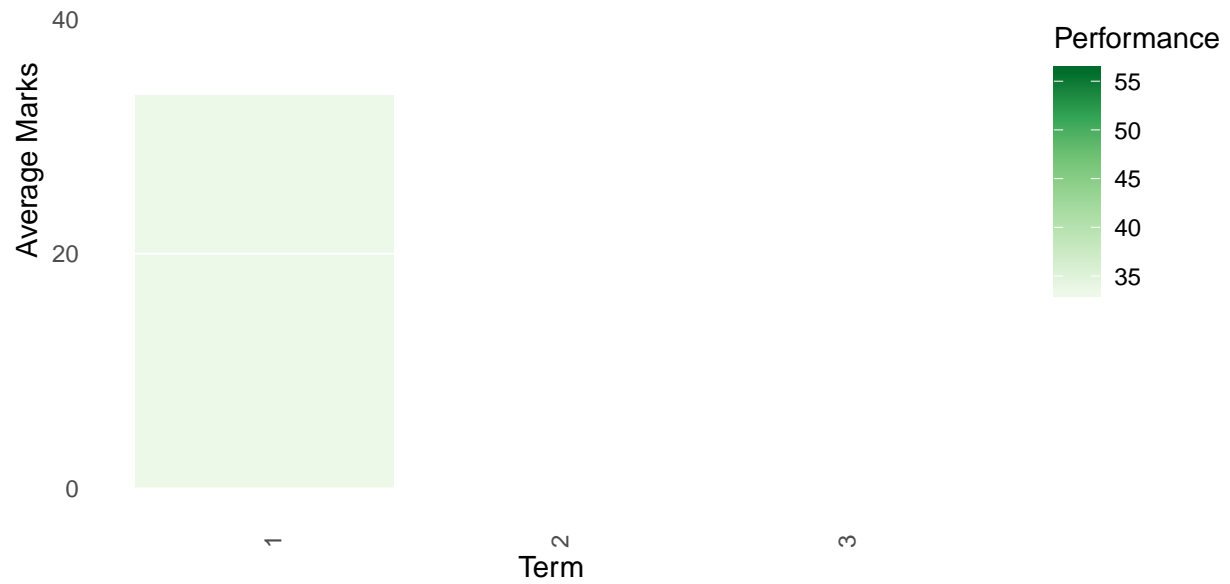
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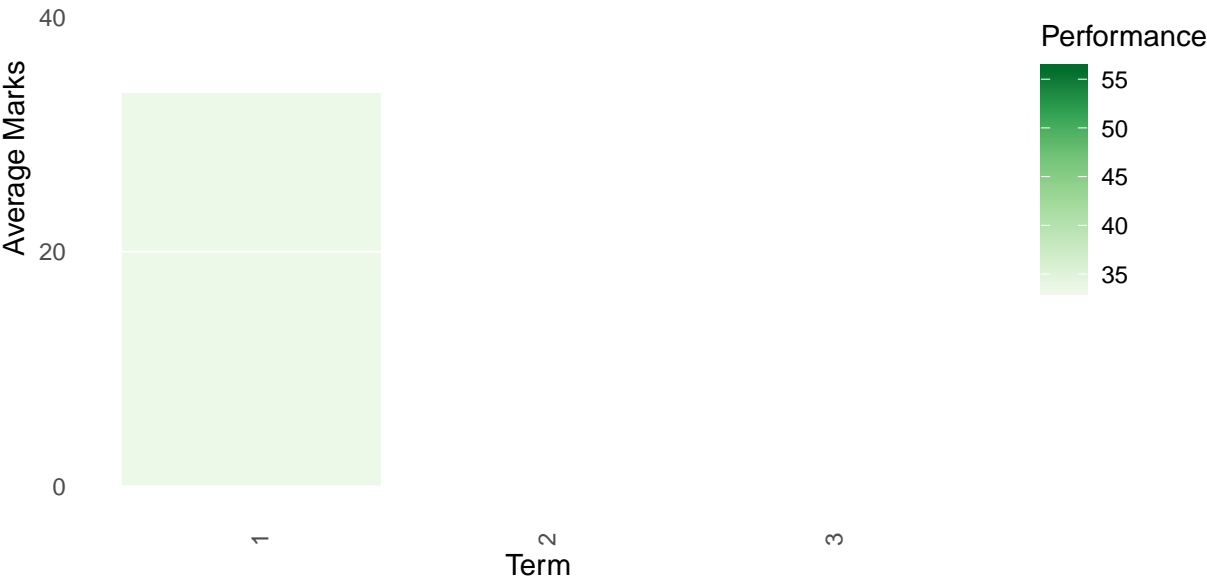
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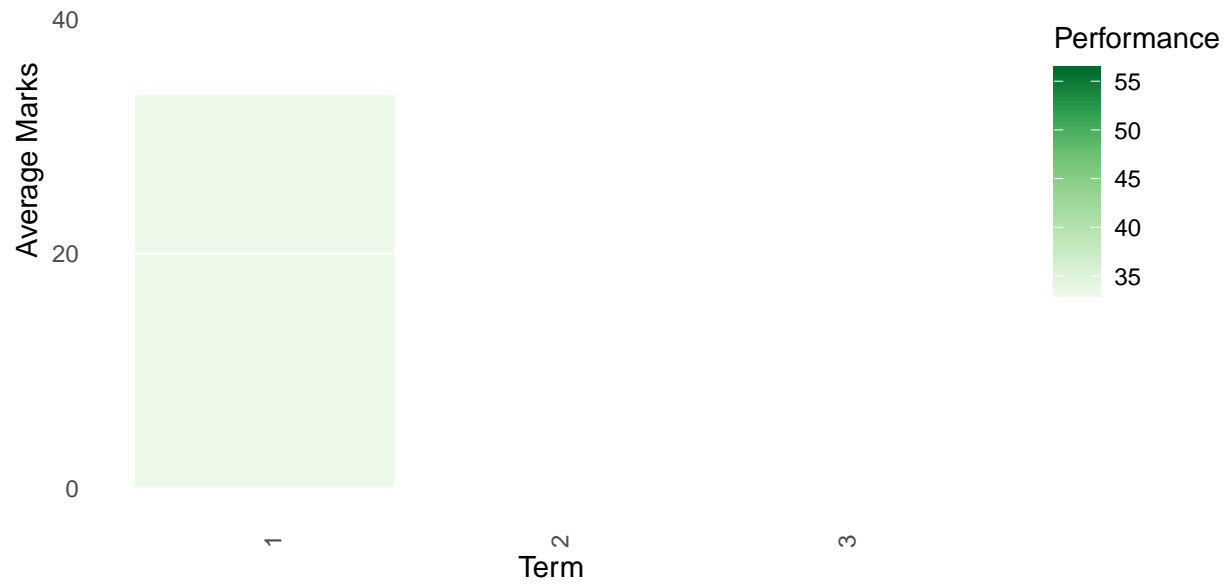
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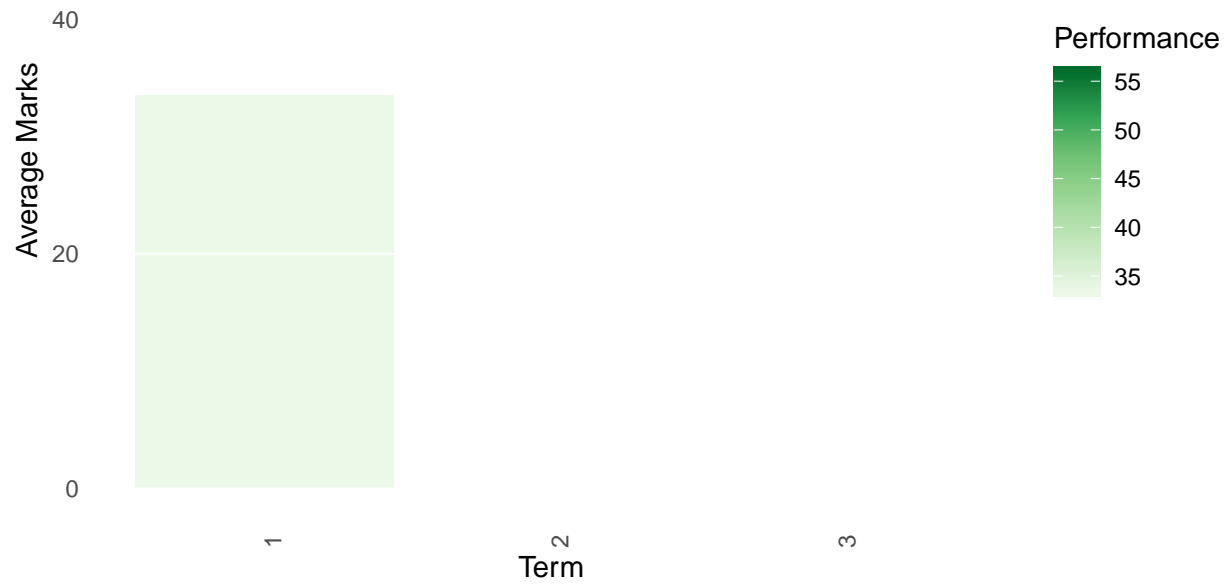
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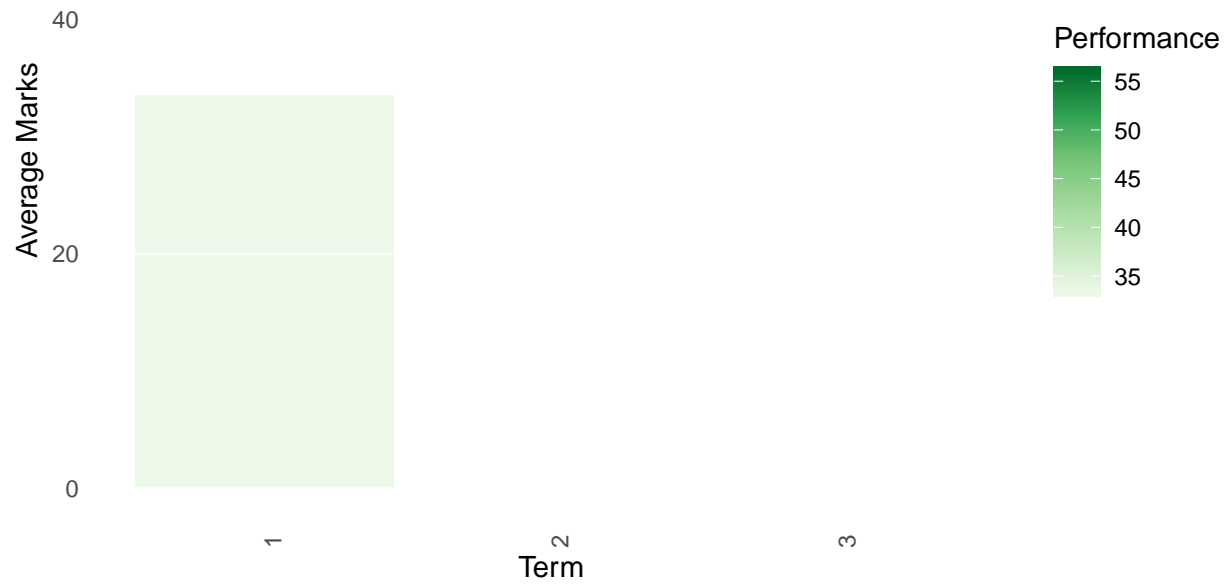
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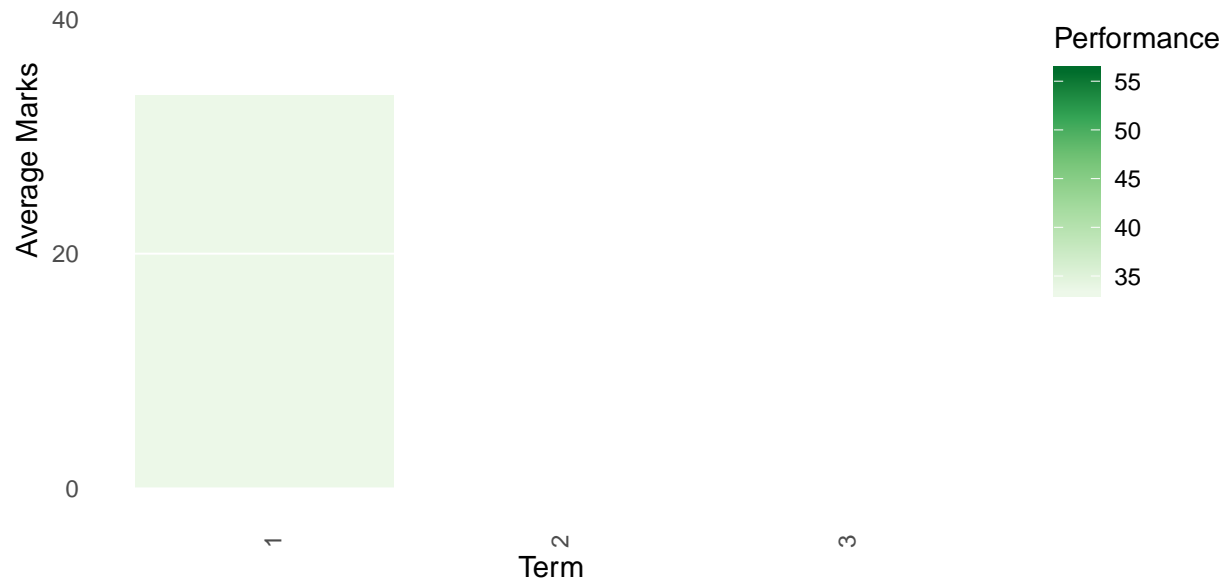
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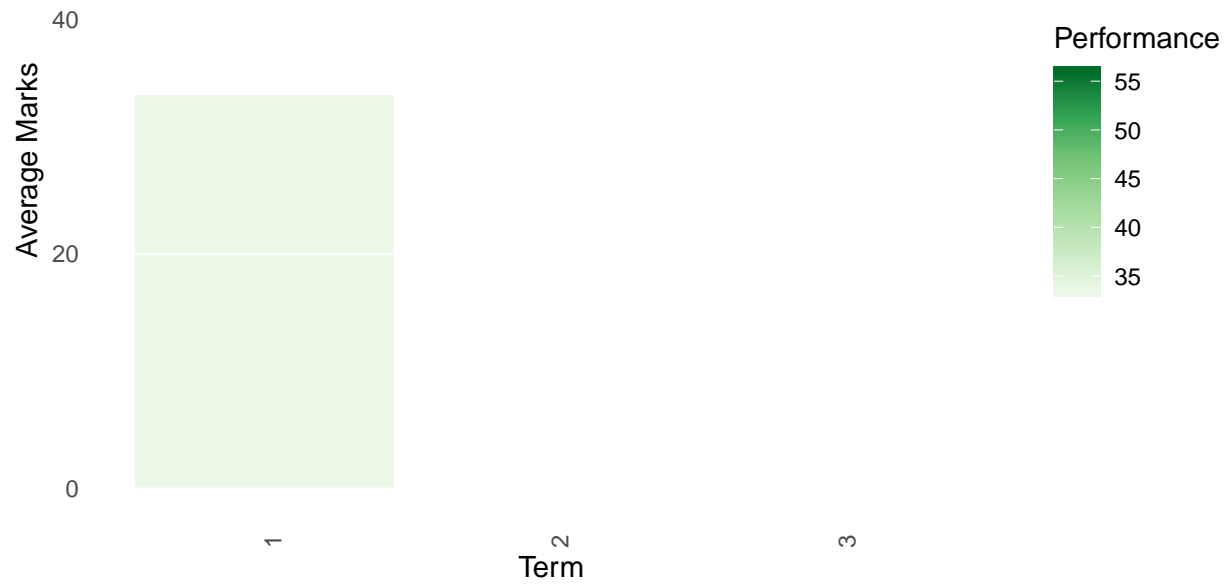
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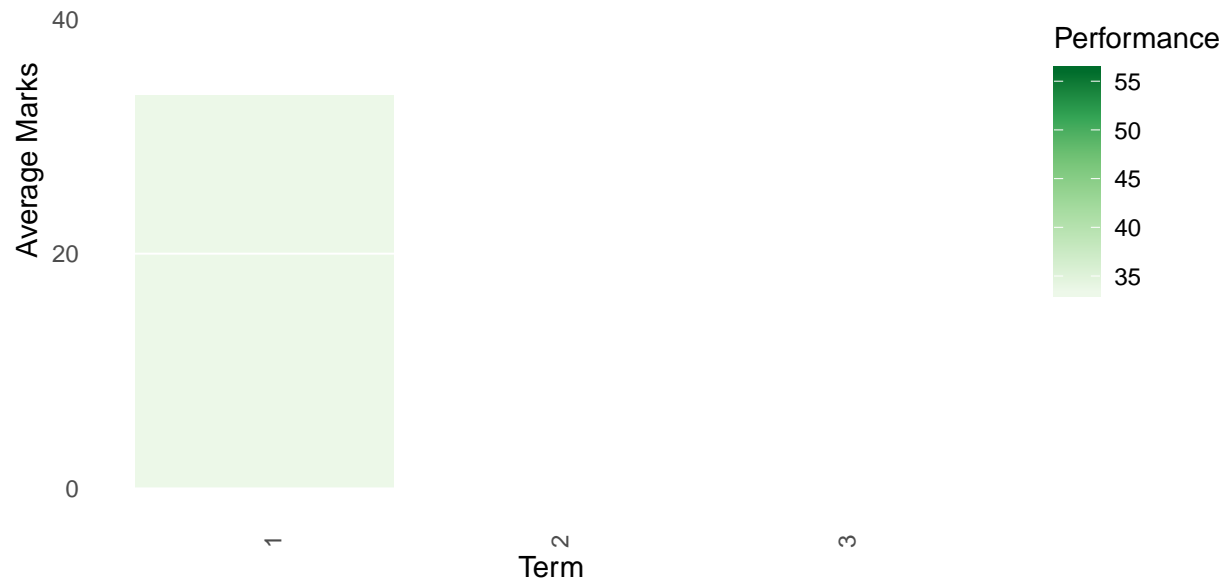
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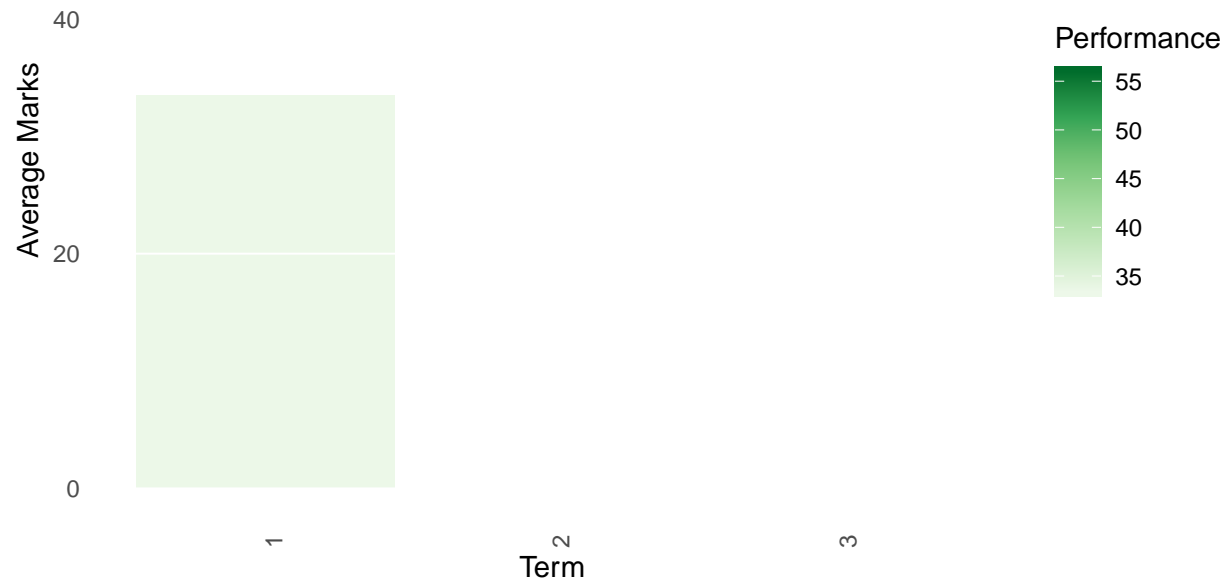
Overall Marks over the Year for Treatment Group



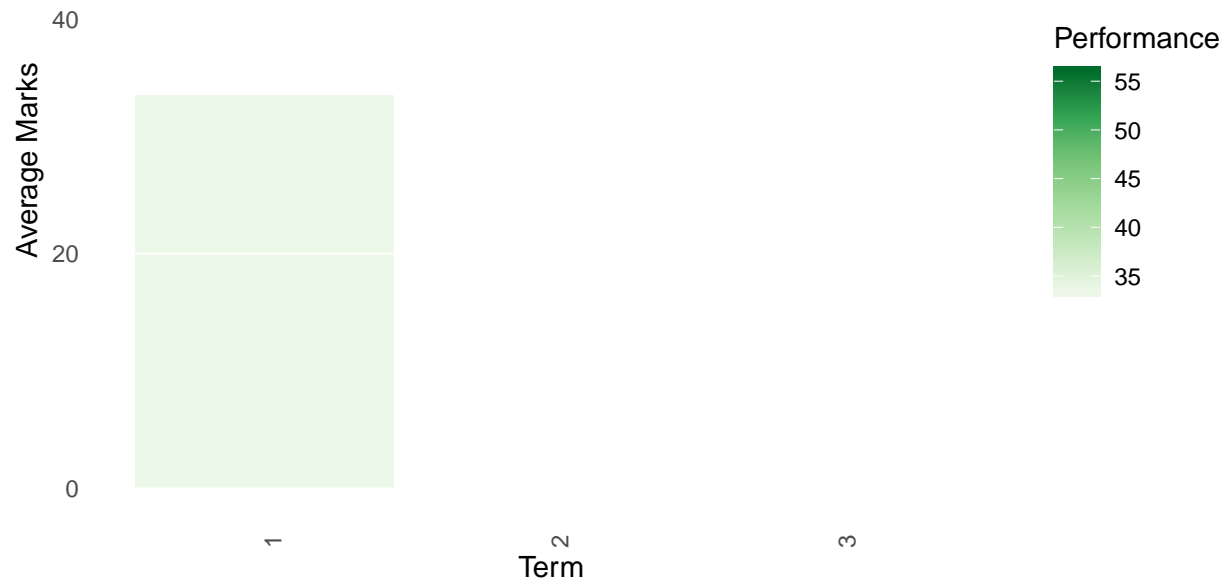
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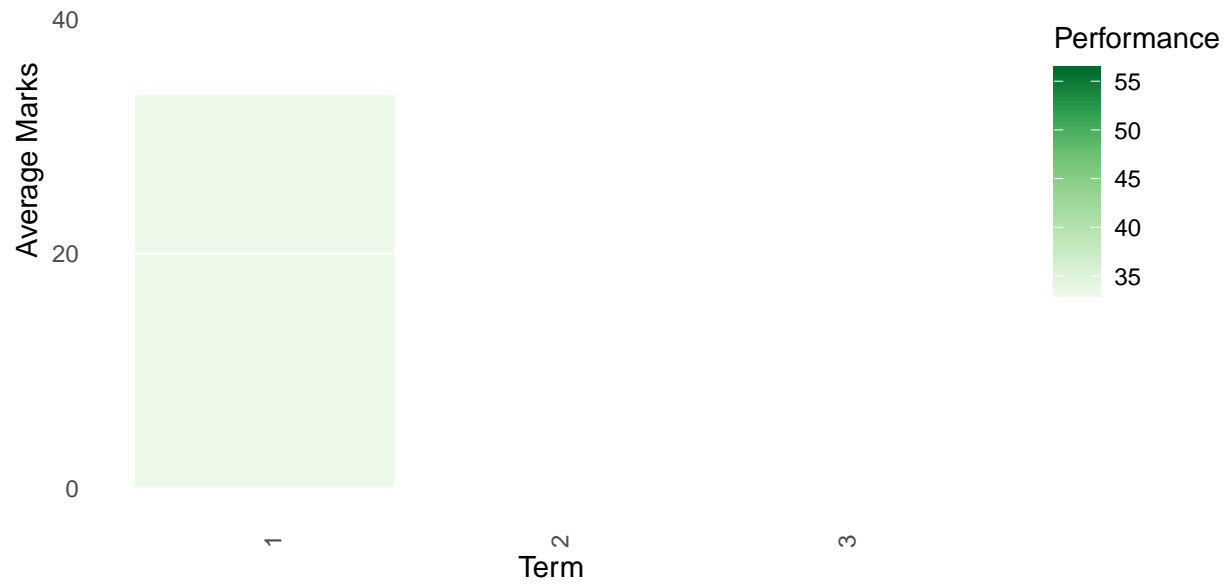
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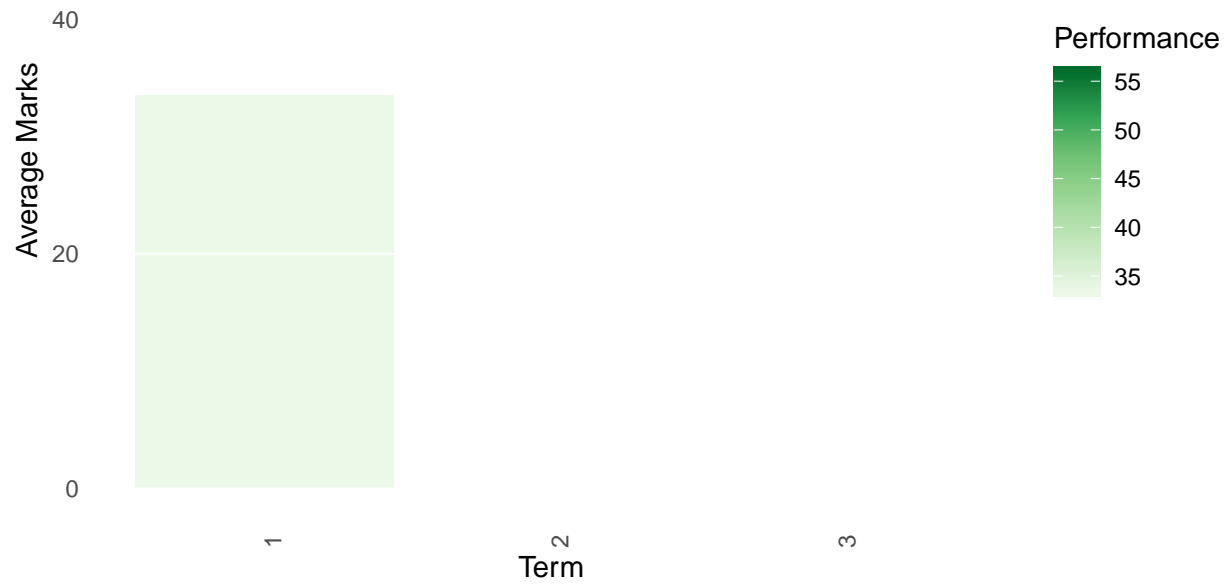
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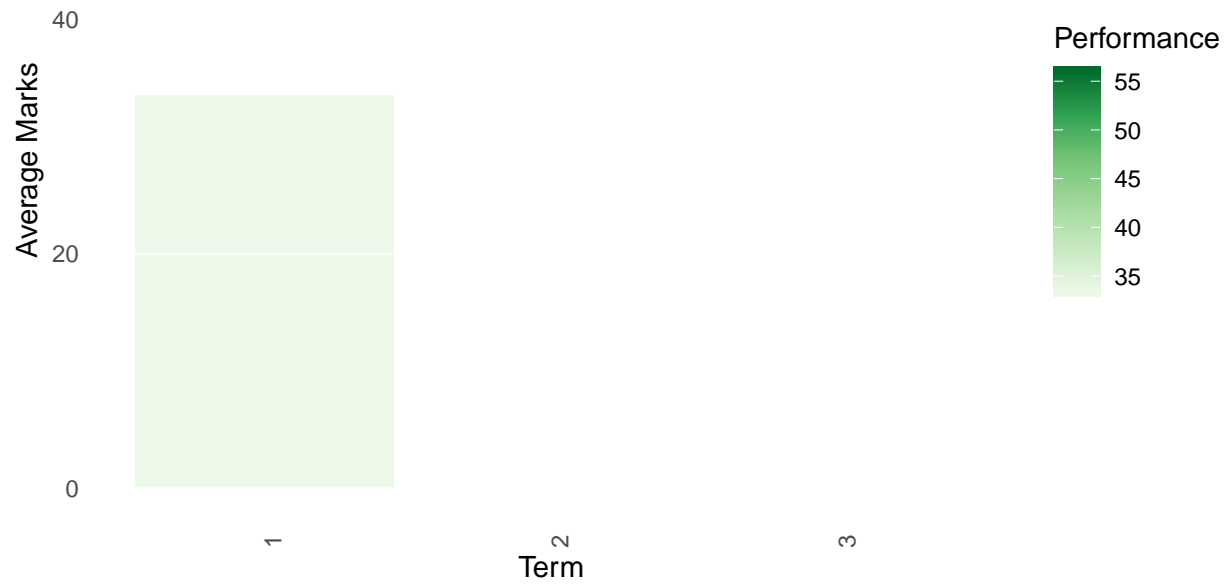
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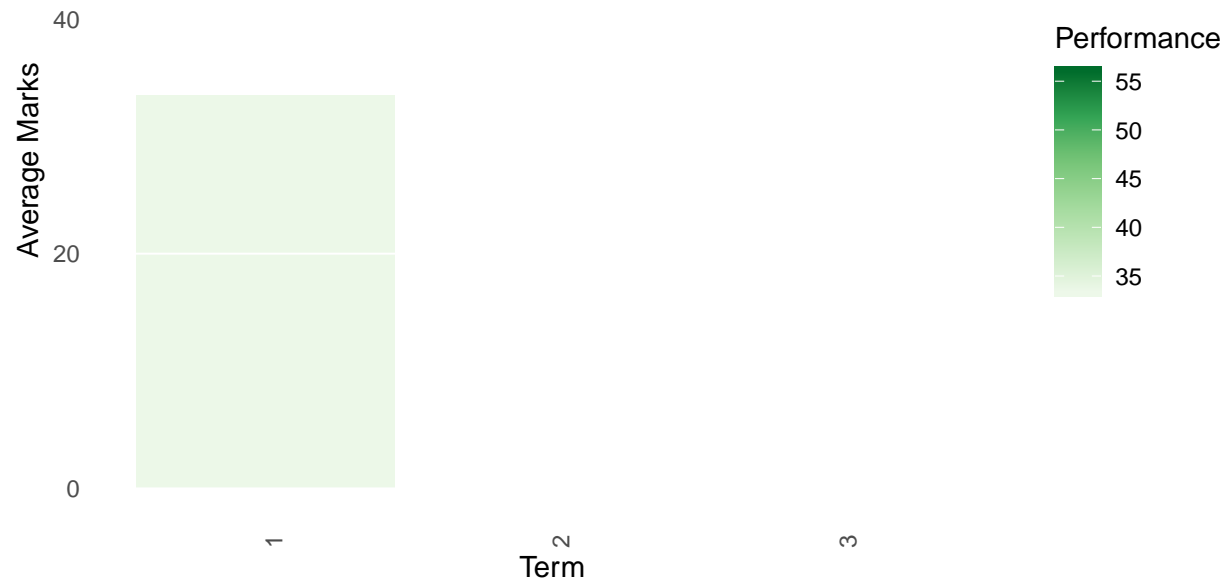
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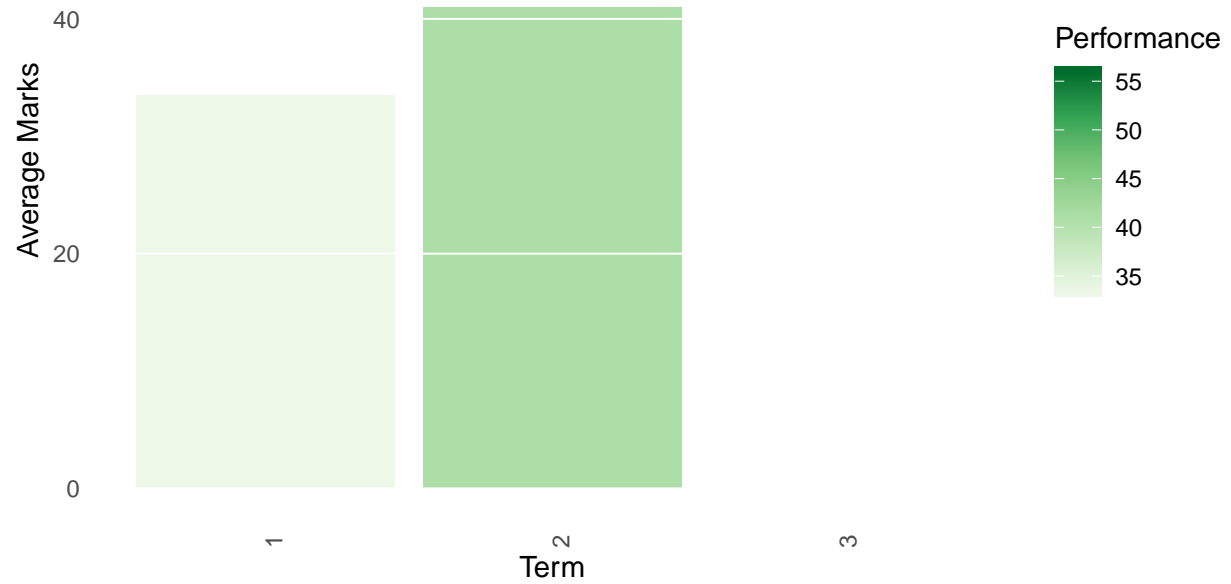
Overall Marks over the Year for Treatment Group



Overall Marks over the Year for Treatment Group



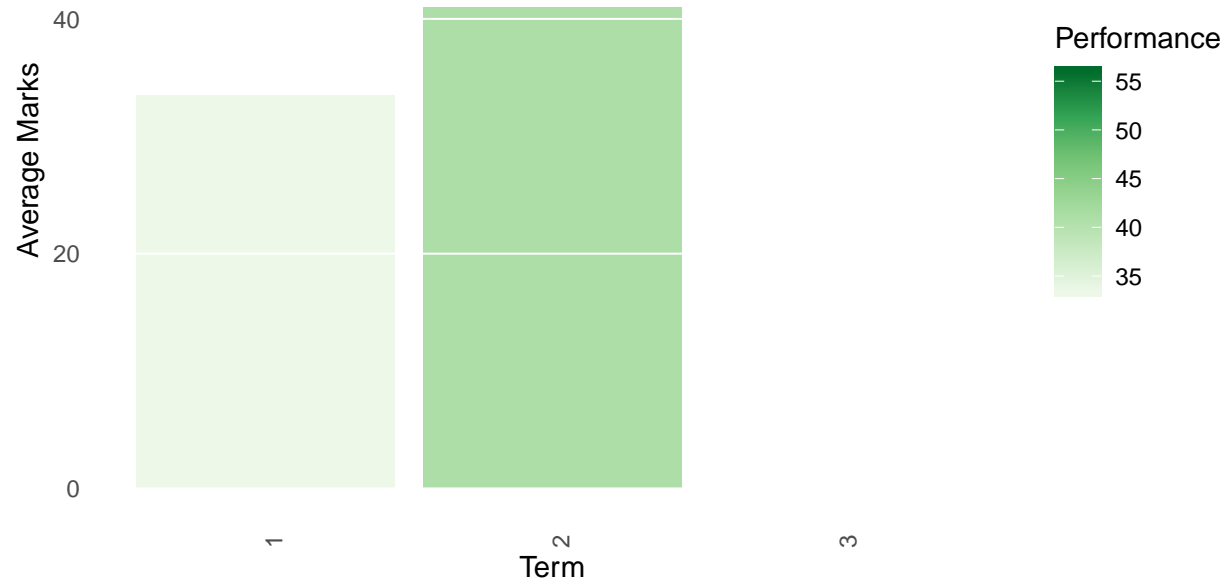
Overall Marks over the Year for Treatment Group



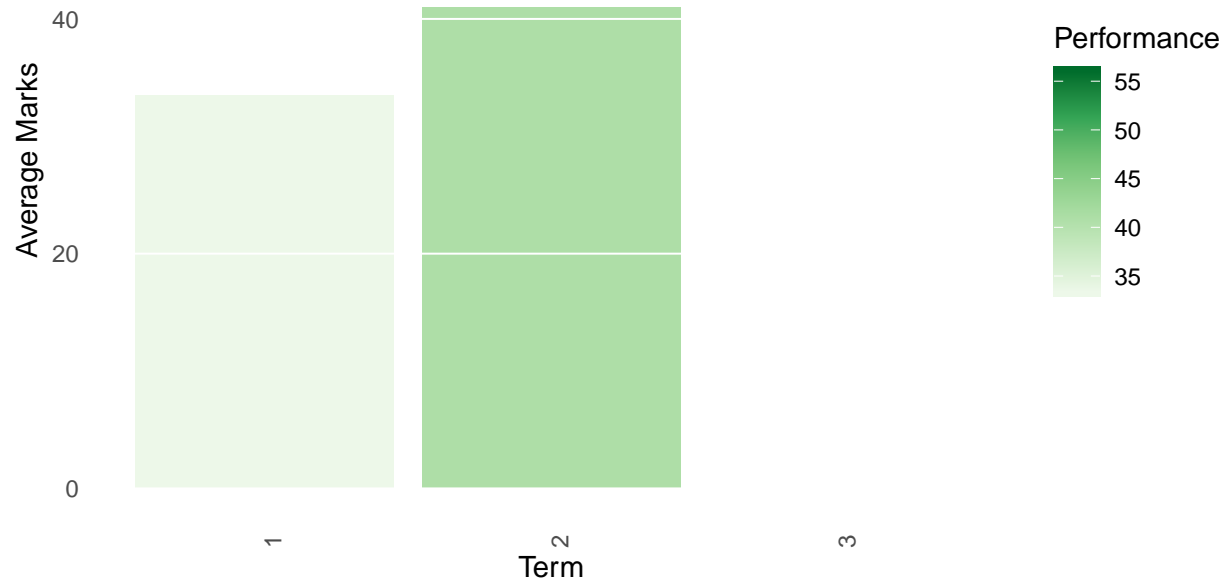
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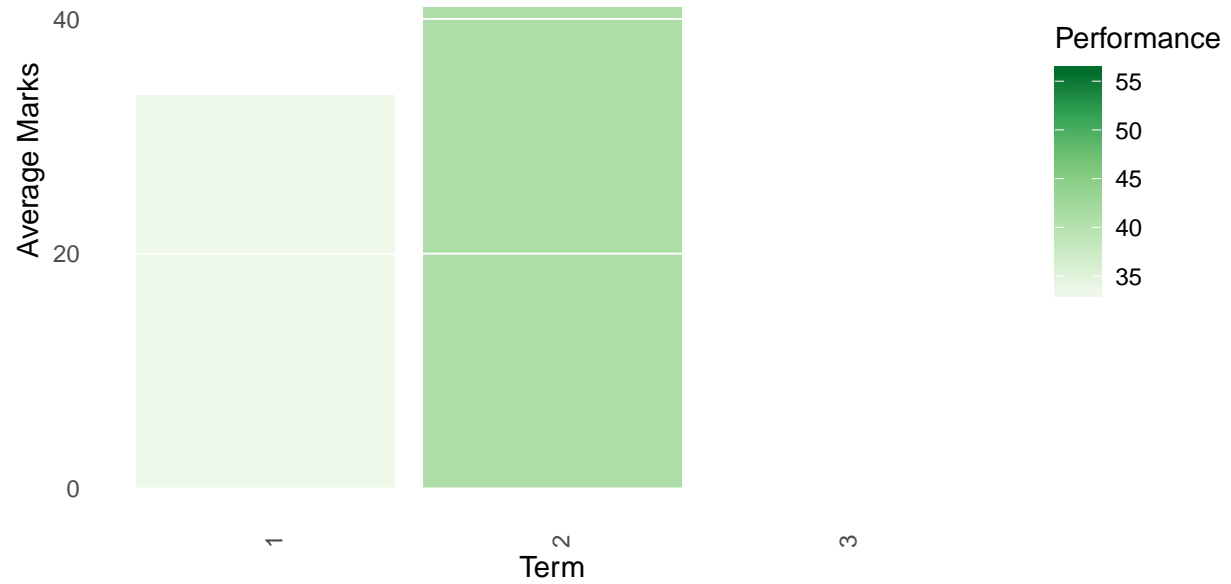
Overall Marks over the Year for Treatment Group



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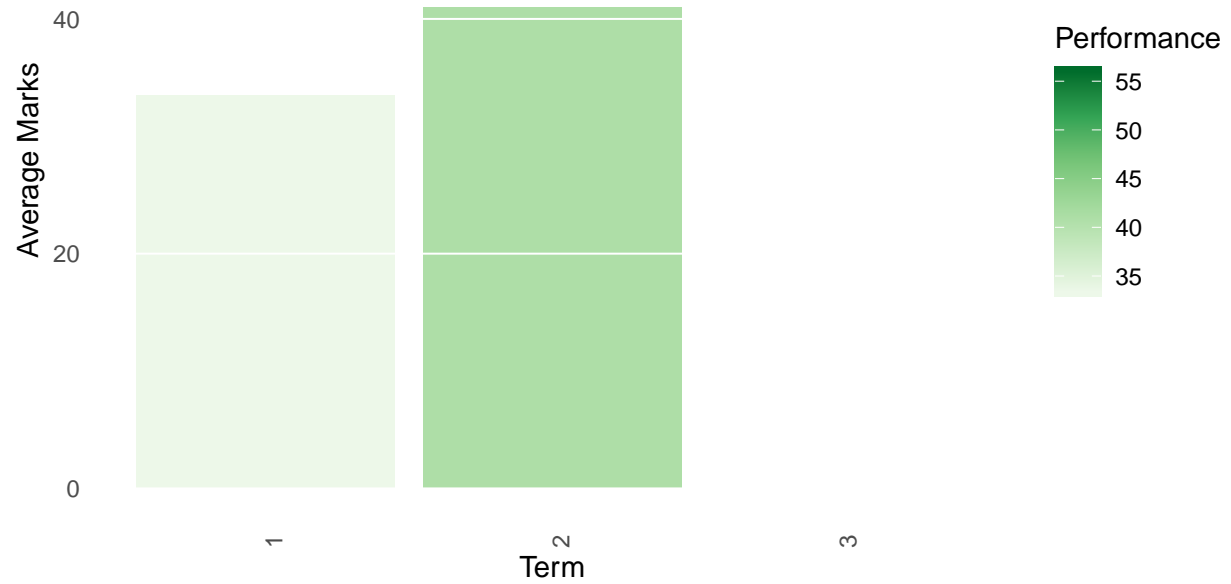
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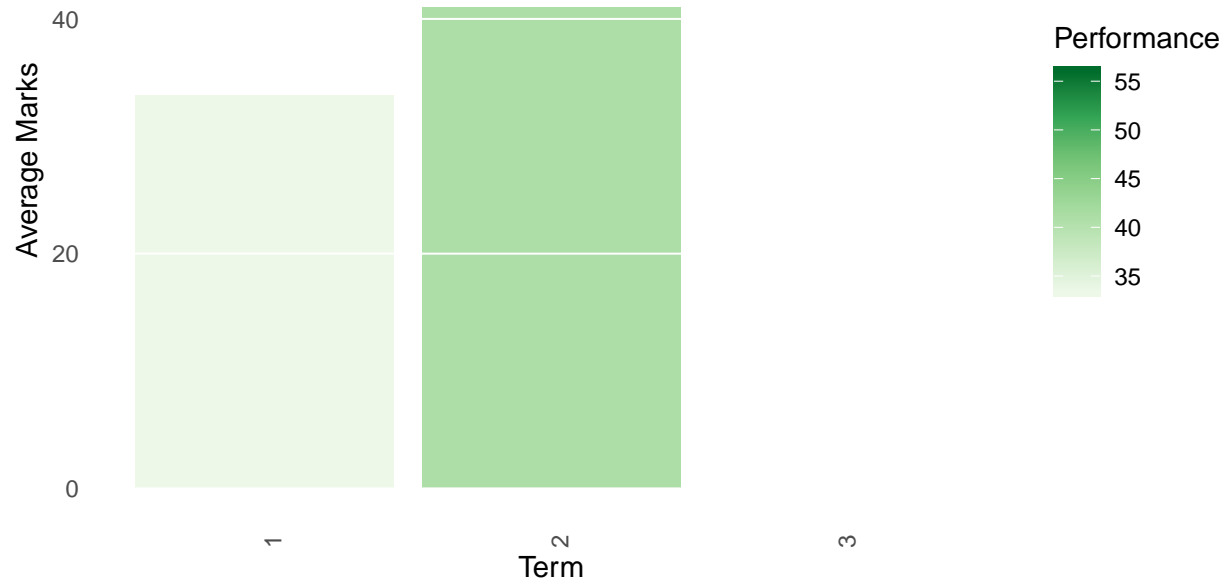
Overall Marks over the Year for Treatment Group



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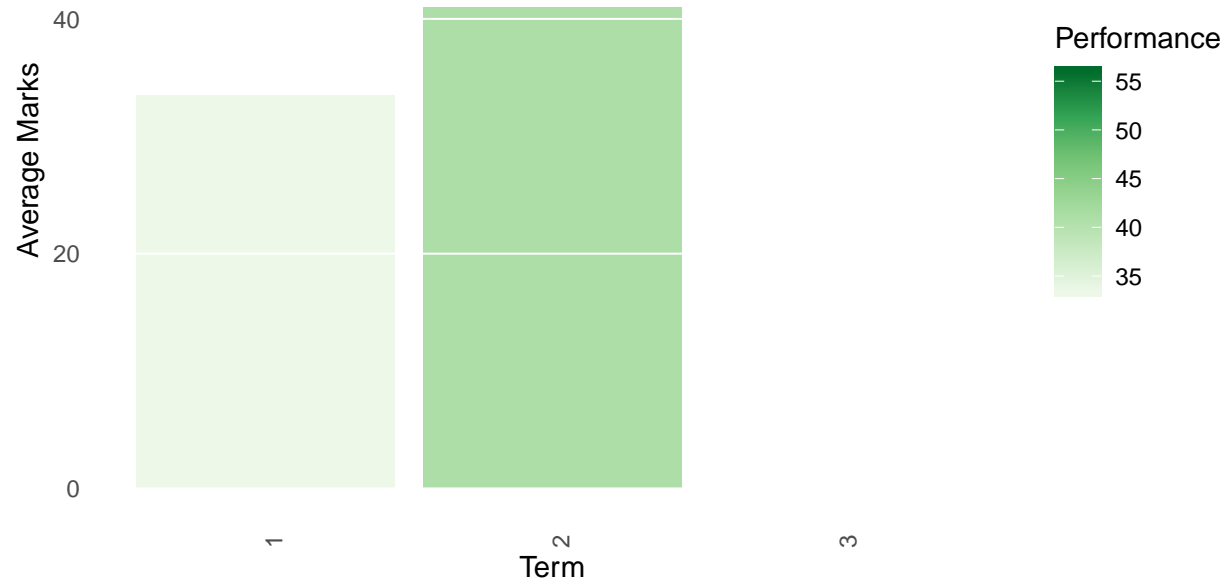
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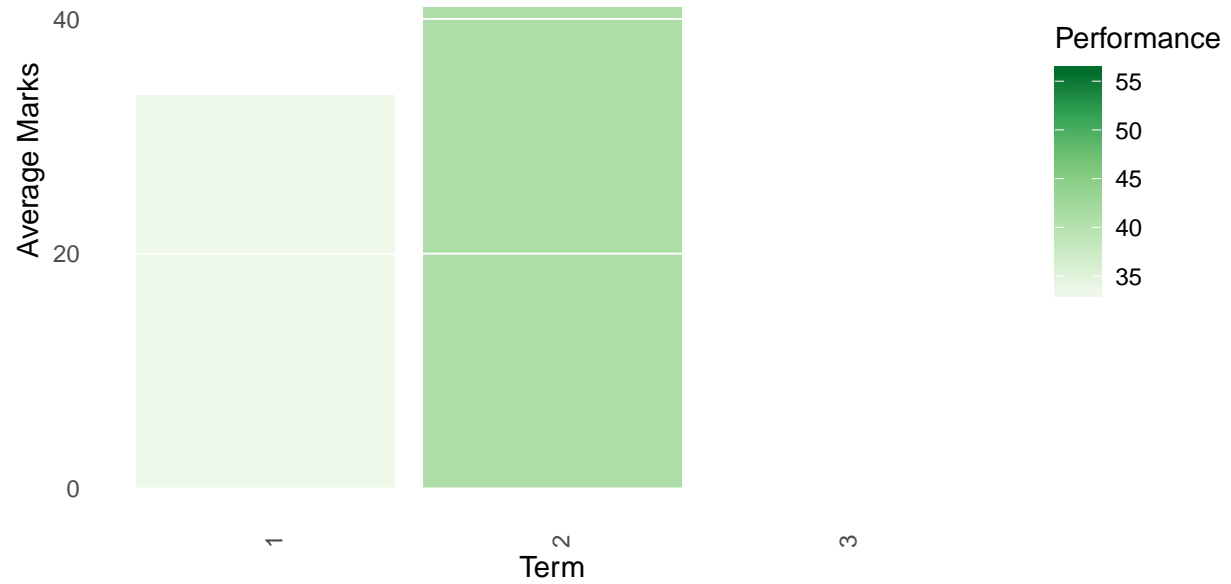
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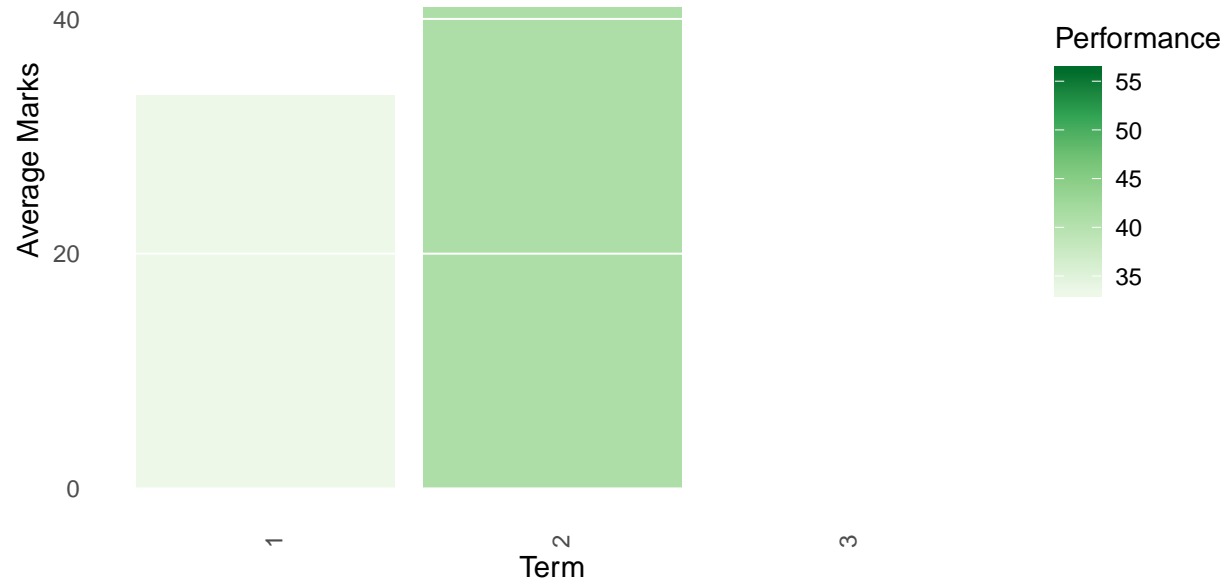
Overall Marks over the Year for Treatment Group



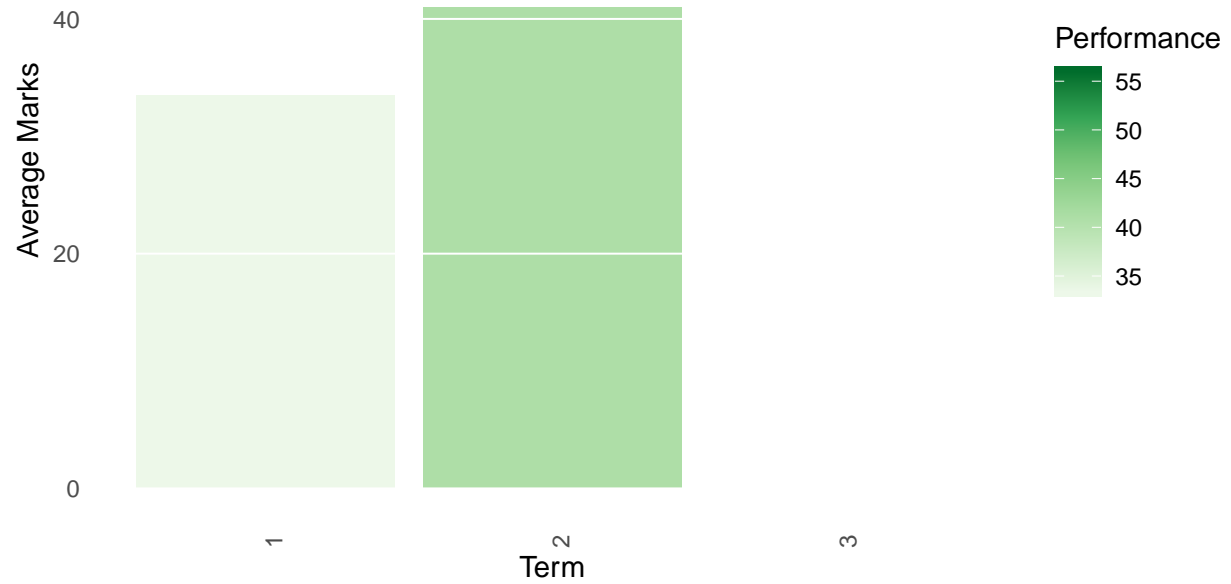
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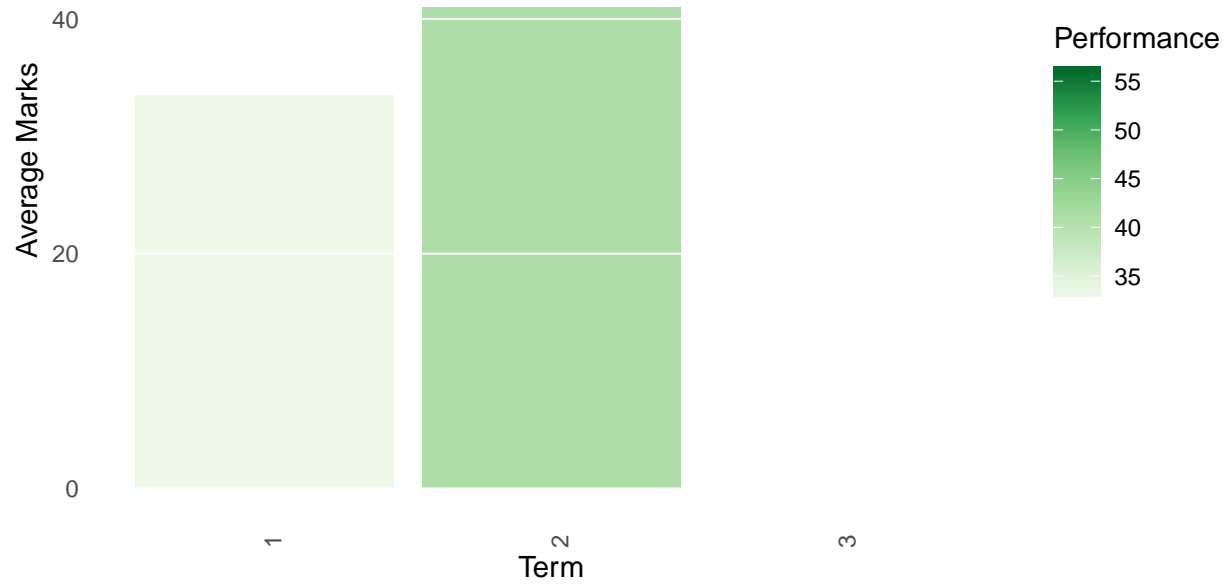
Overall Marks over the Year for Treatment Group



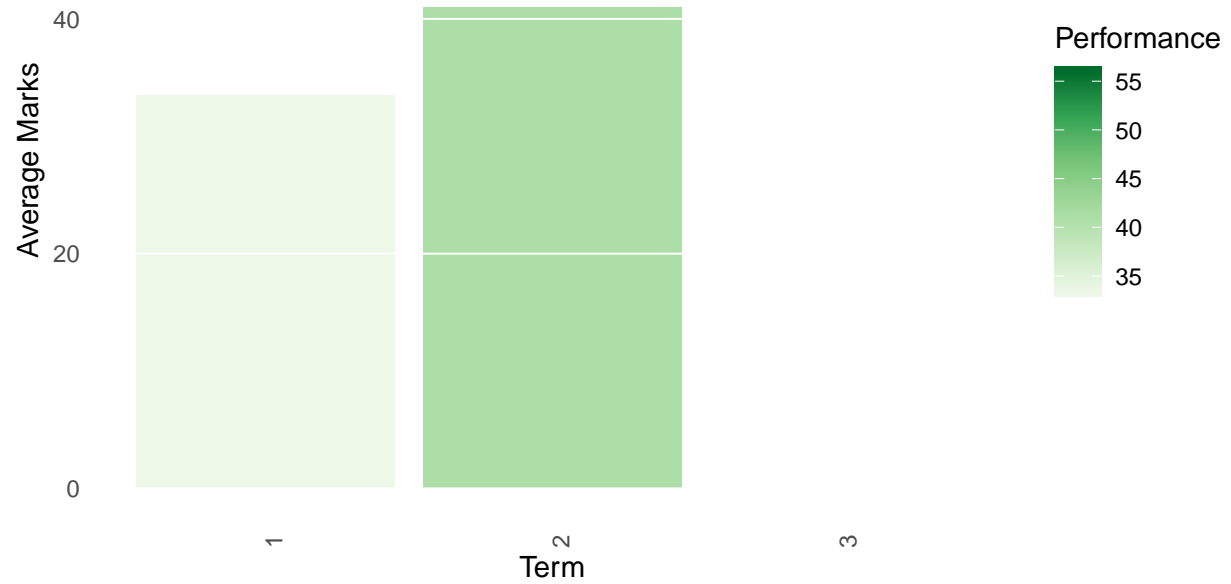
Overall Marks over the Year for Treatment Group



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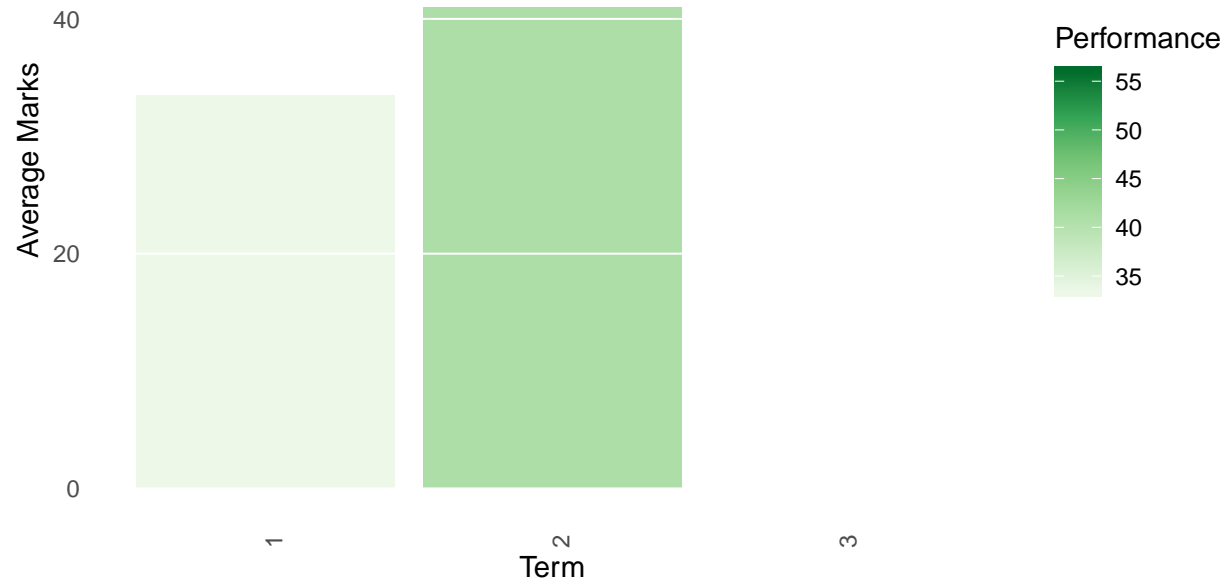
Overall Marks over the Year for Treatment Group



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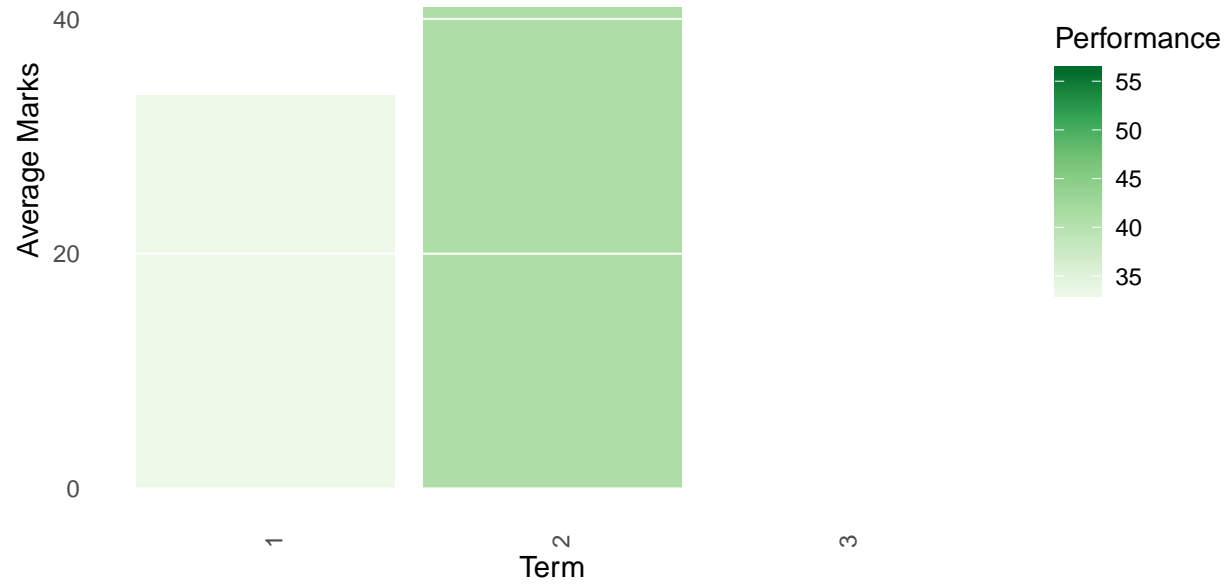
Overall Marks over the Year for Treatment Group



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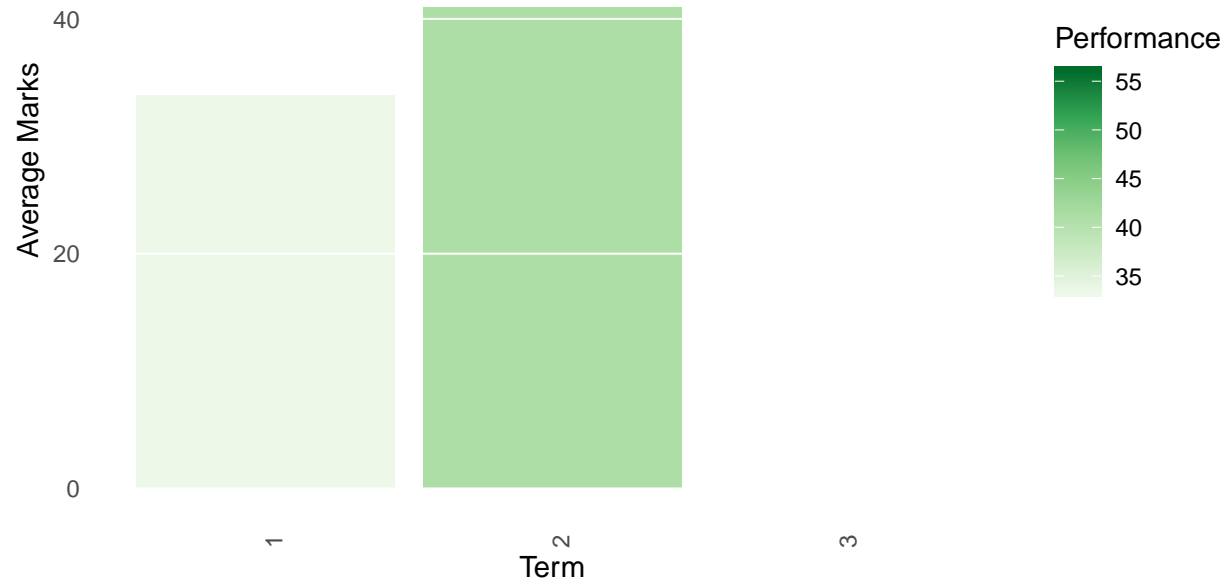
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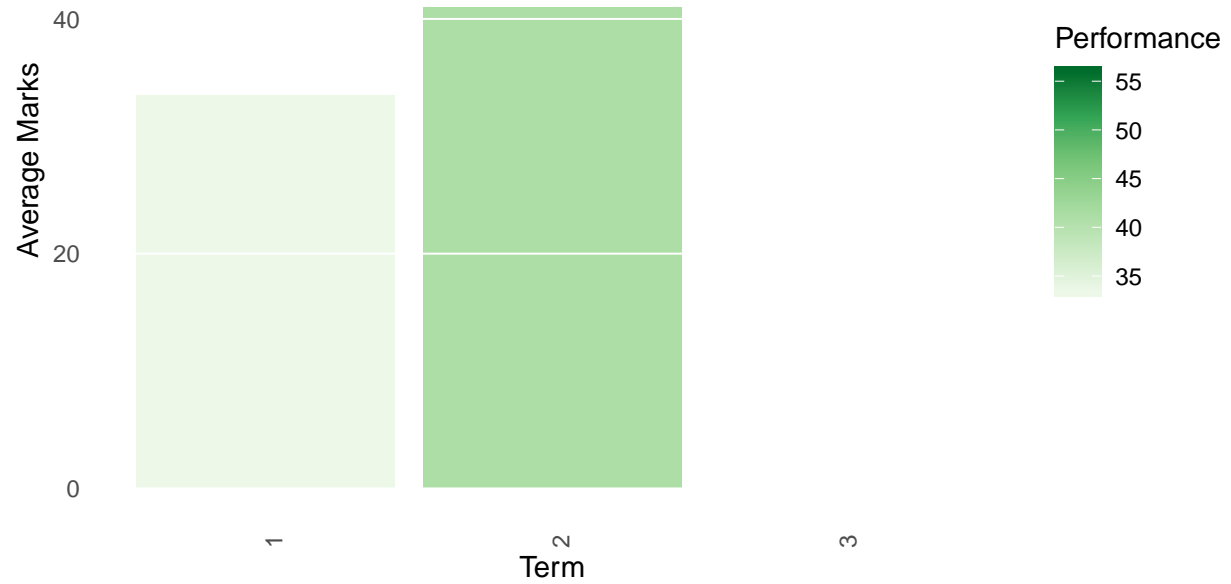
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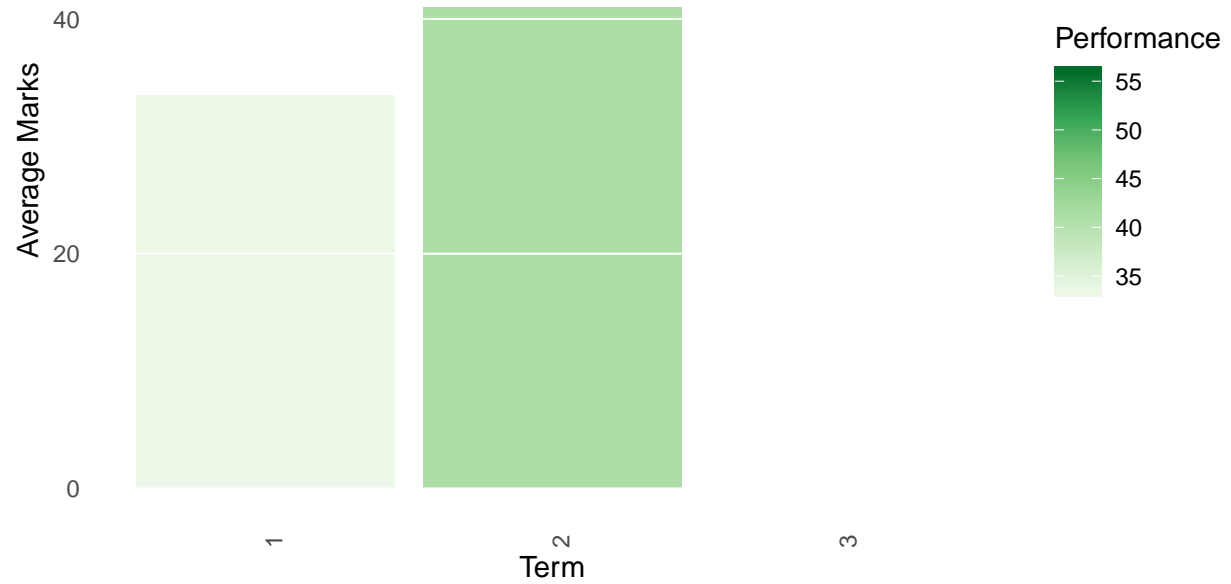
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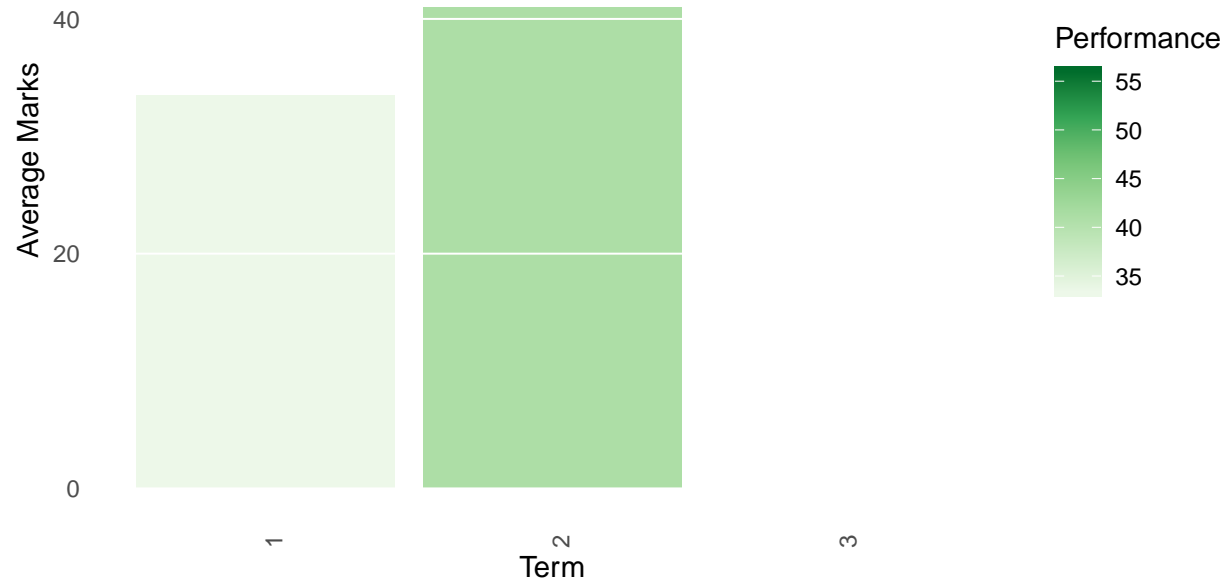
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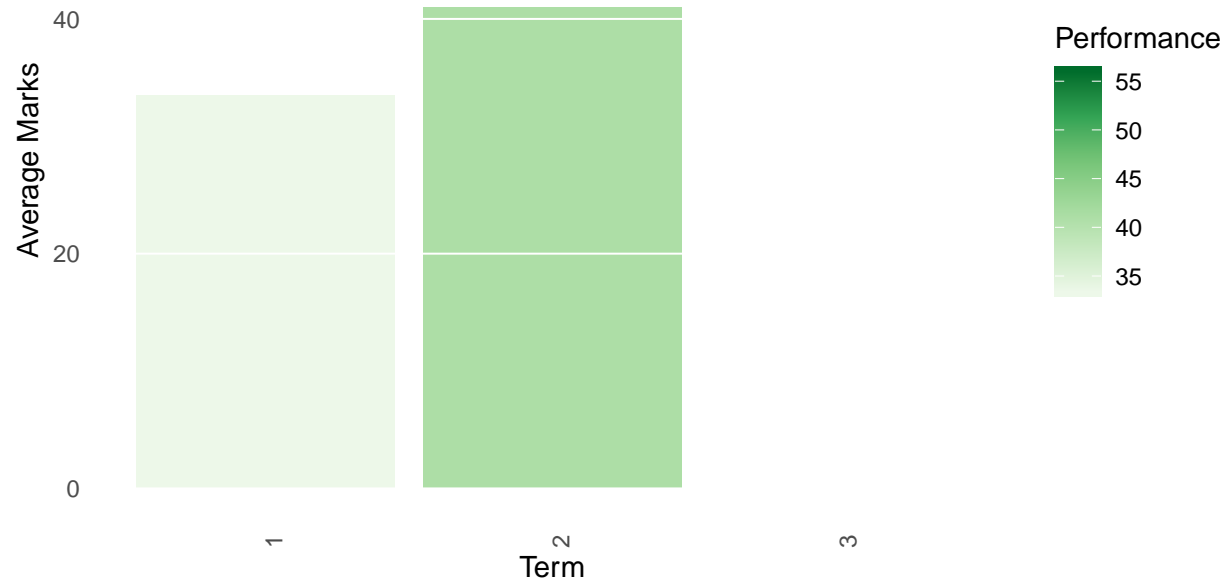
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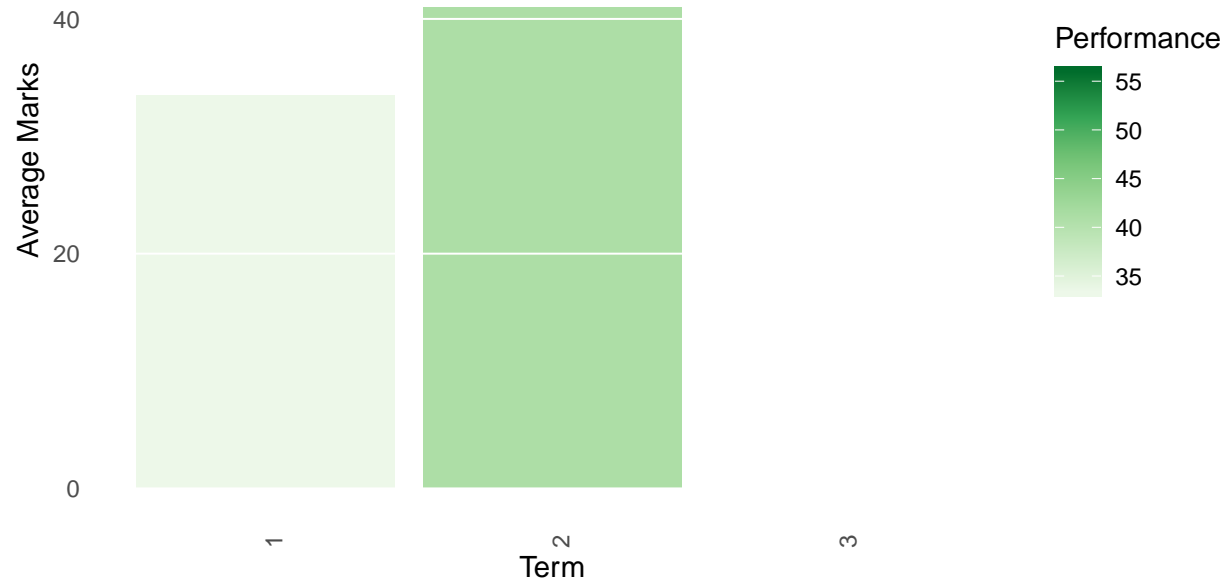
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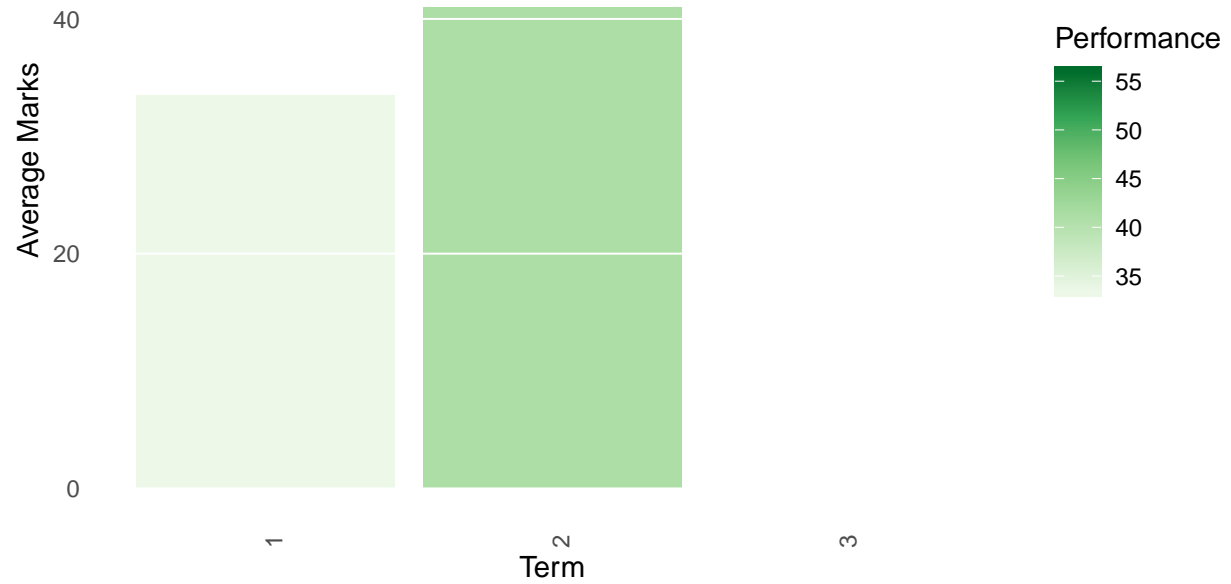
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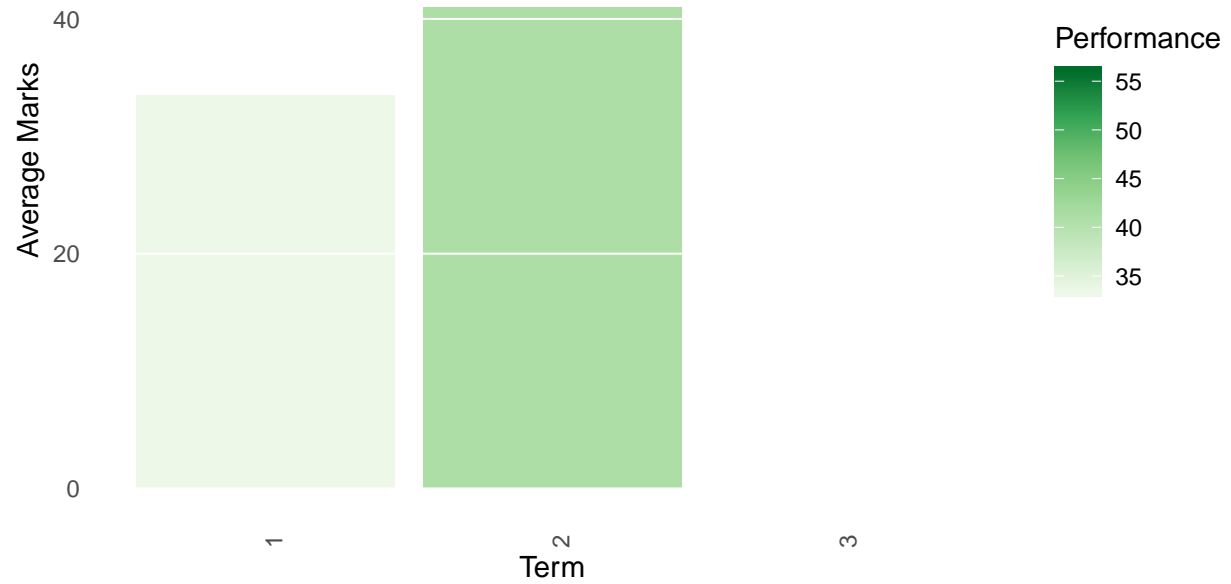
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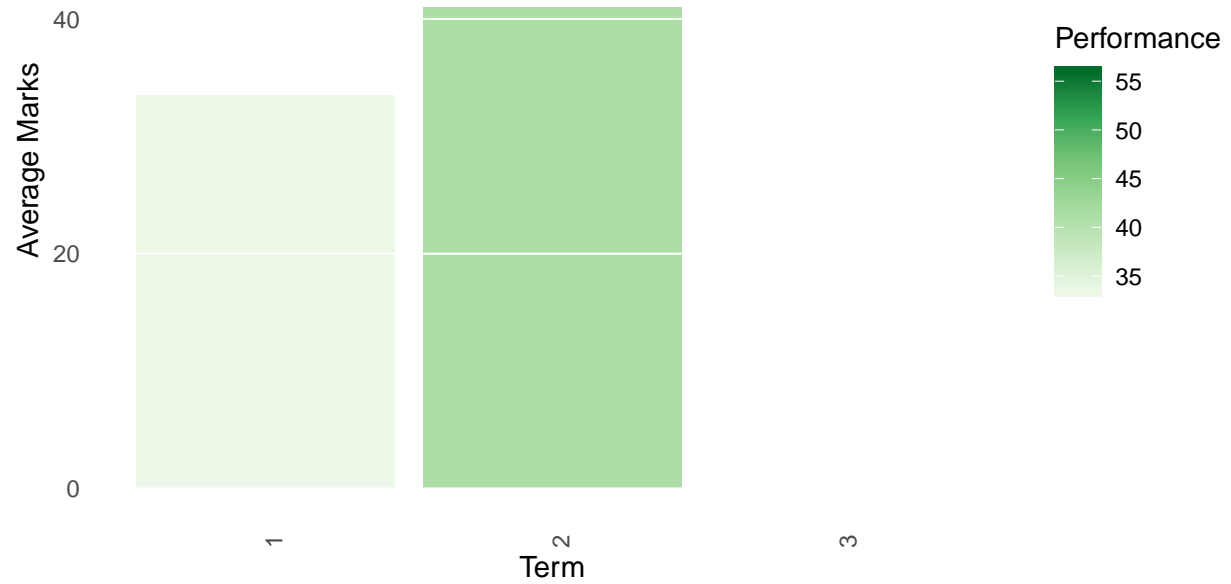
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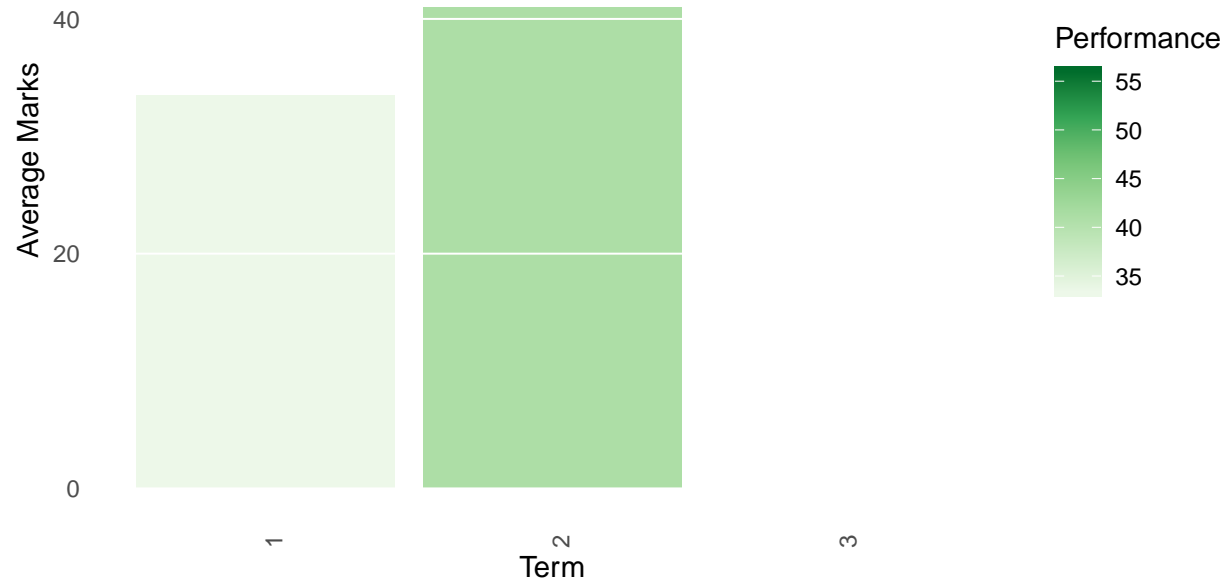
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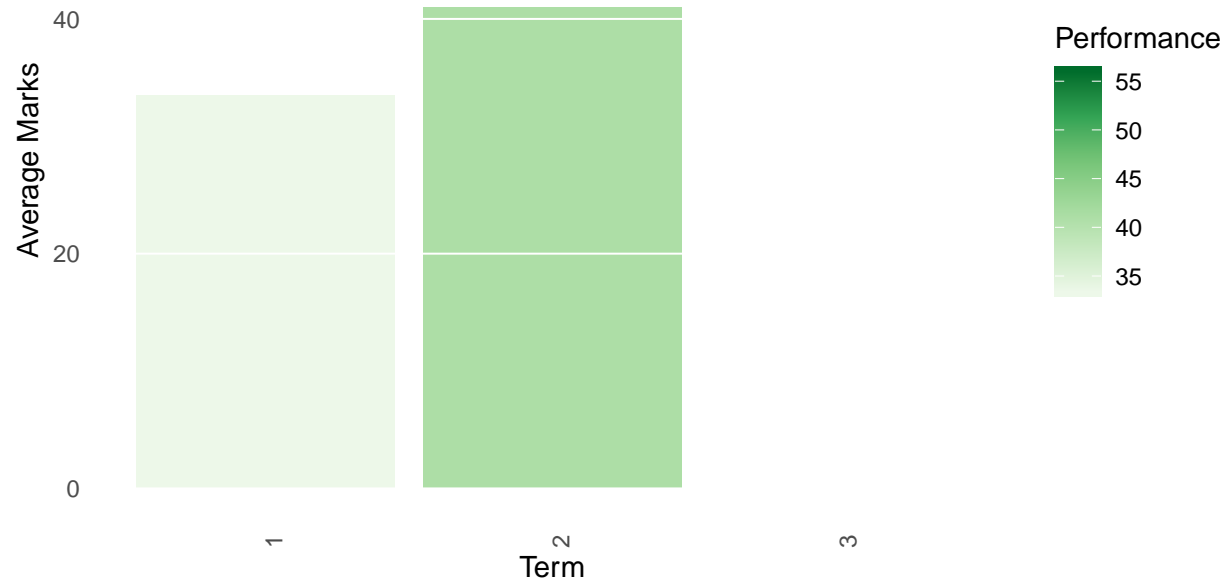
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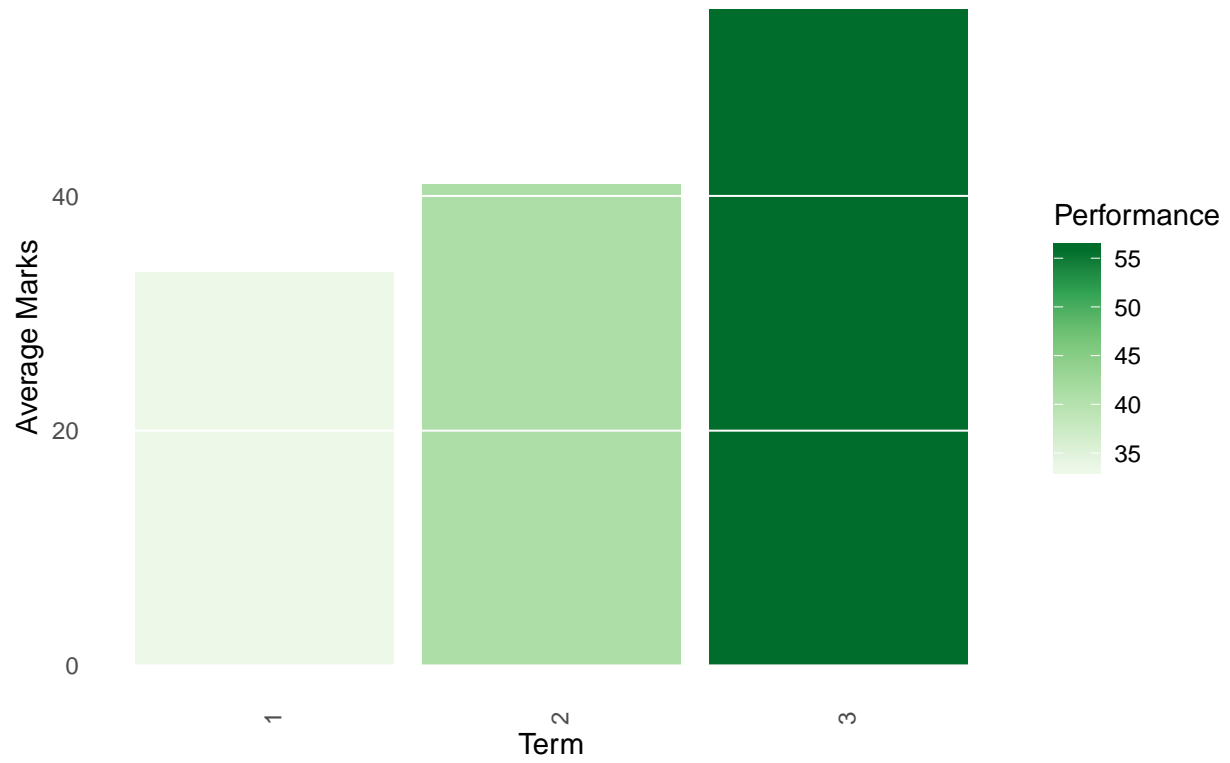
Overall Marks over the Year for Treatment Group



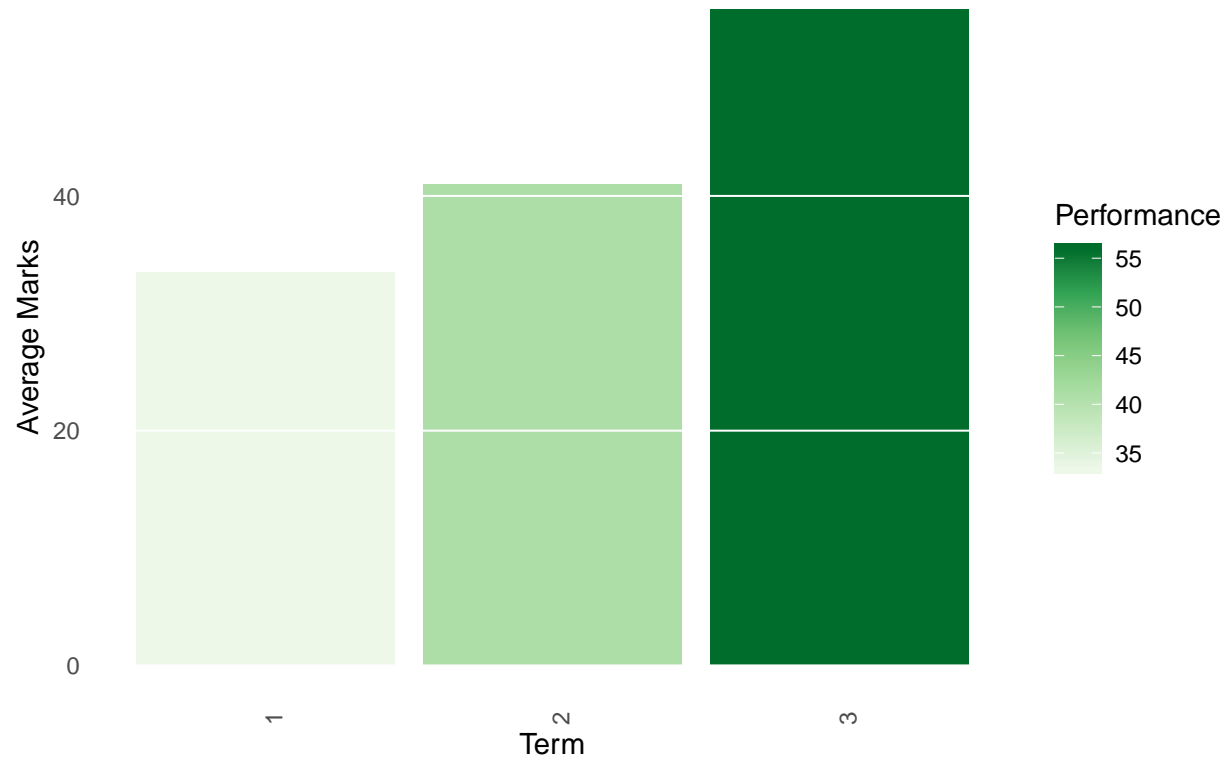
Overall Marks over the Year for Treatment Group



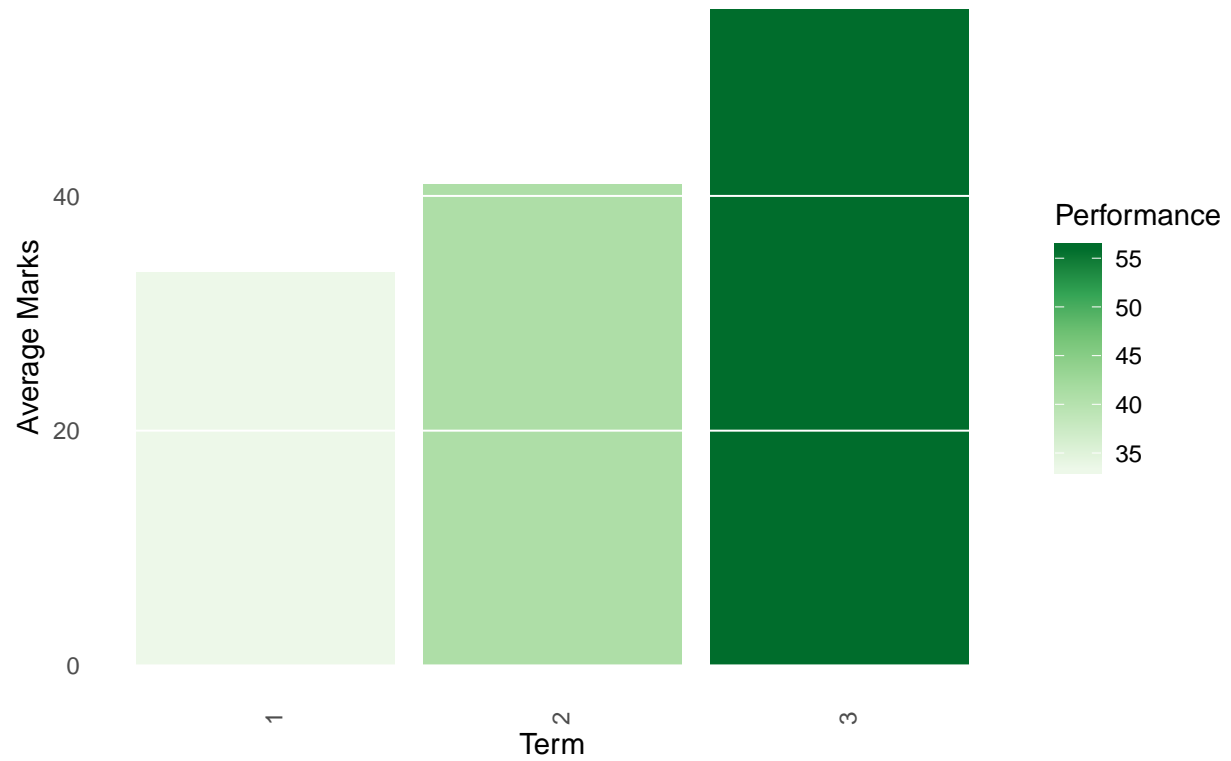
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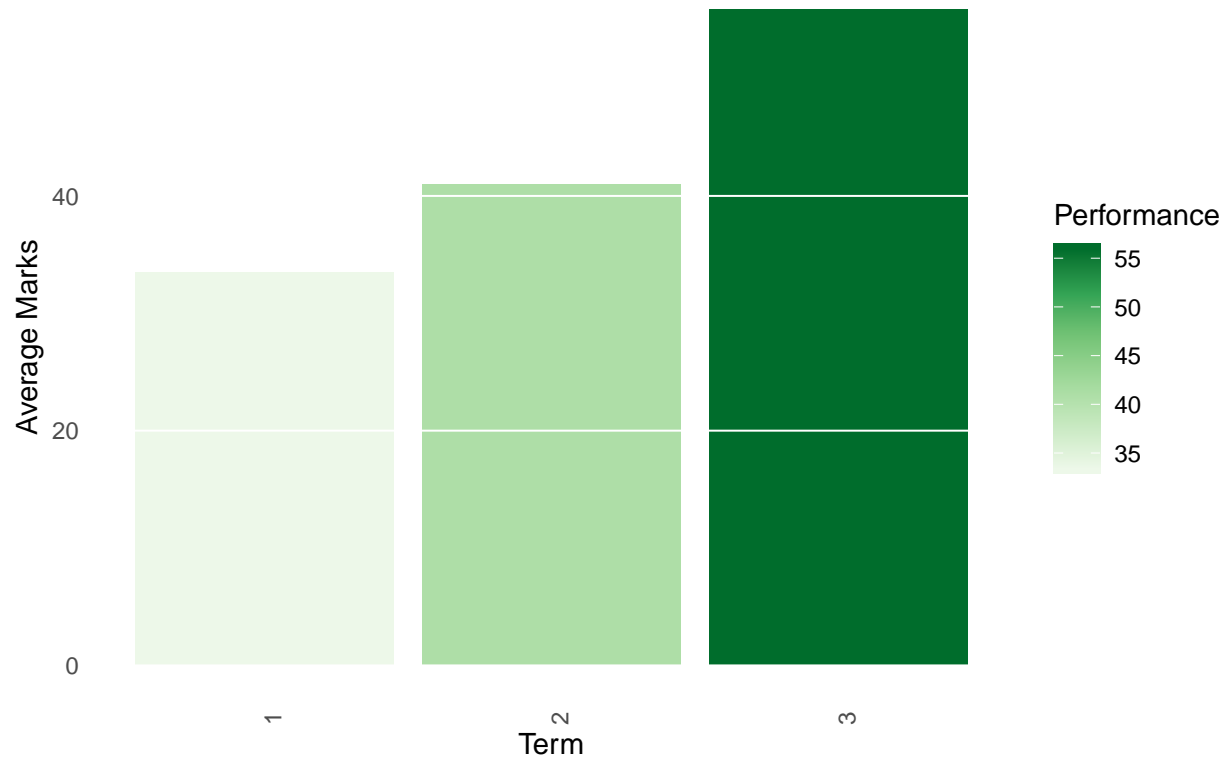
Overall Marks over the Year for Treatment Group



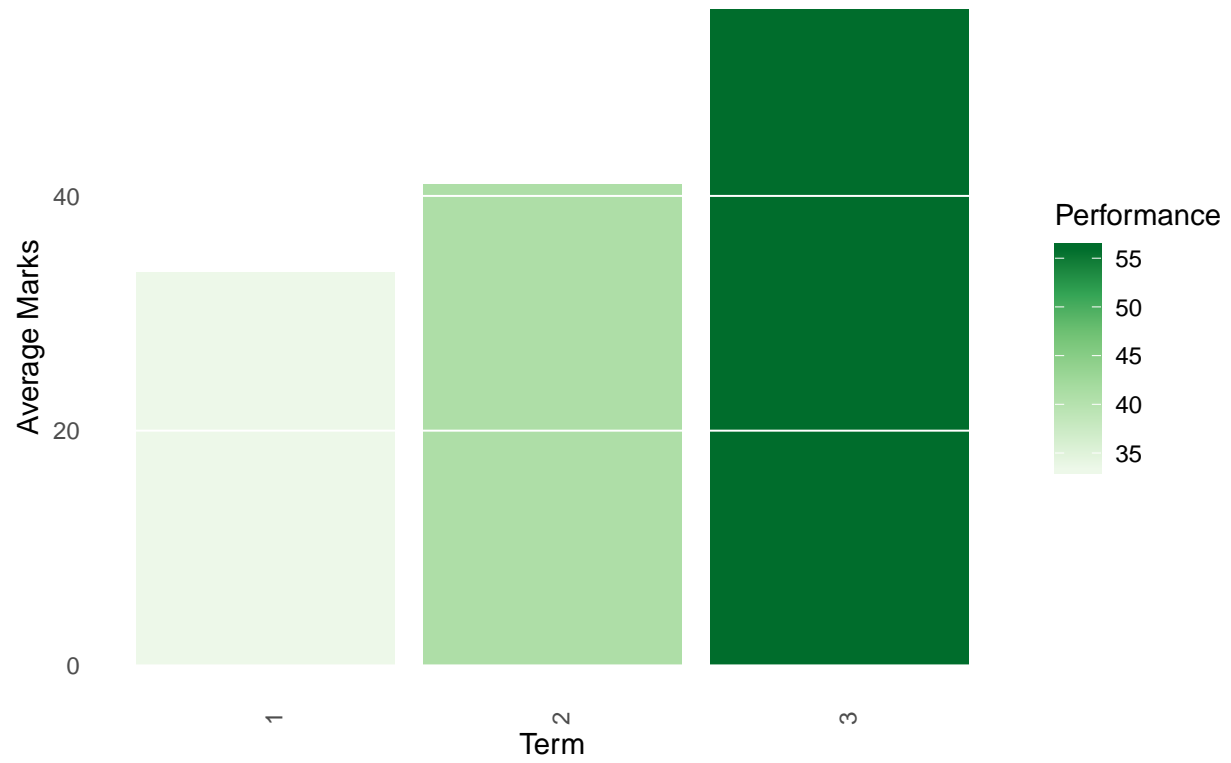
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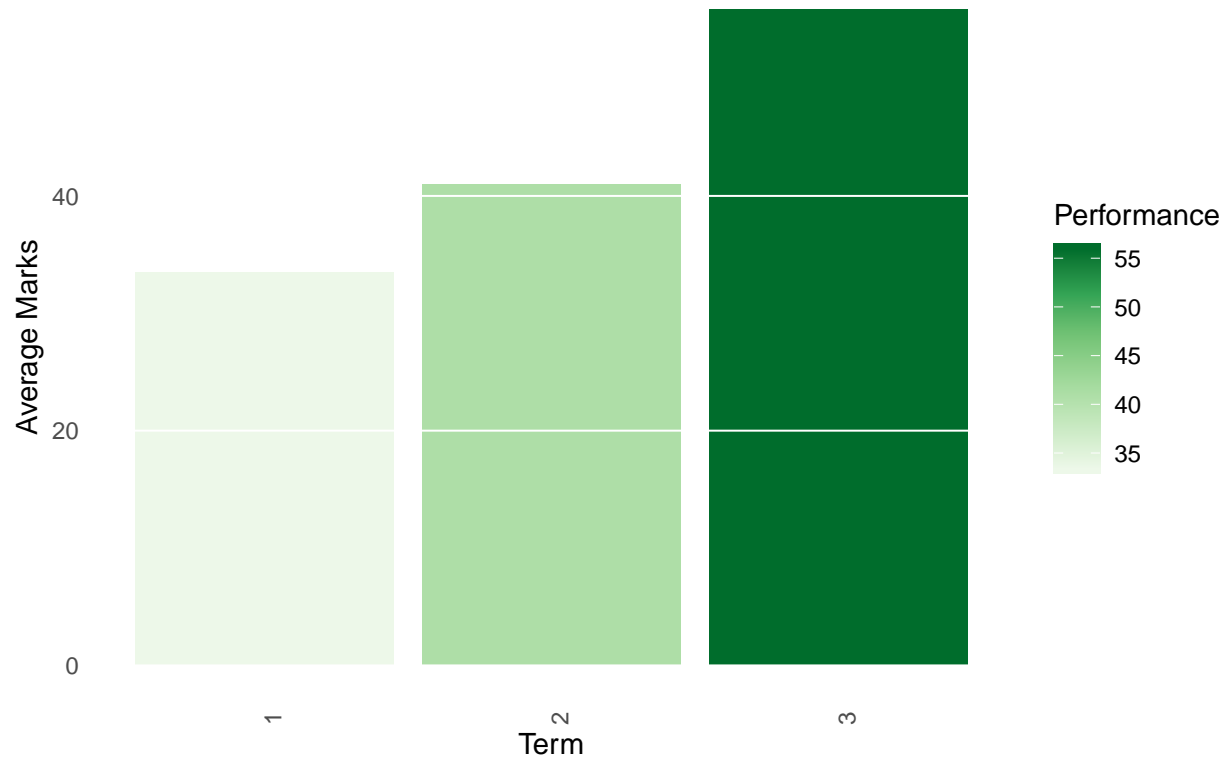
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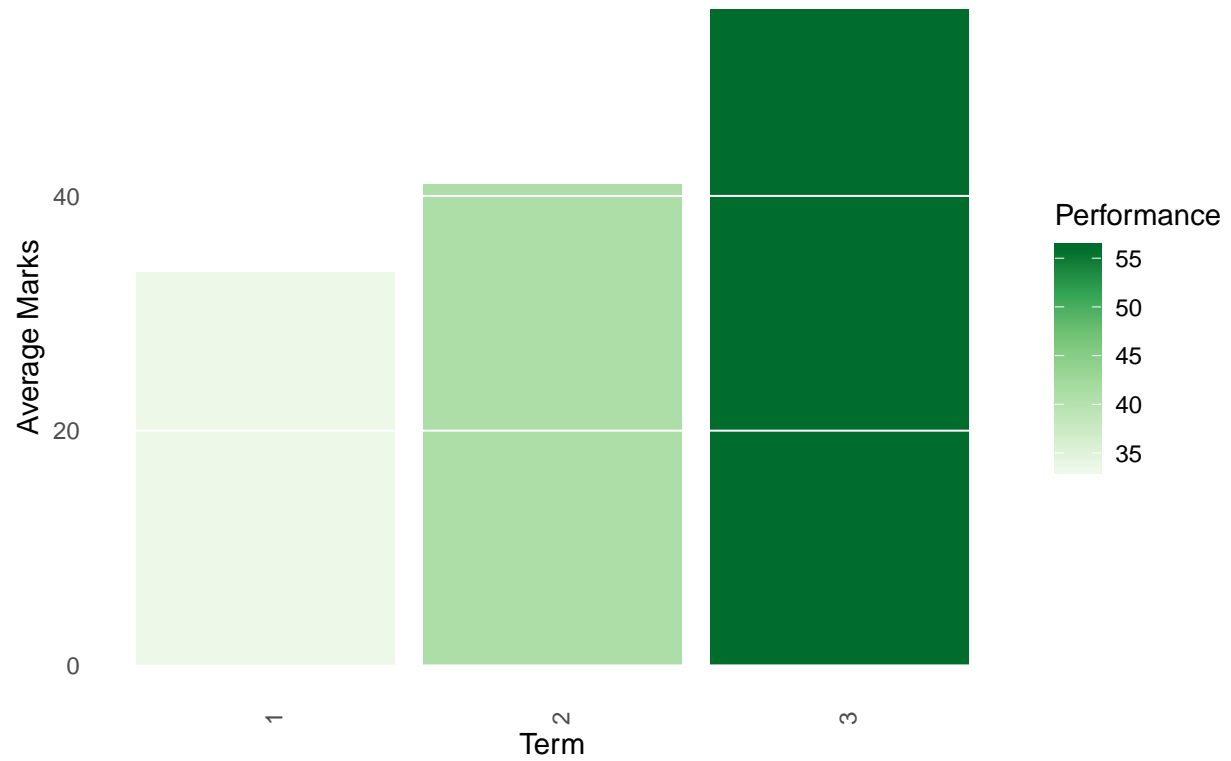
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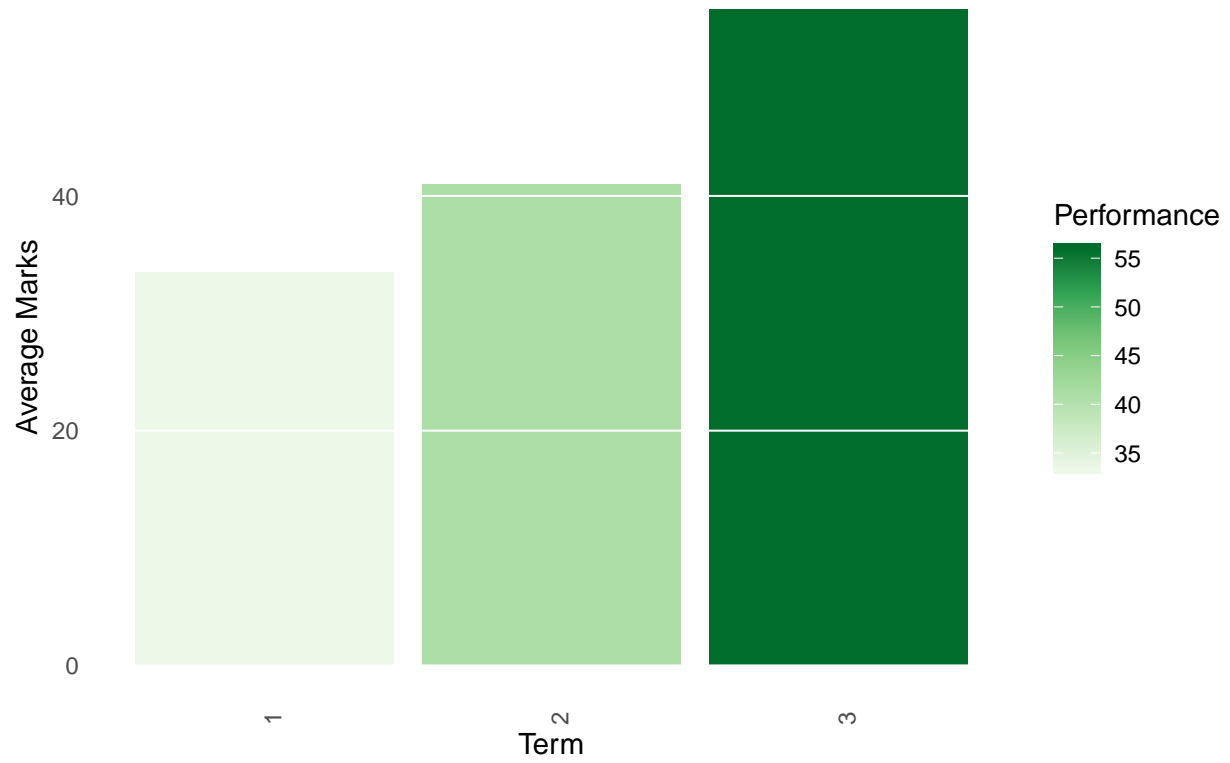
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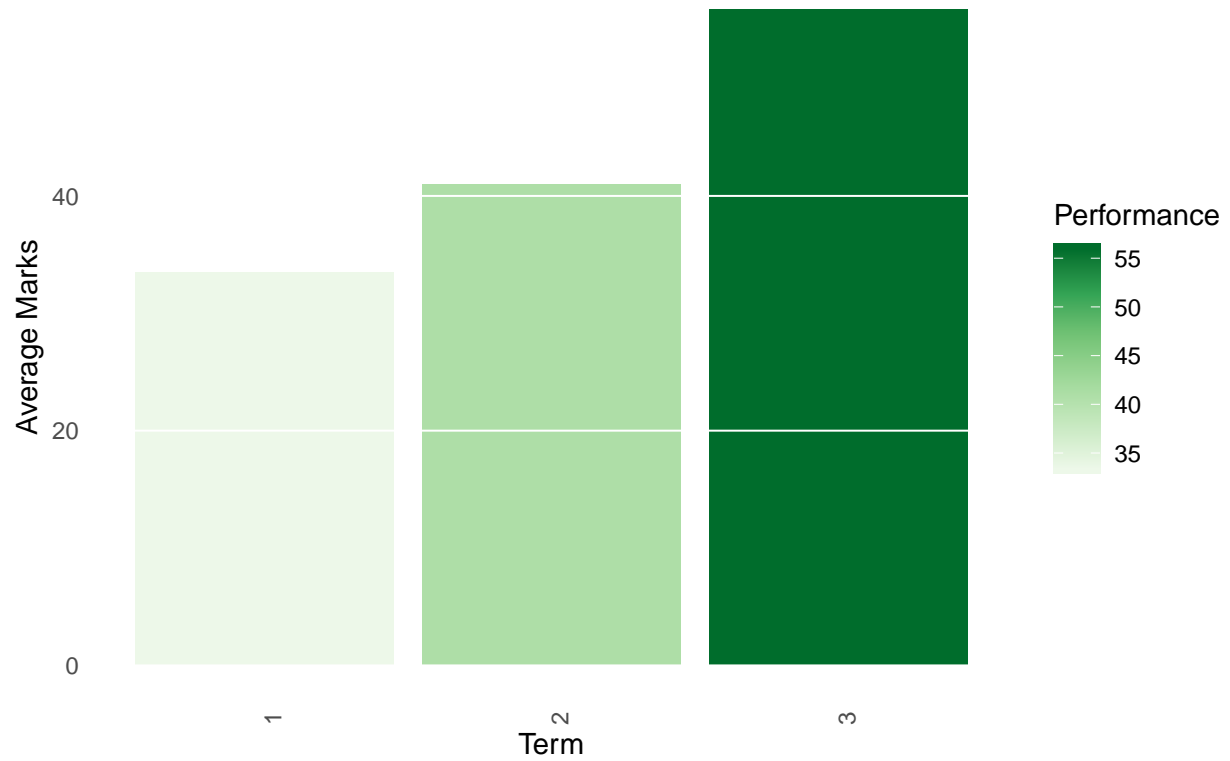
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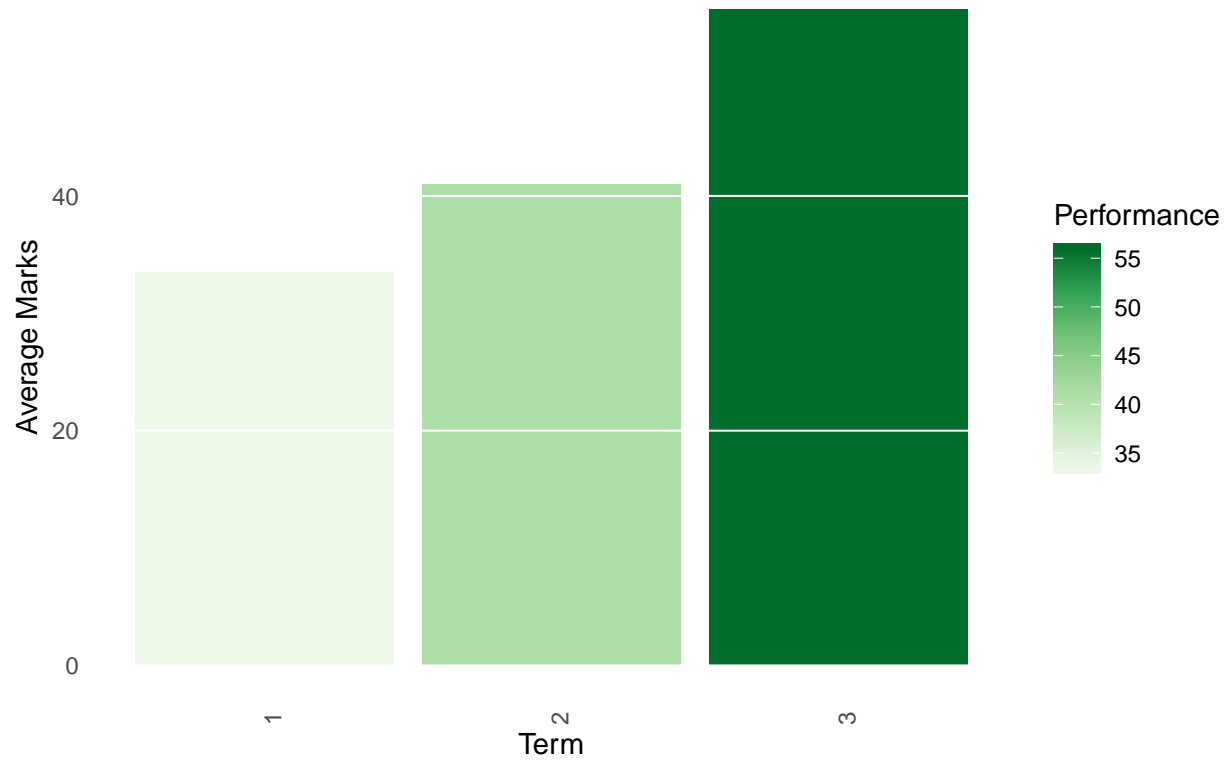
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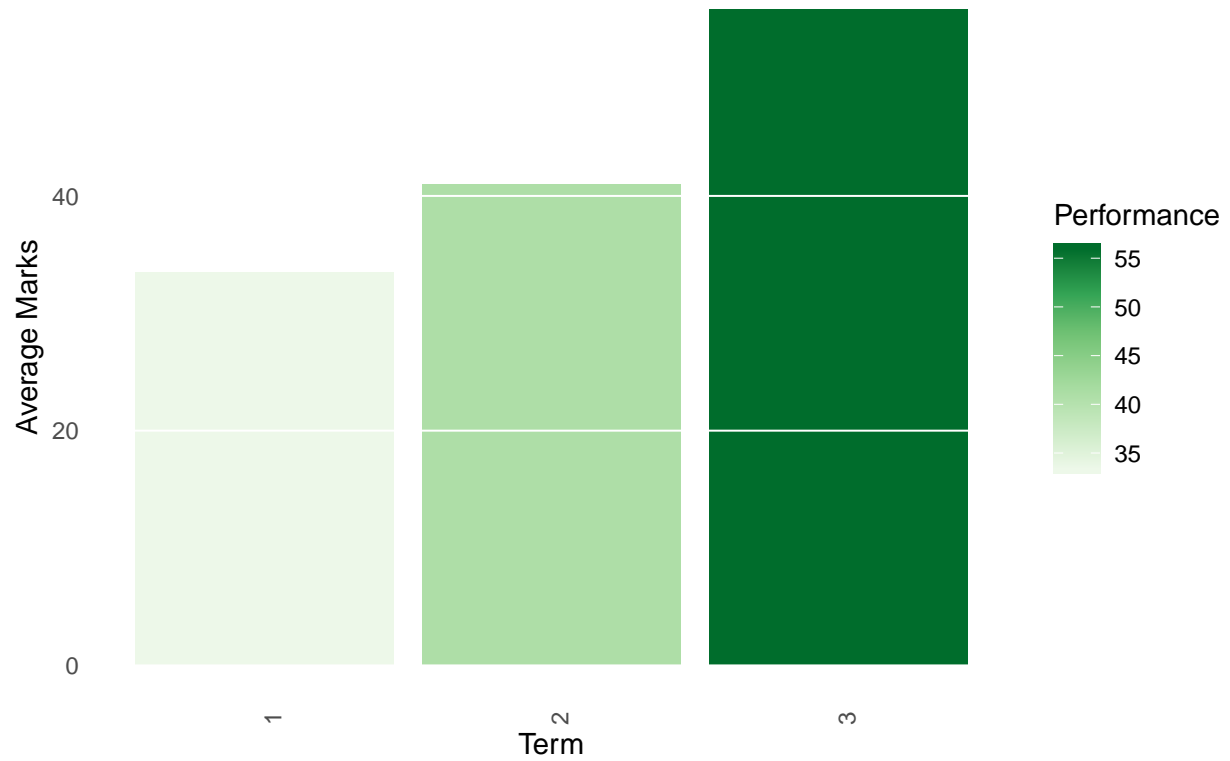
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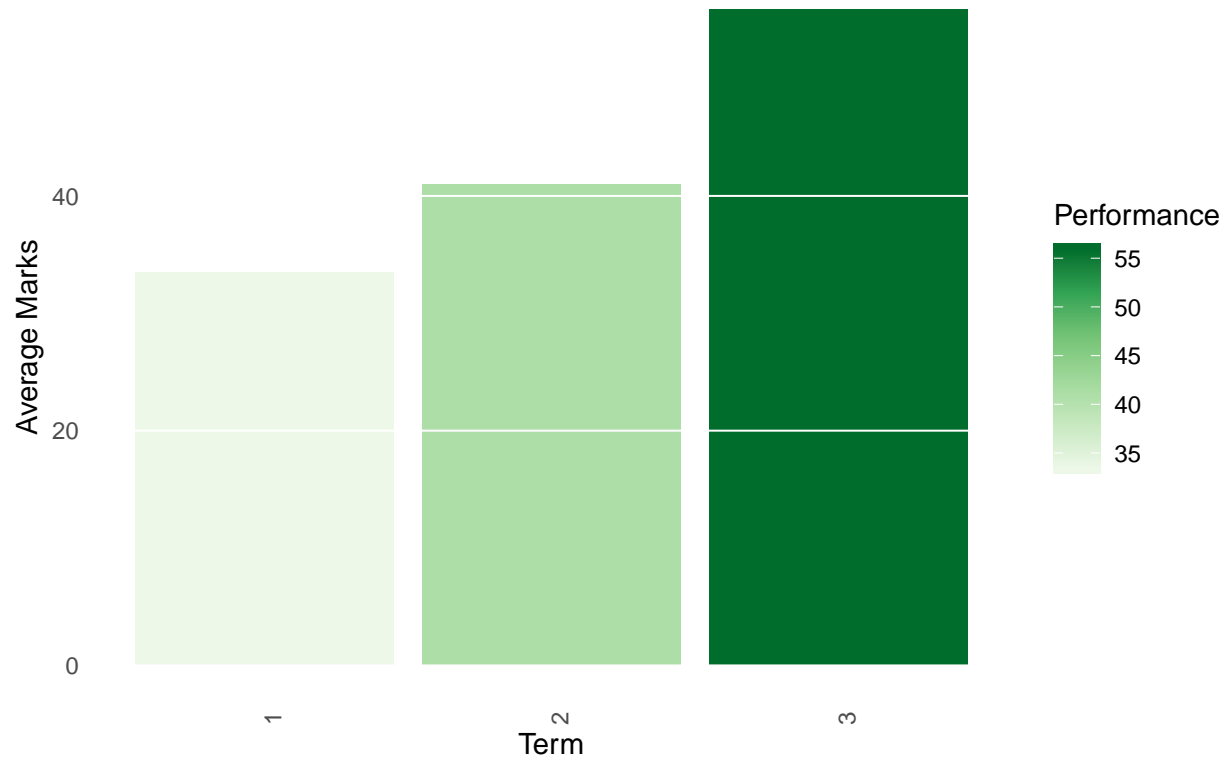
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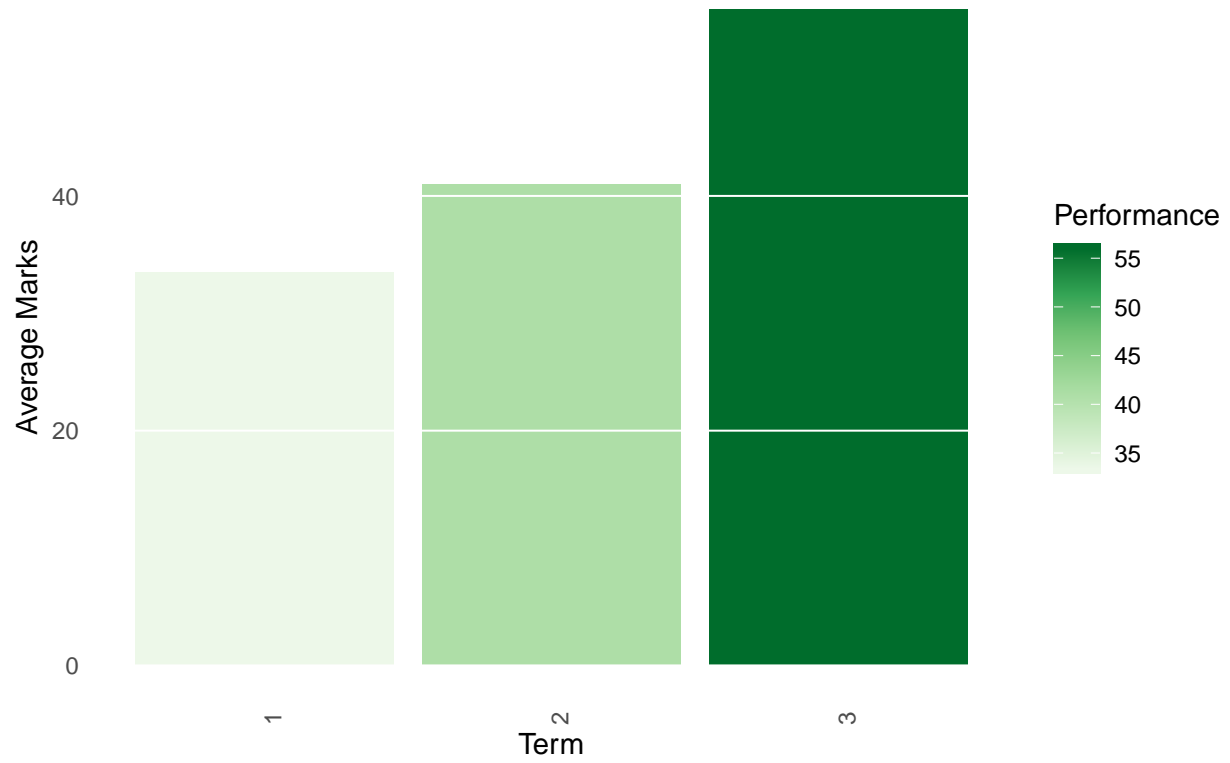
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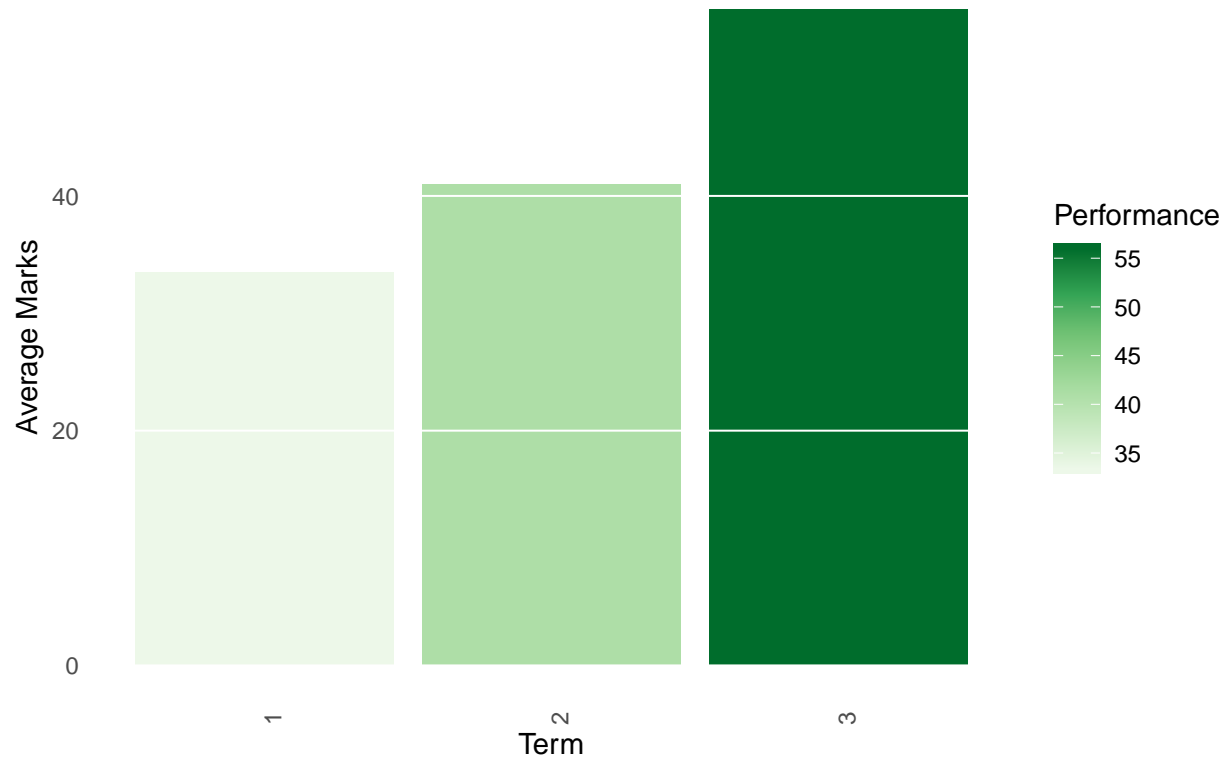
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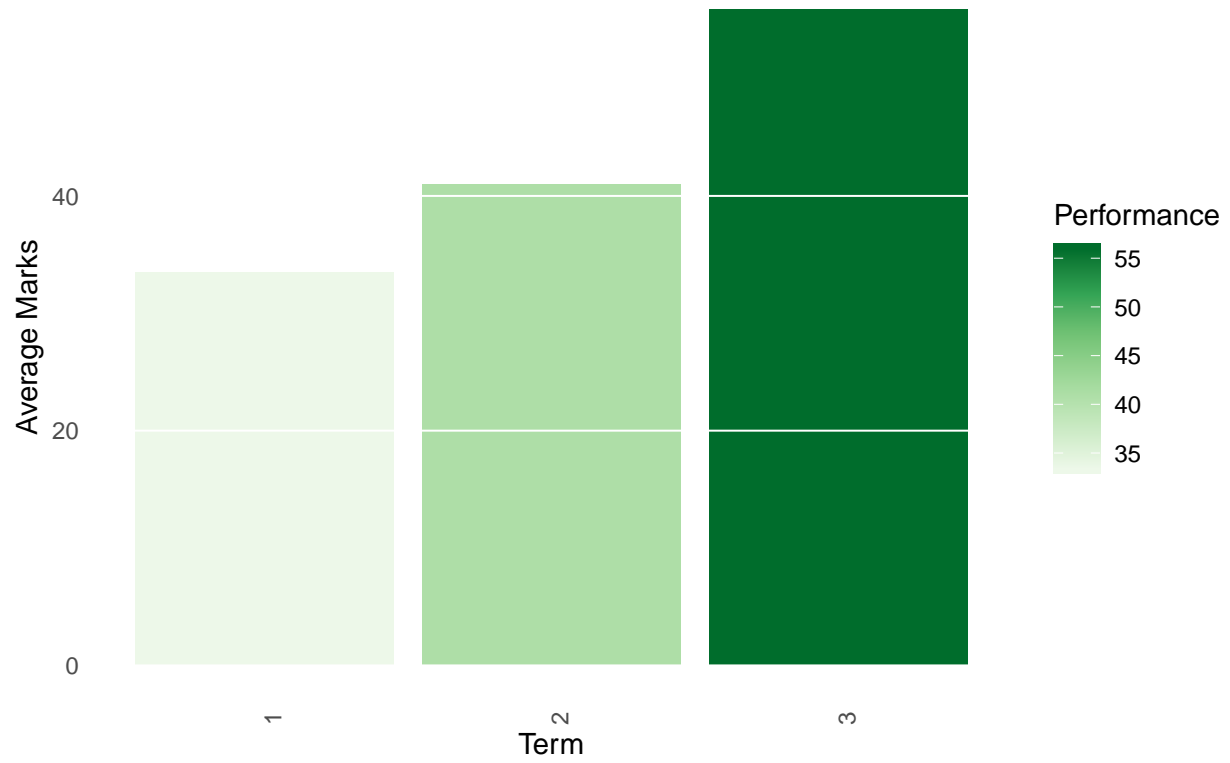
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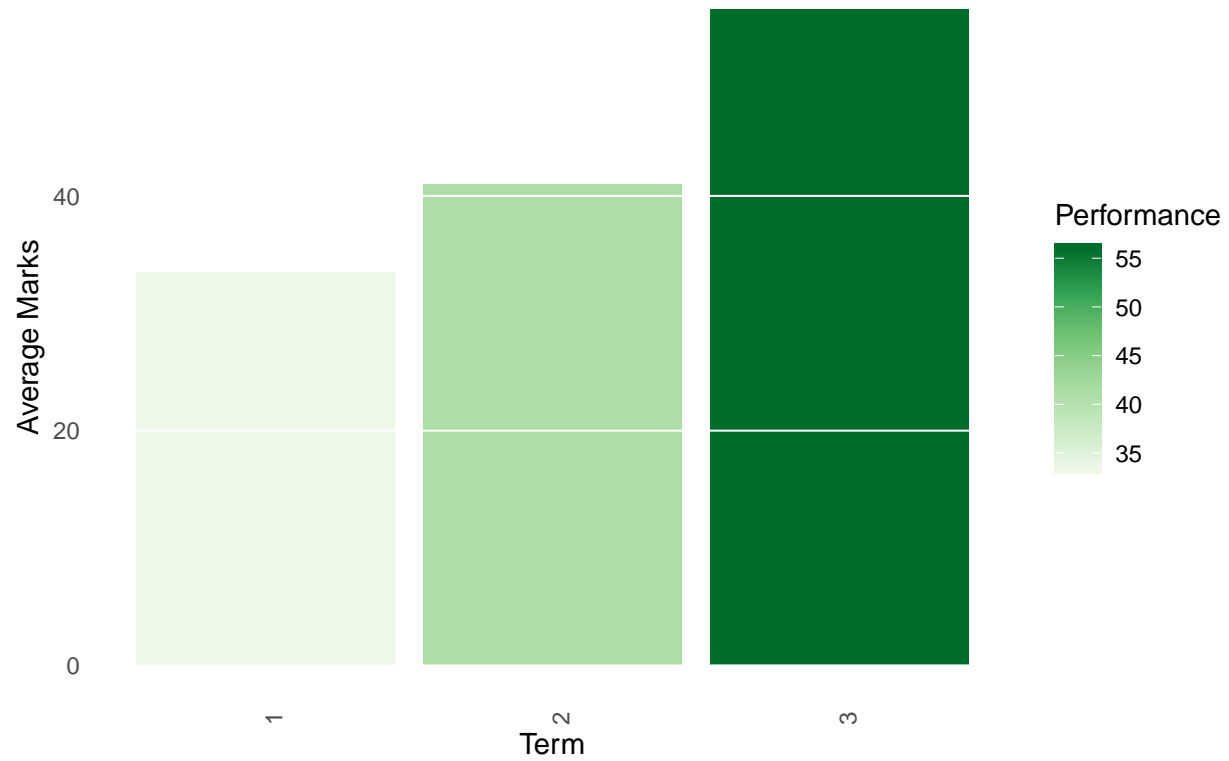
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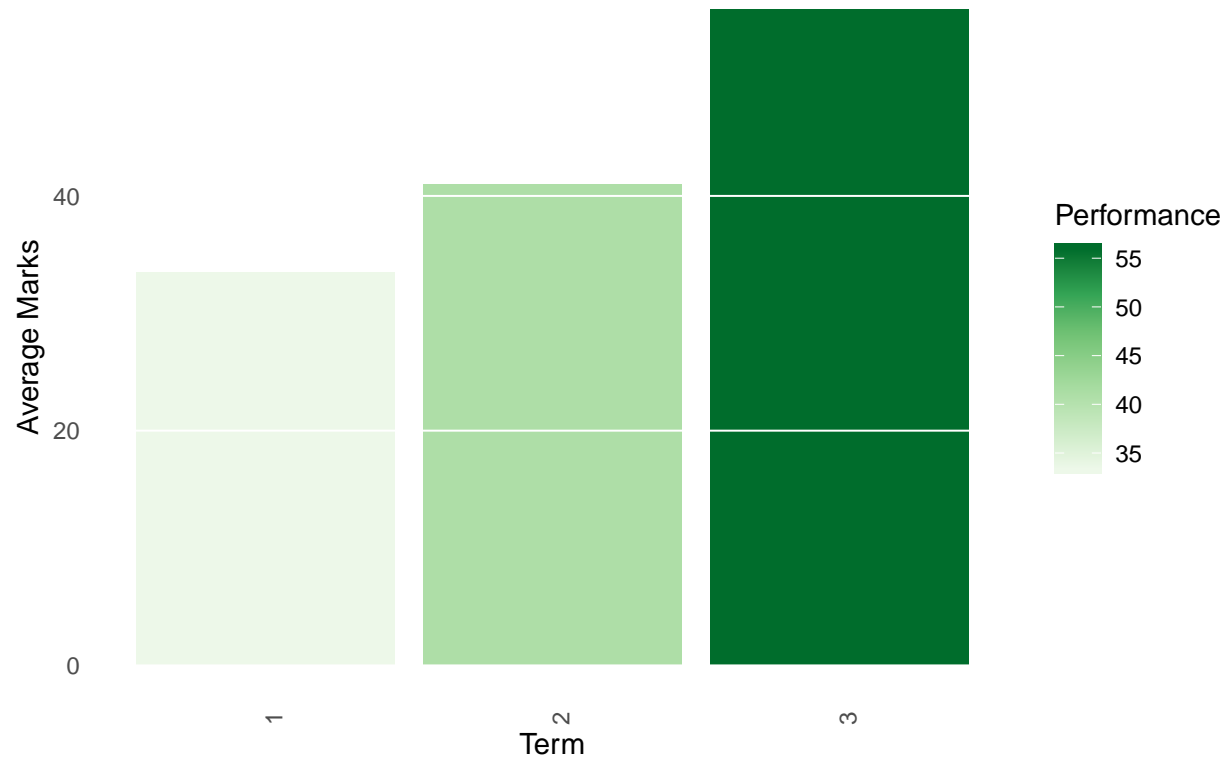
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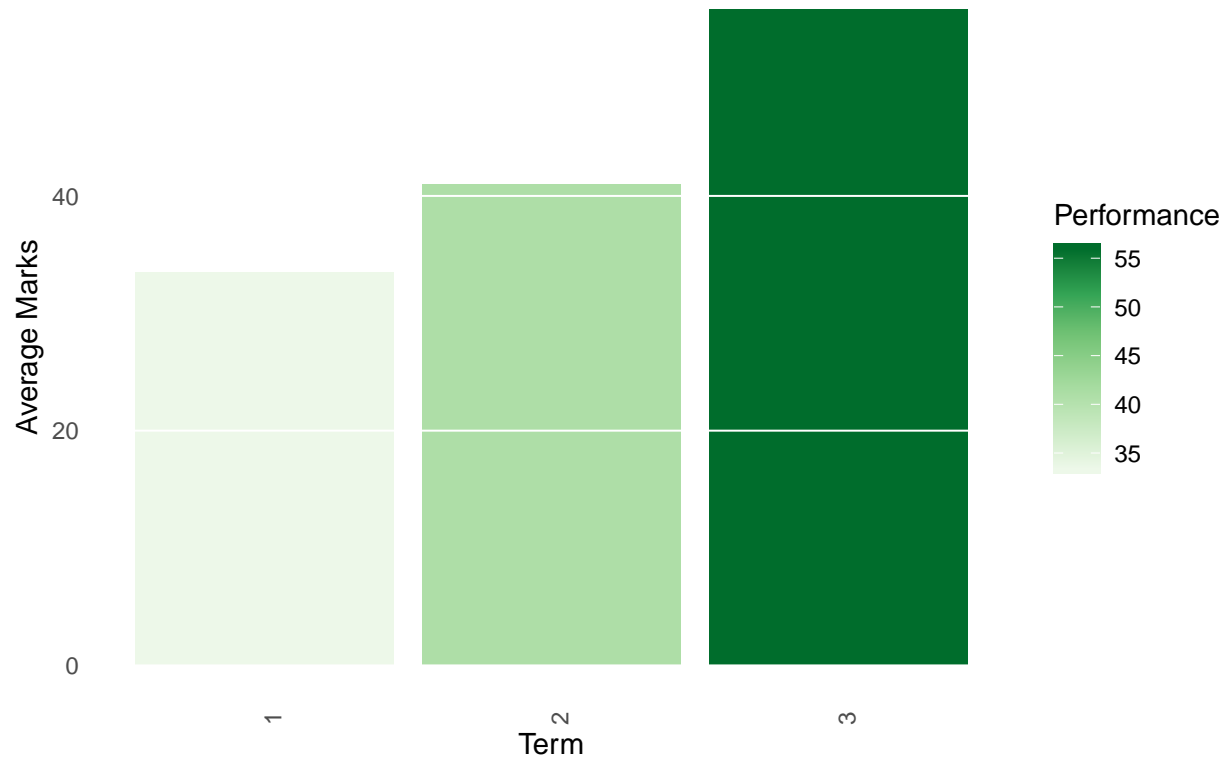
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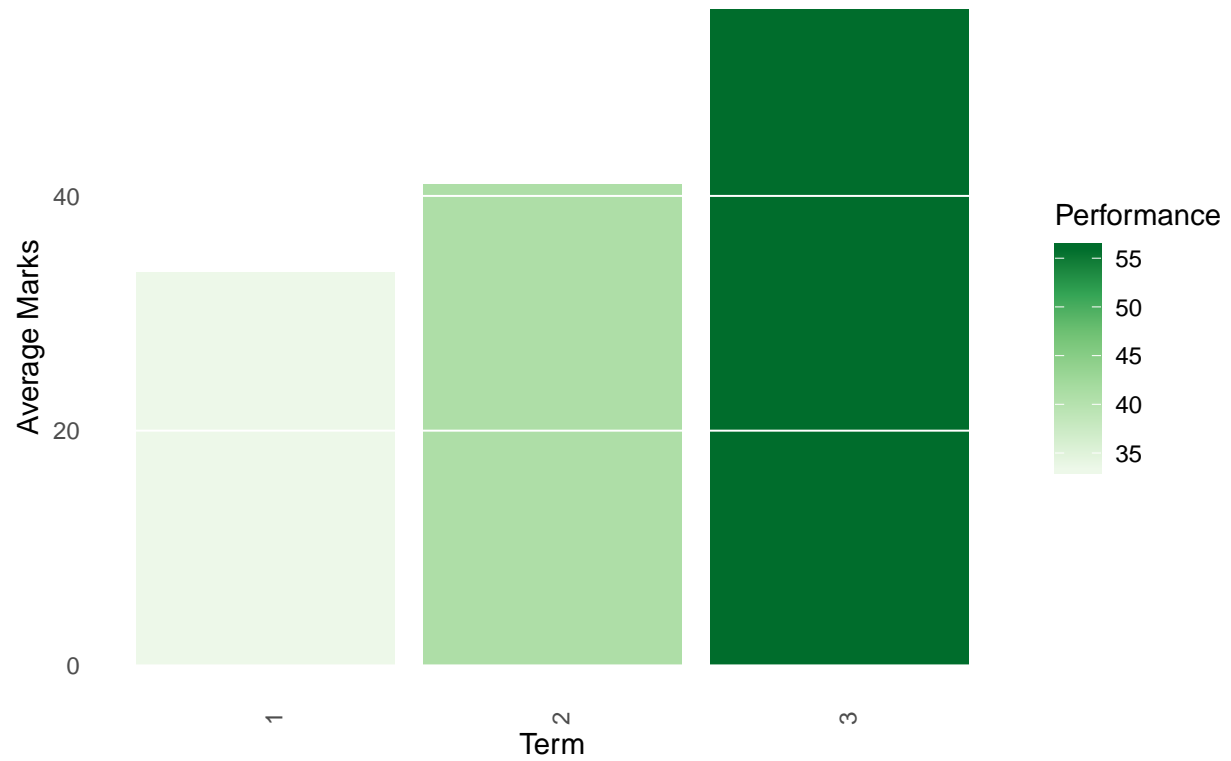
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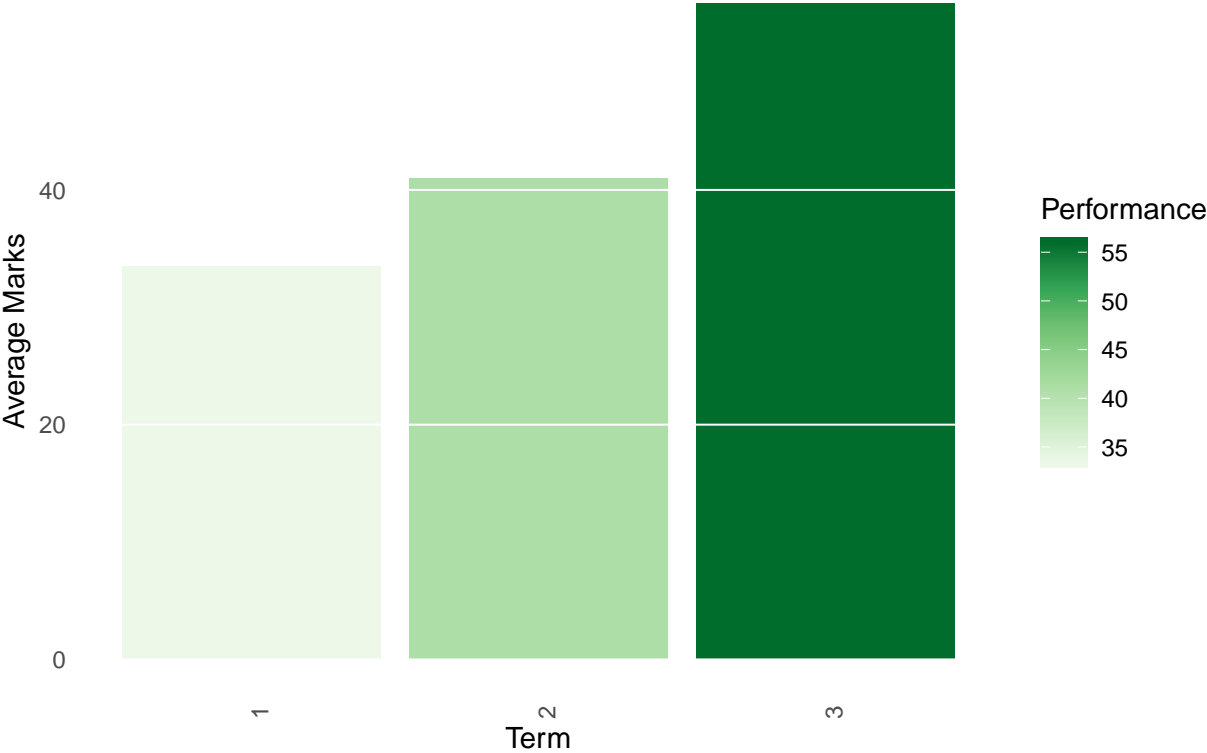
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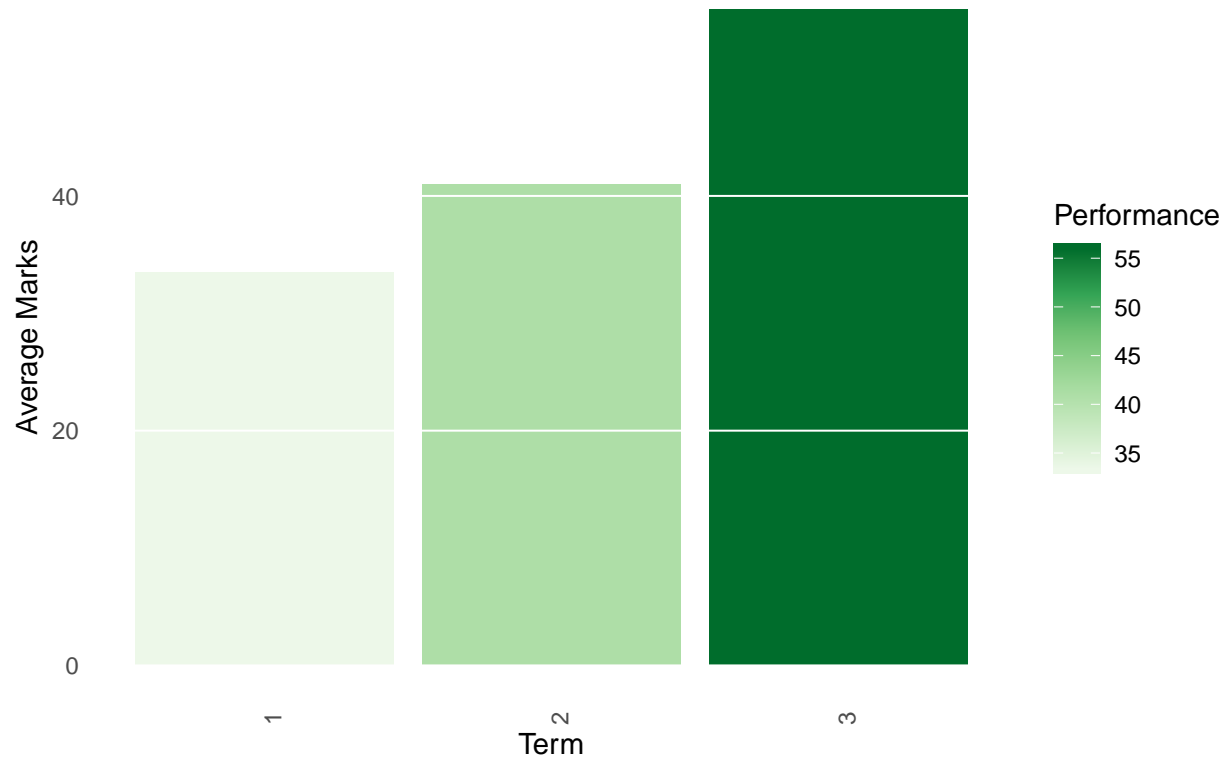
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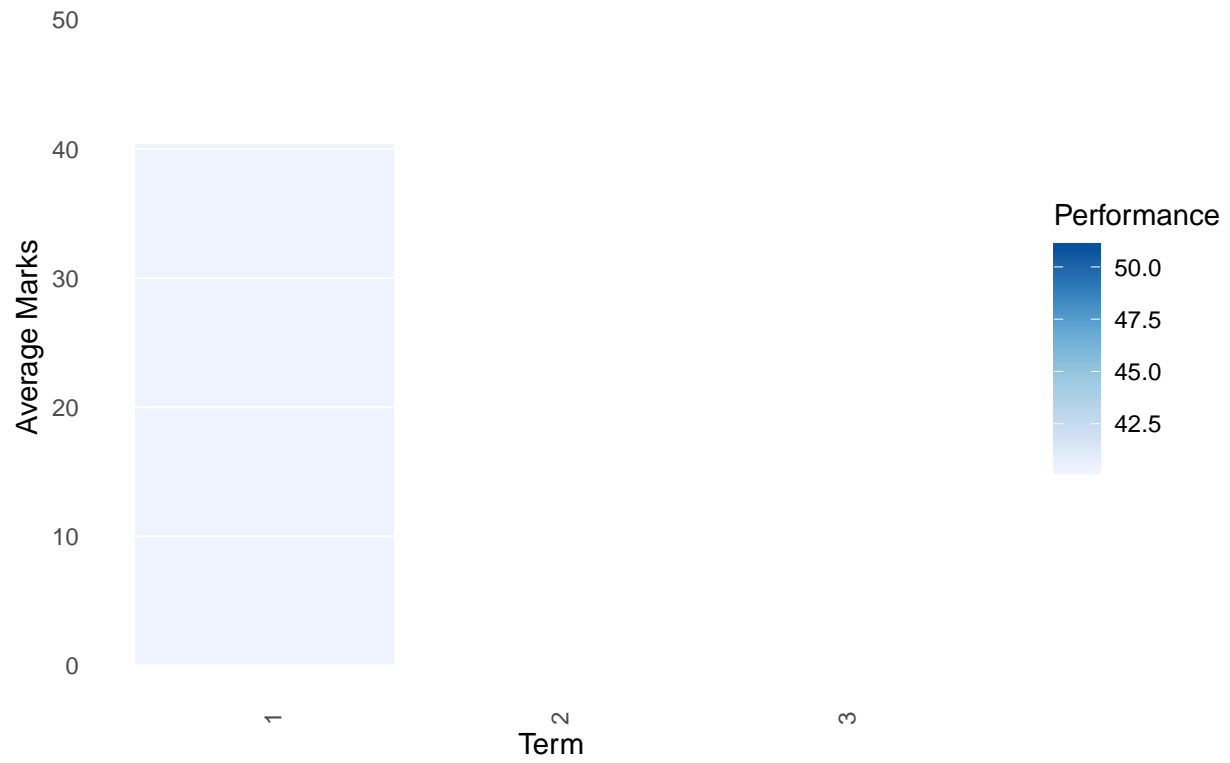
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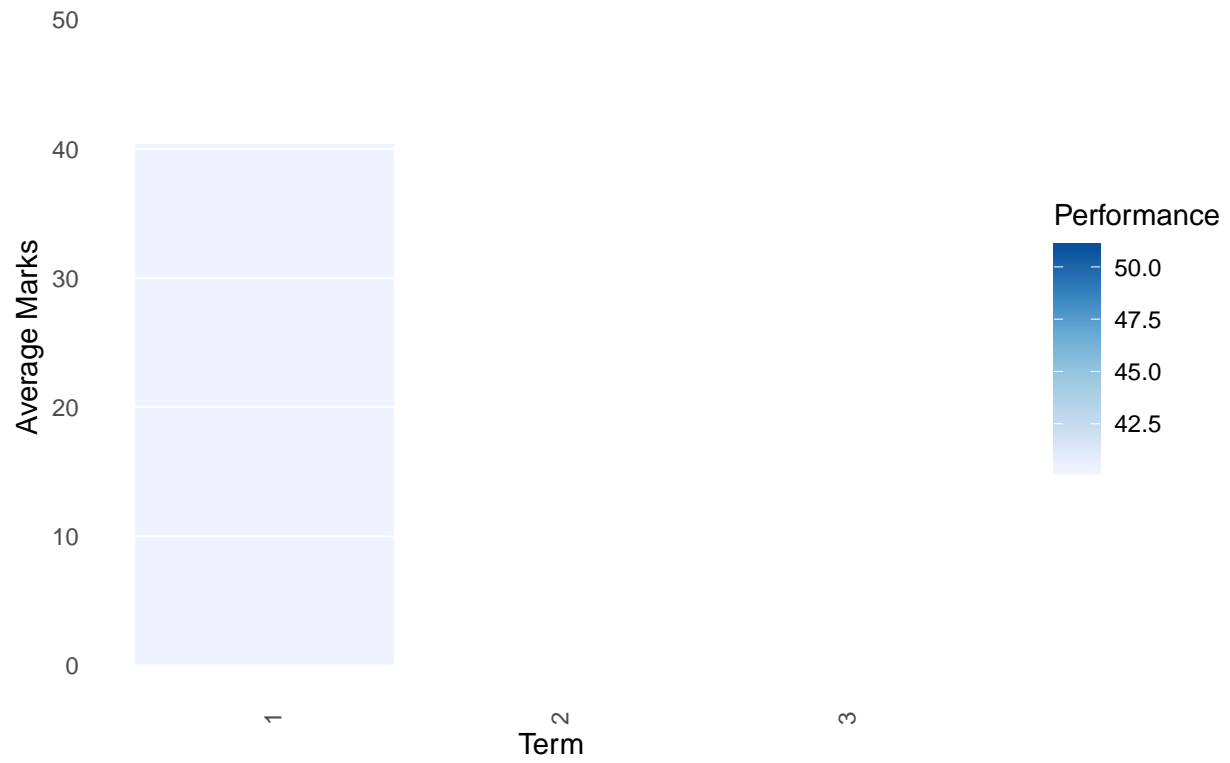
```
p <- ggplot(average_marks_treatment, aes(as.factor(term), Performance, fill = Performance)) +
  geom_col() + scale_fill_distiller(palette = "Blues", direction = 1) +
  ggtitle("Overall Marks over the Year for Control Group") + labs(x="Term", y="Average Marks") +
  theme_minimal() +
  theme(
    panel.grid = element_blank(),
    panel.grid.major.y = element_line(color = "white"),
    panel.ontop = TRUE, plot.title = element_text(hjust = 0.5),
    axis.text.x = element_text(angle=90))

p + transition_states(term, wrap = FALSE) + shadow_mark()
```

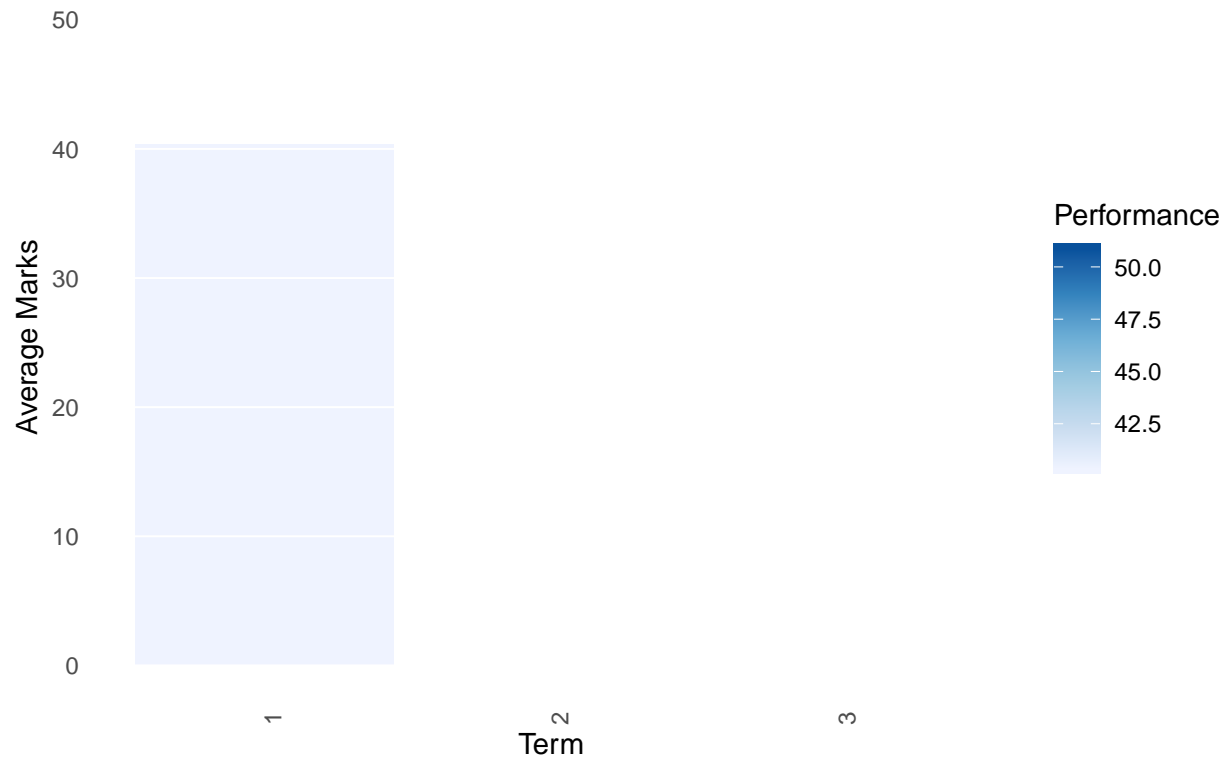
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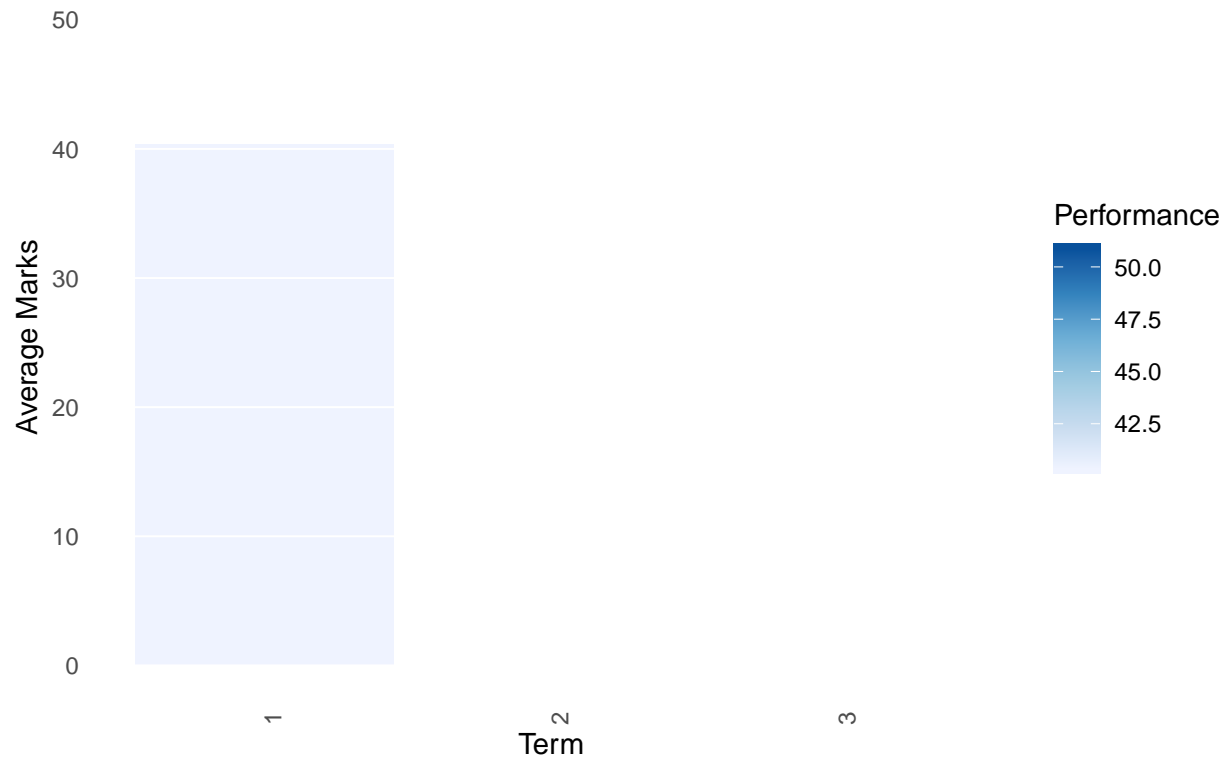
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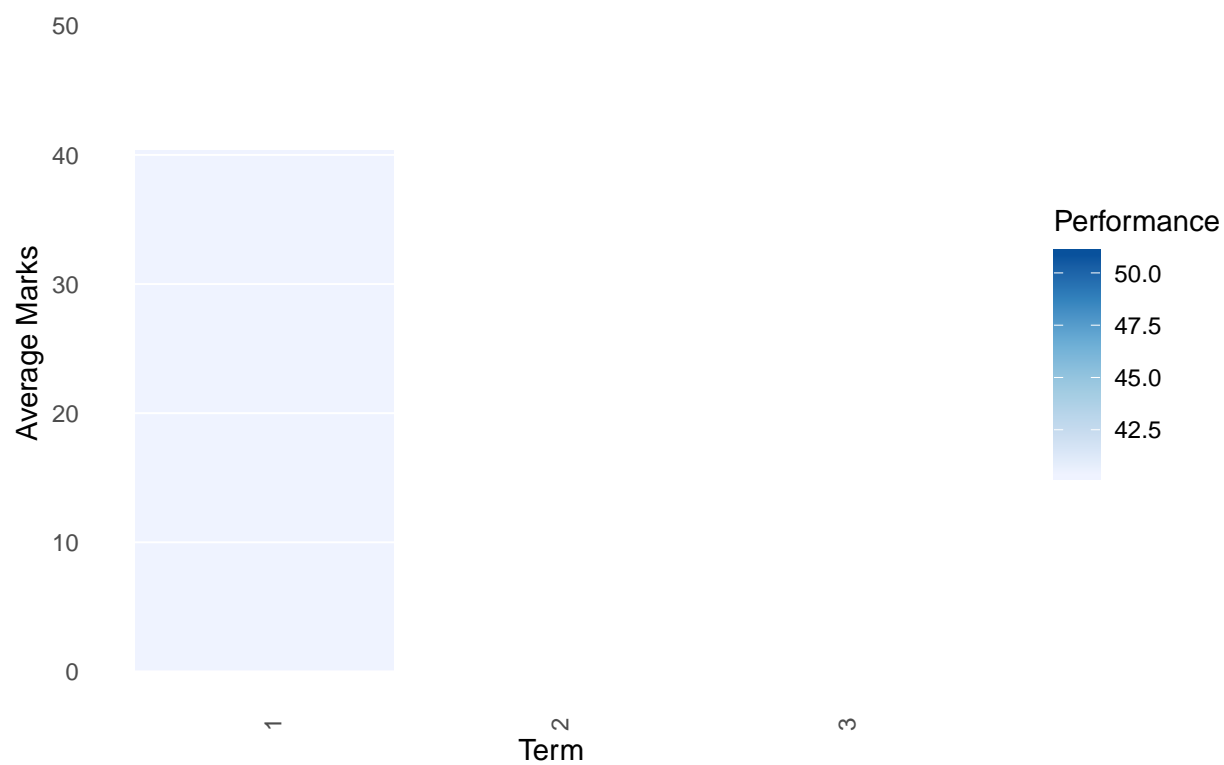
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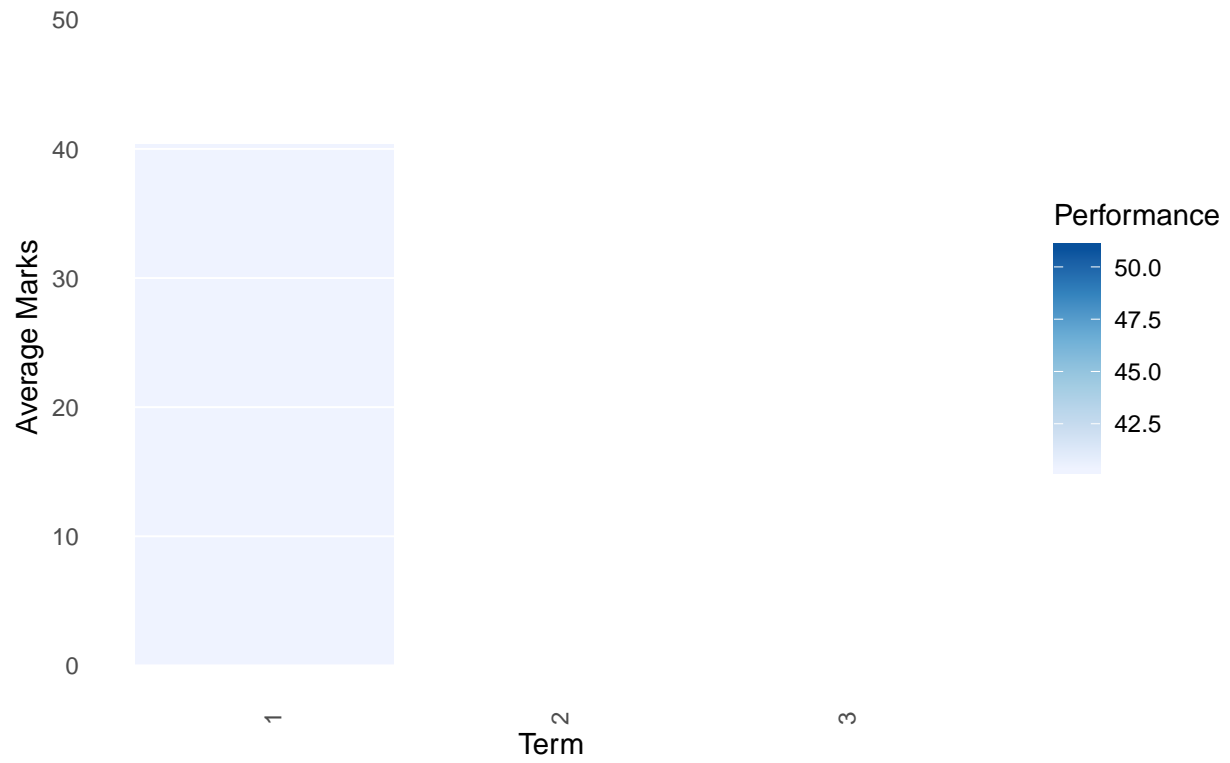
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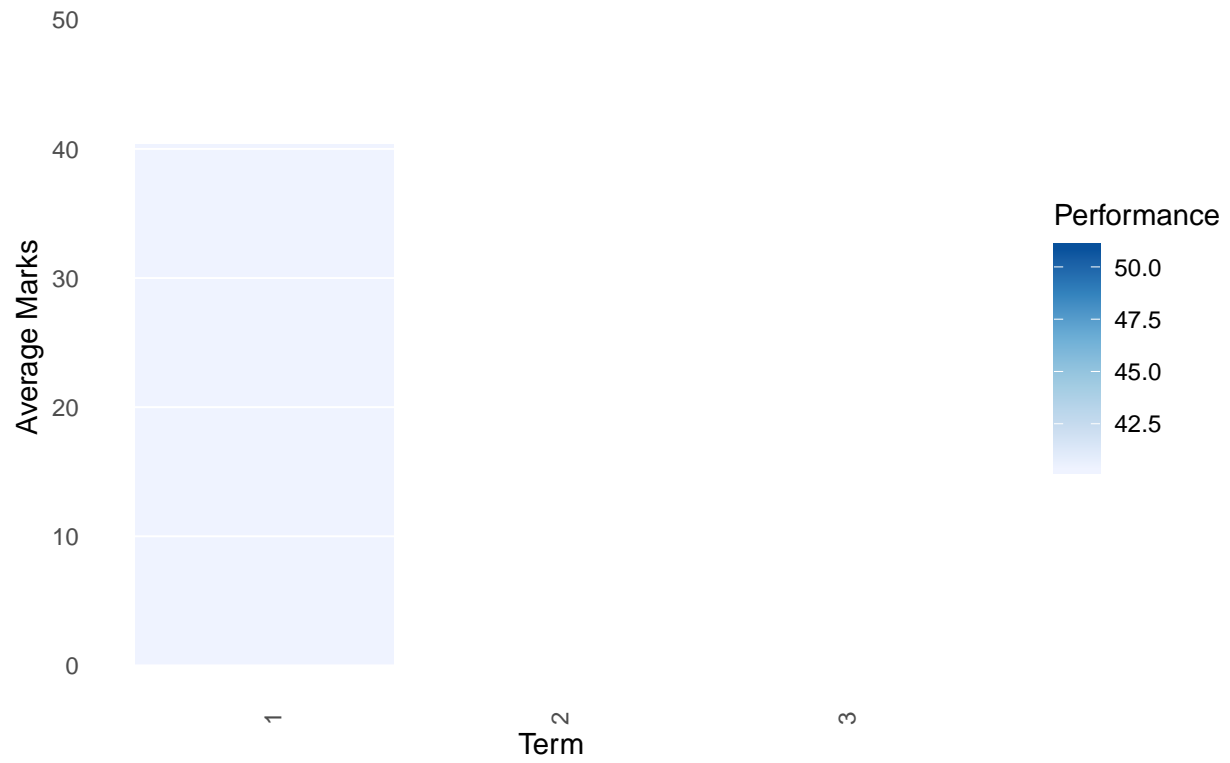
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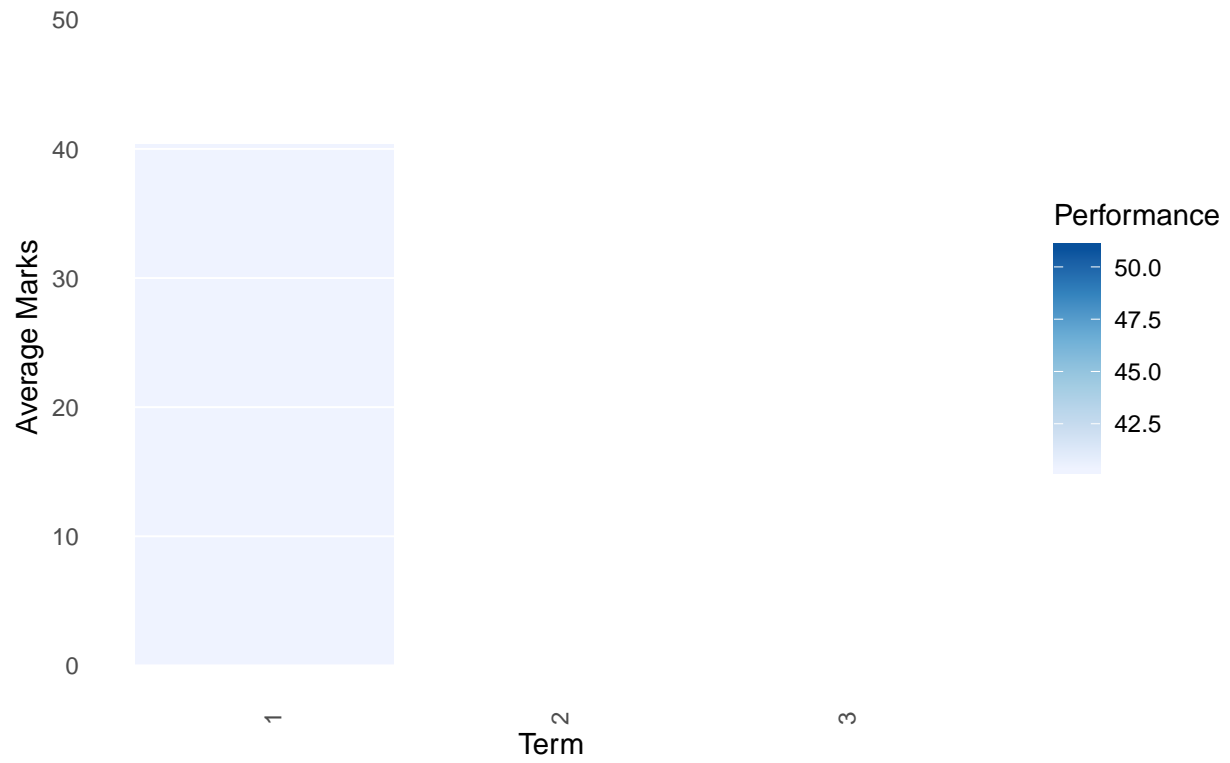
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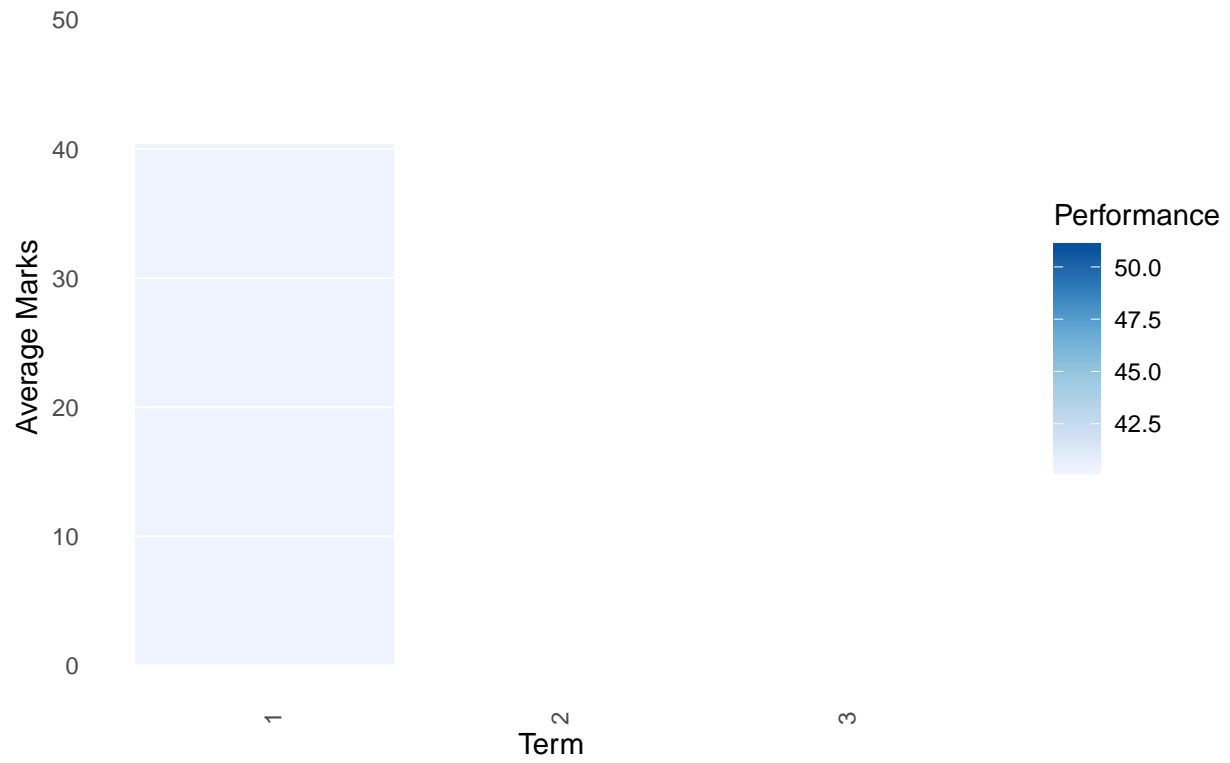
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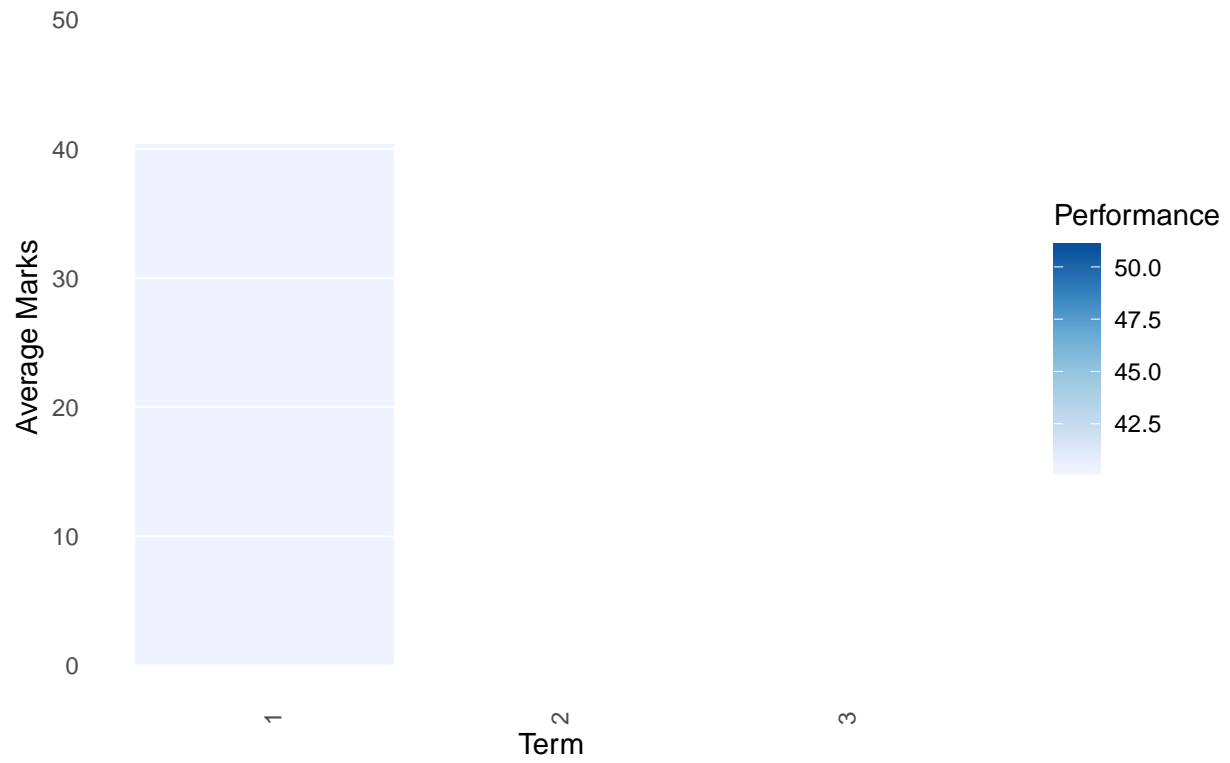
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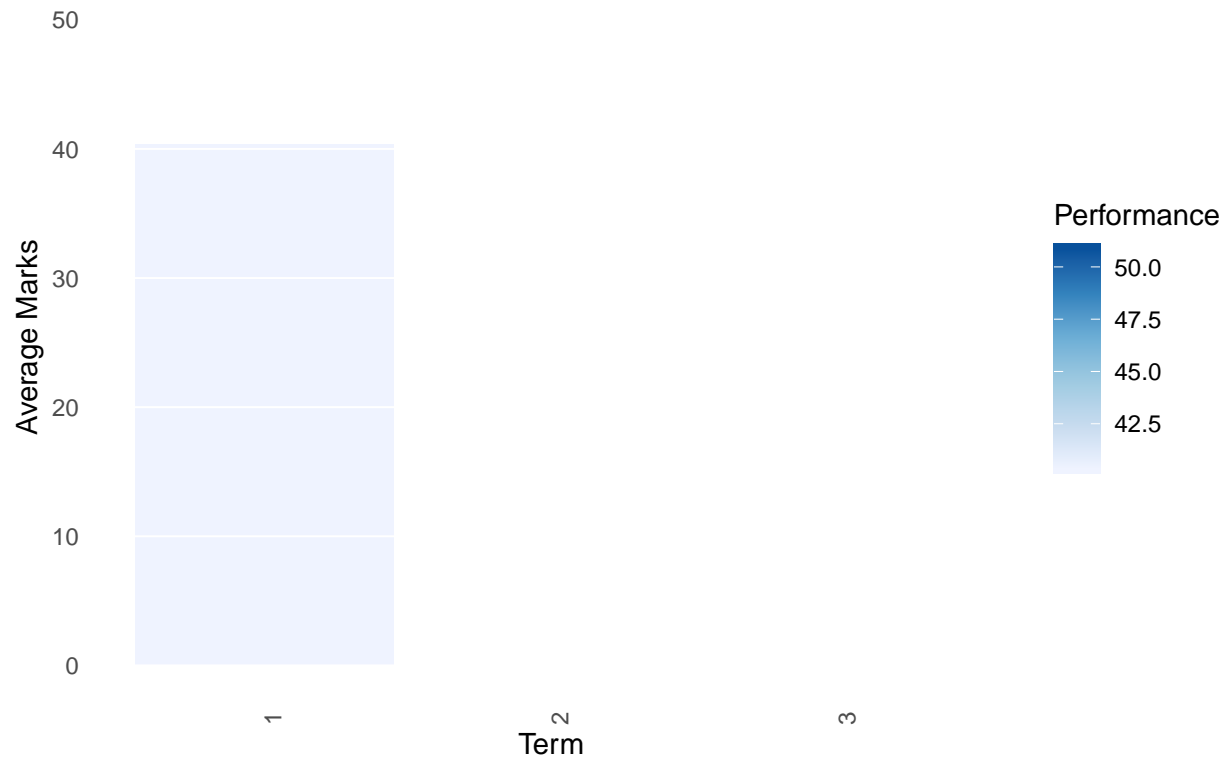
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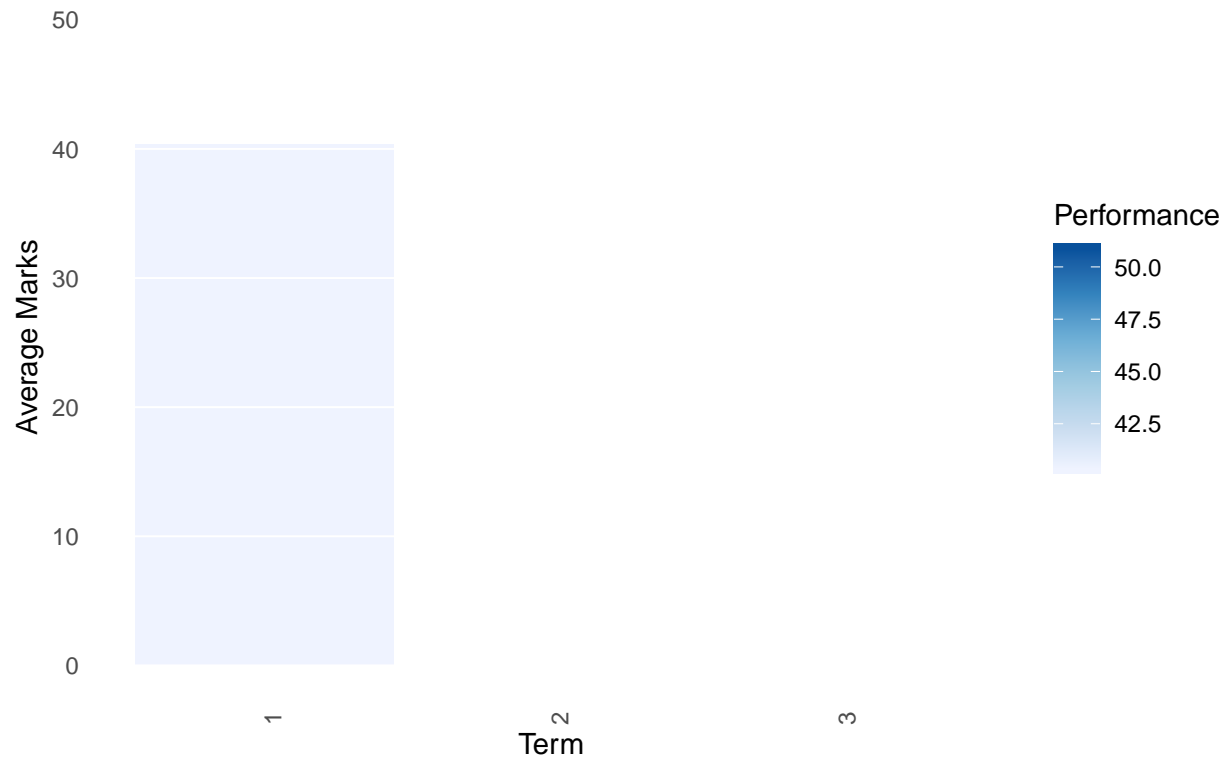
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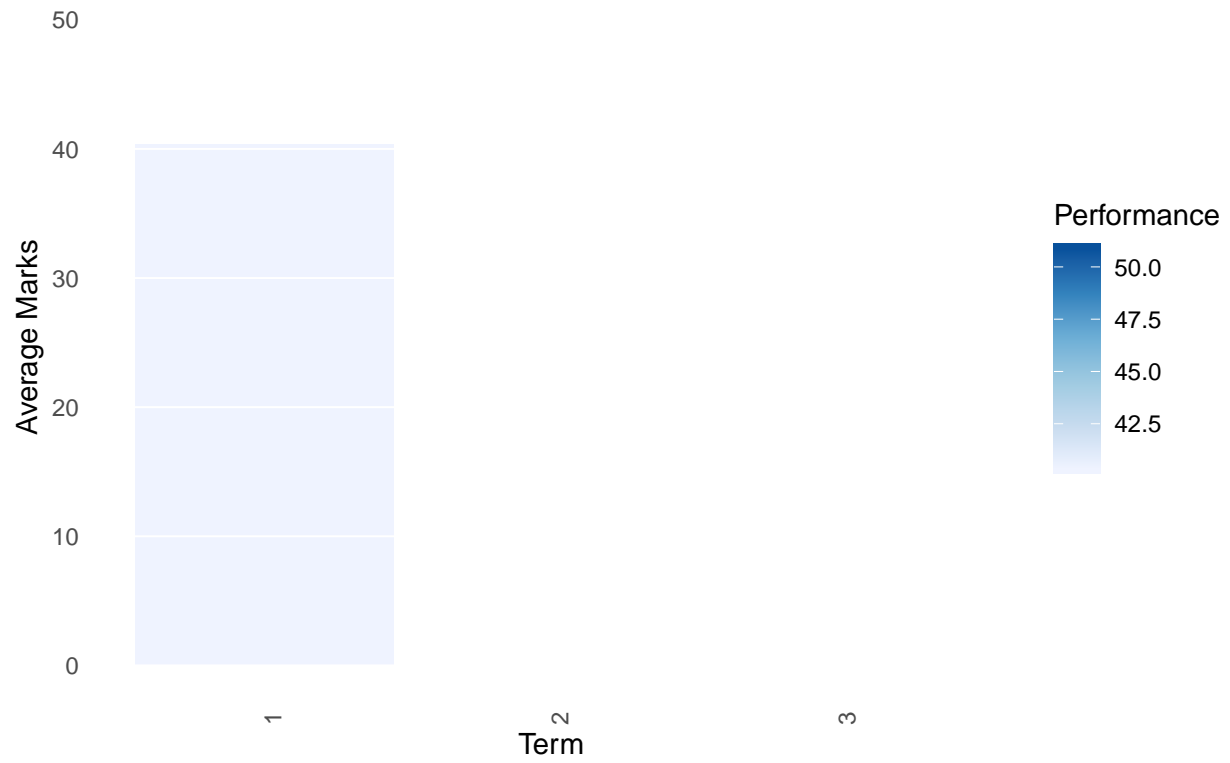
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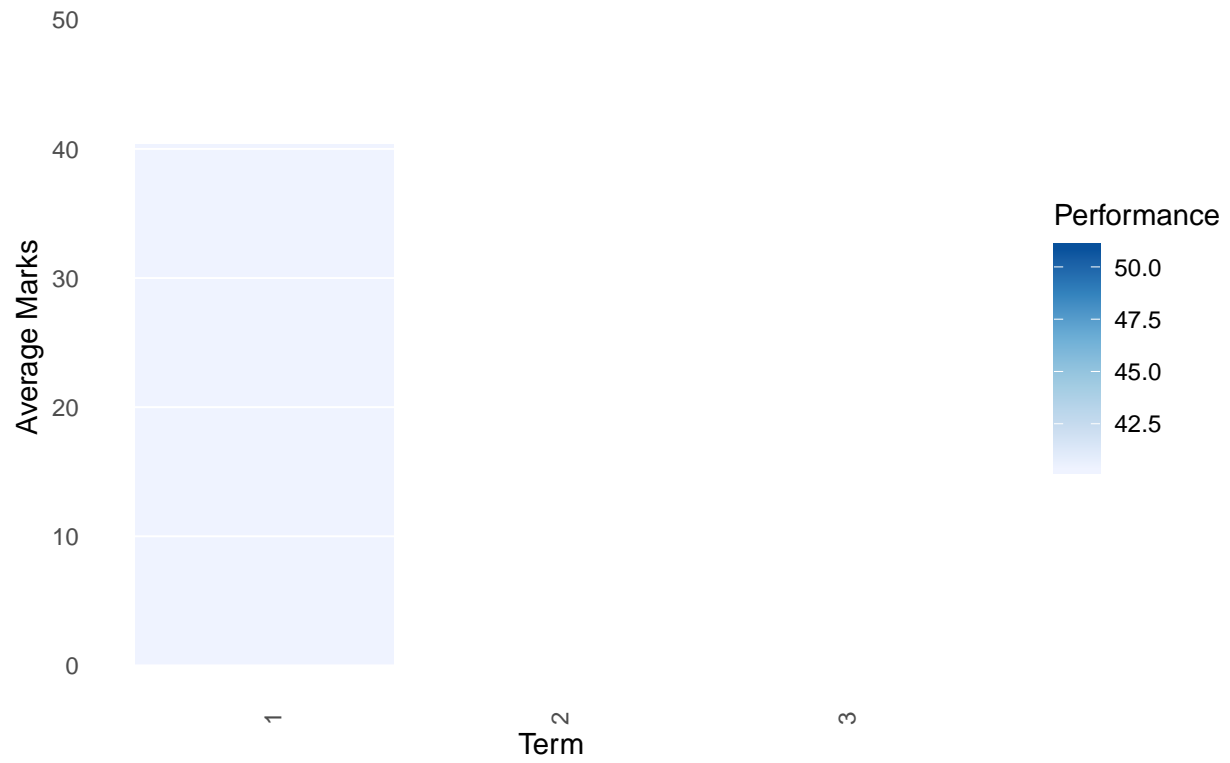
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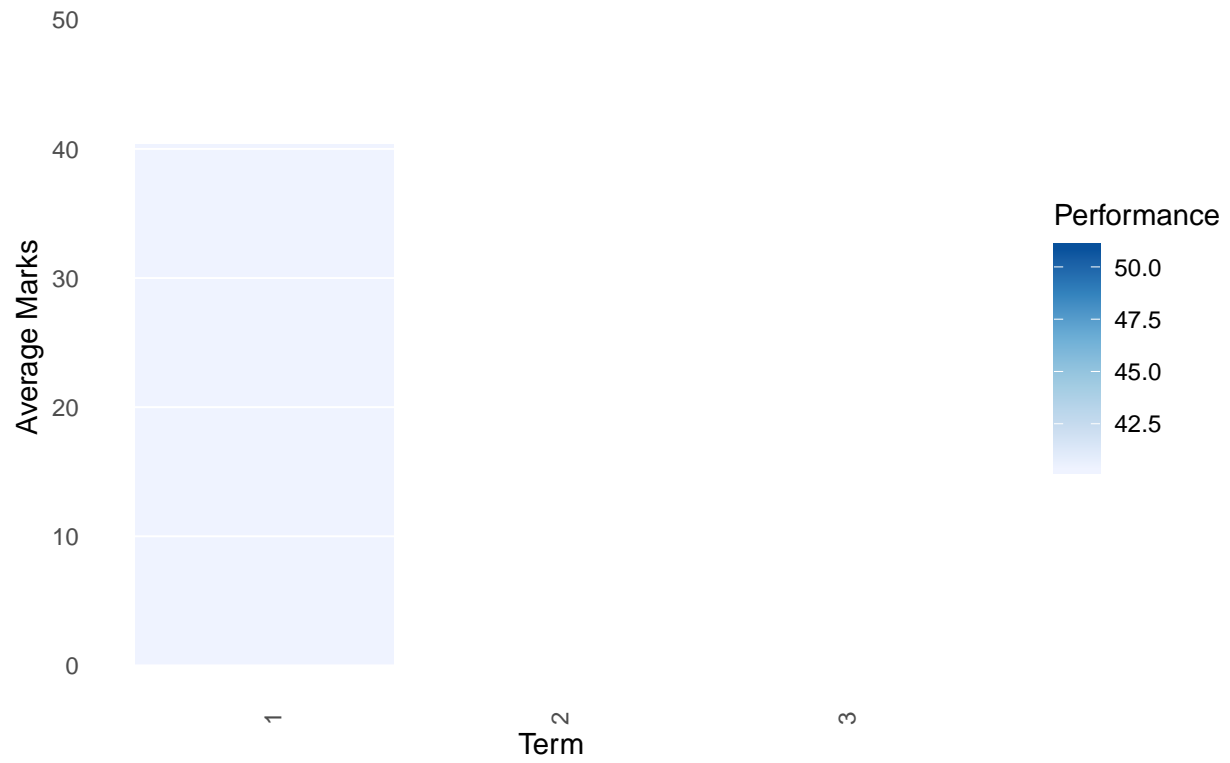
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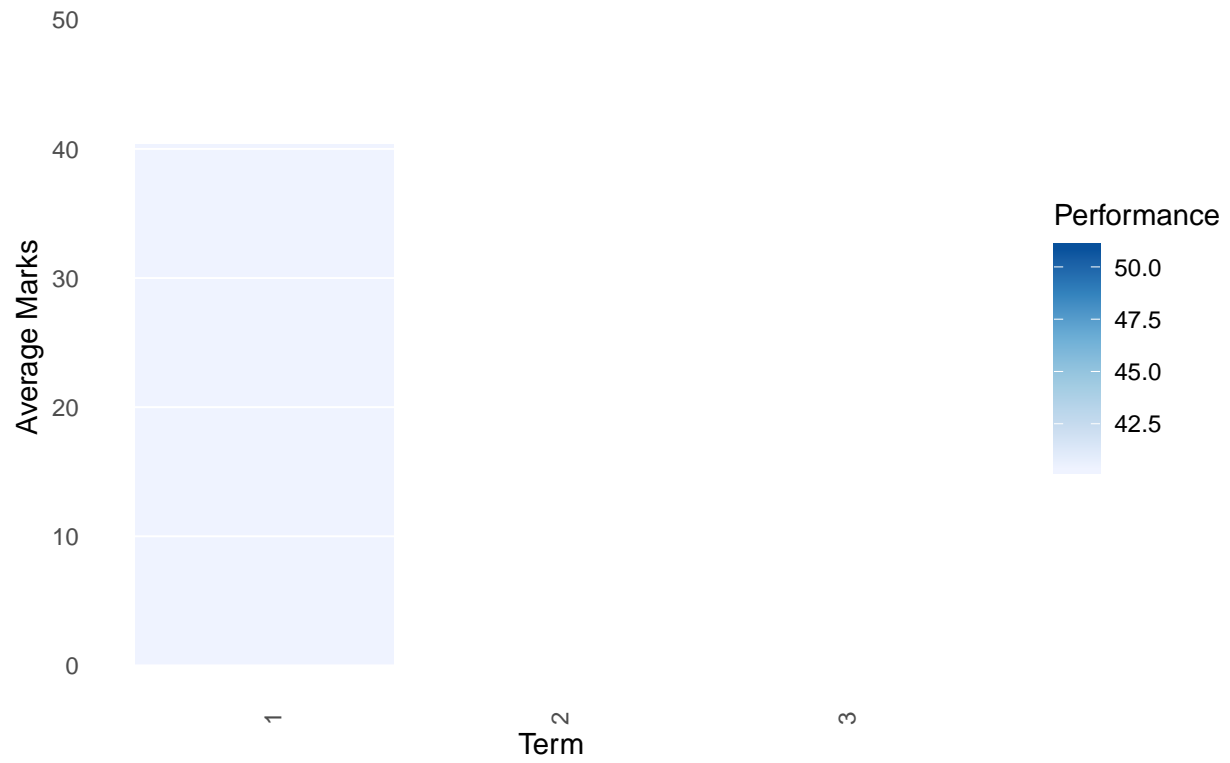
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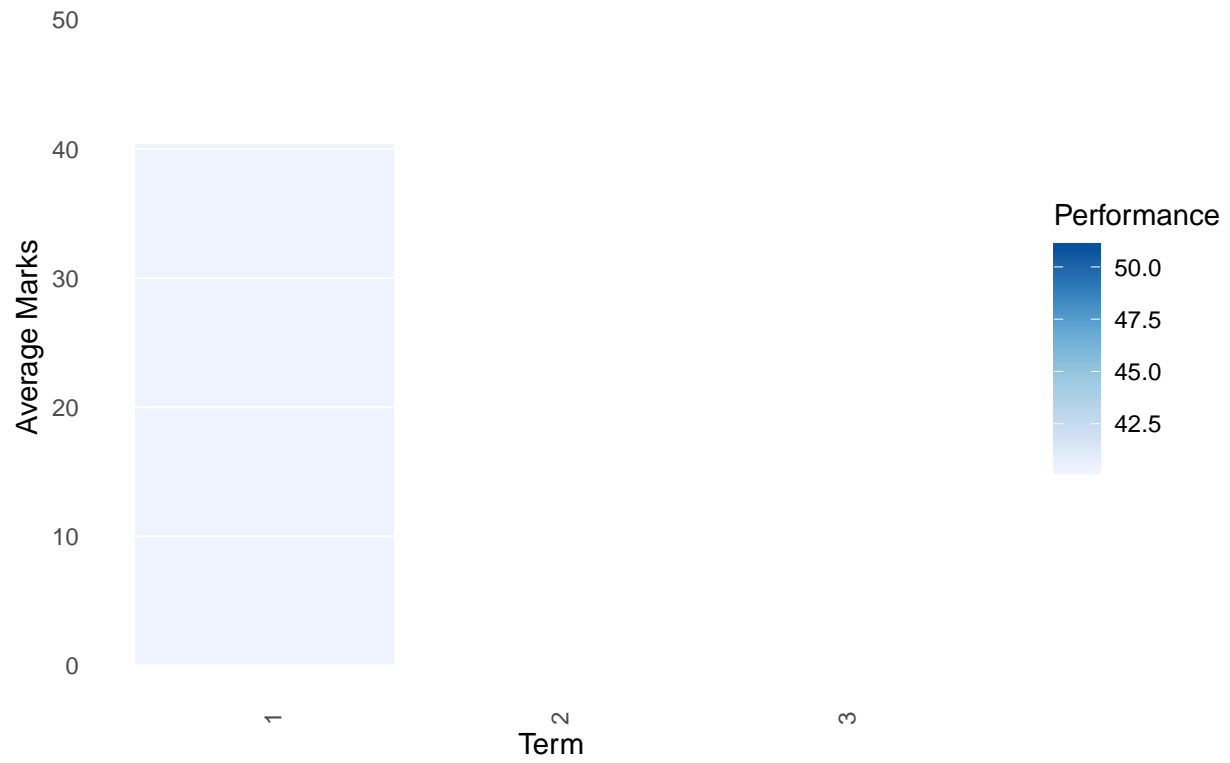
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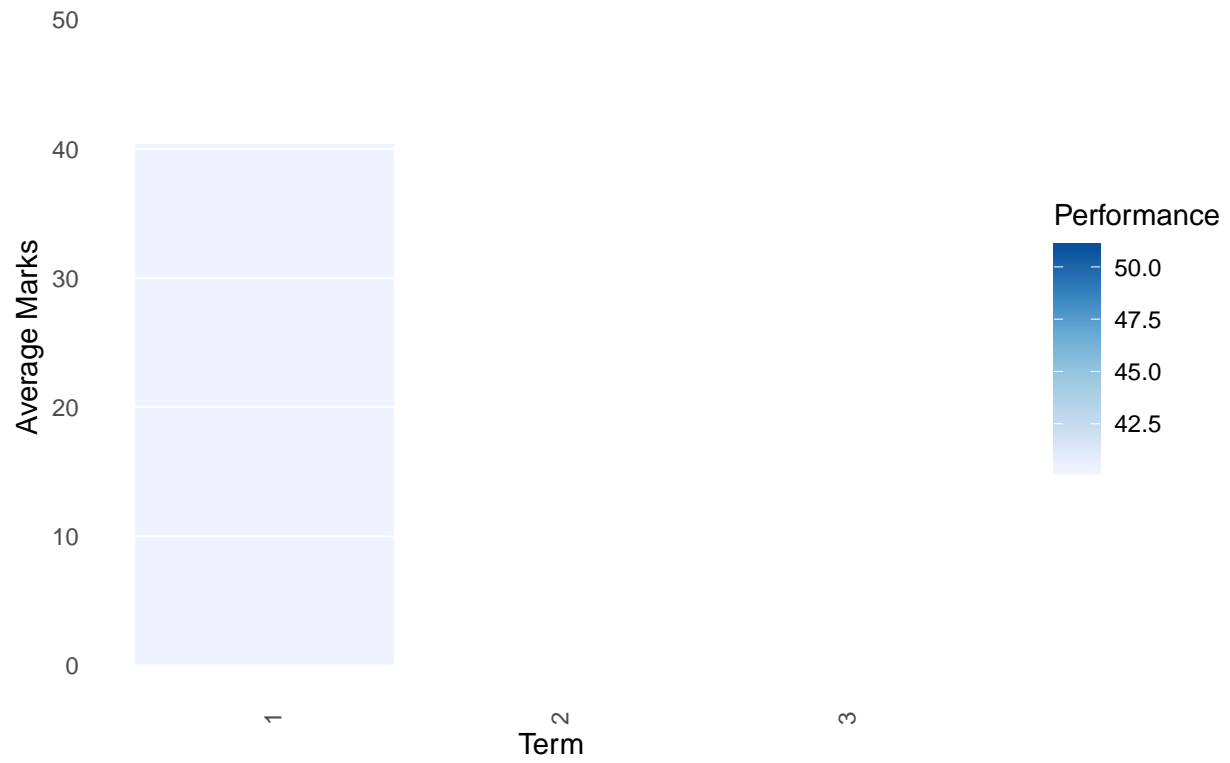
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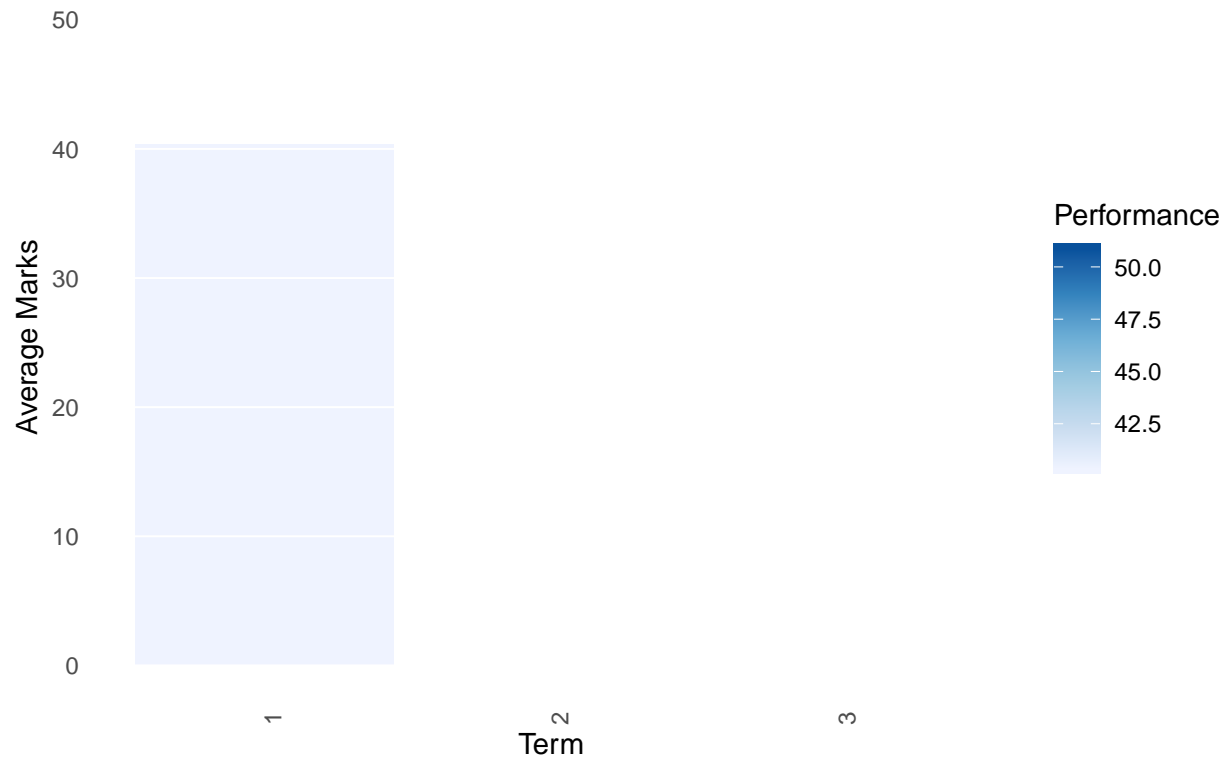
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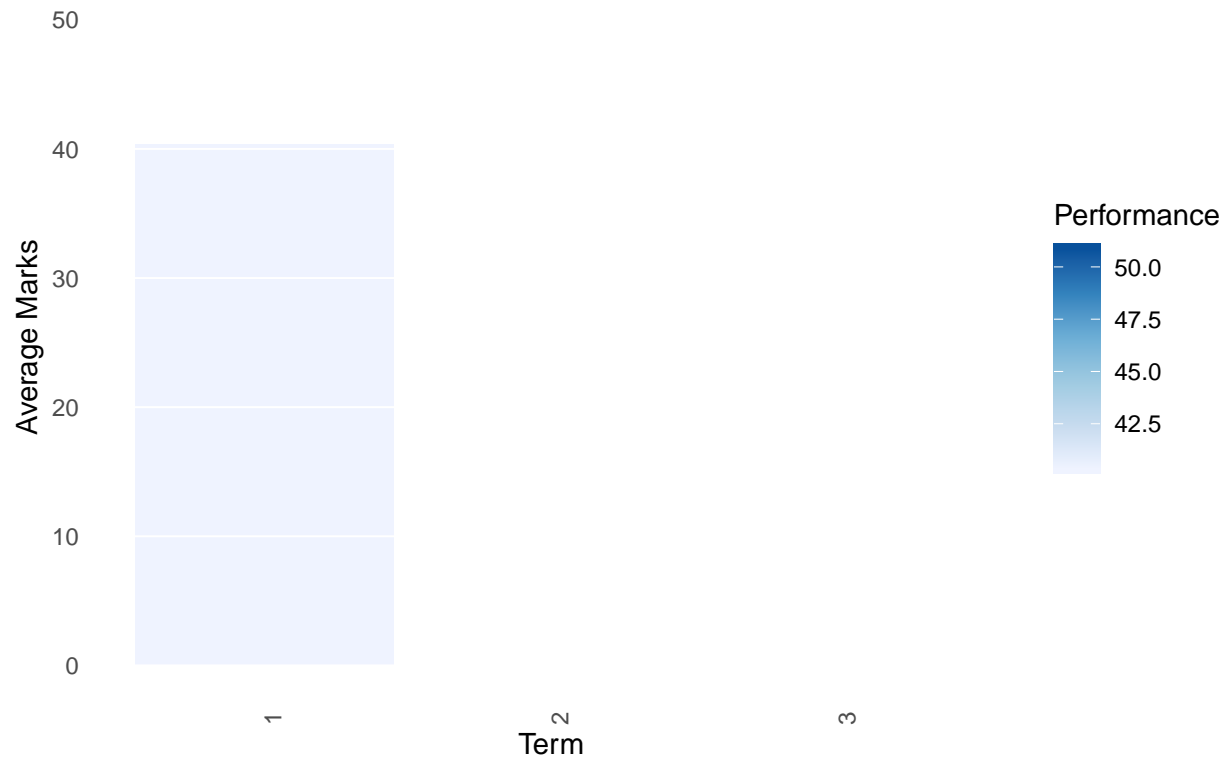
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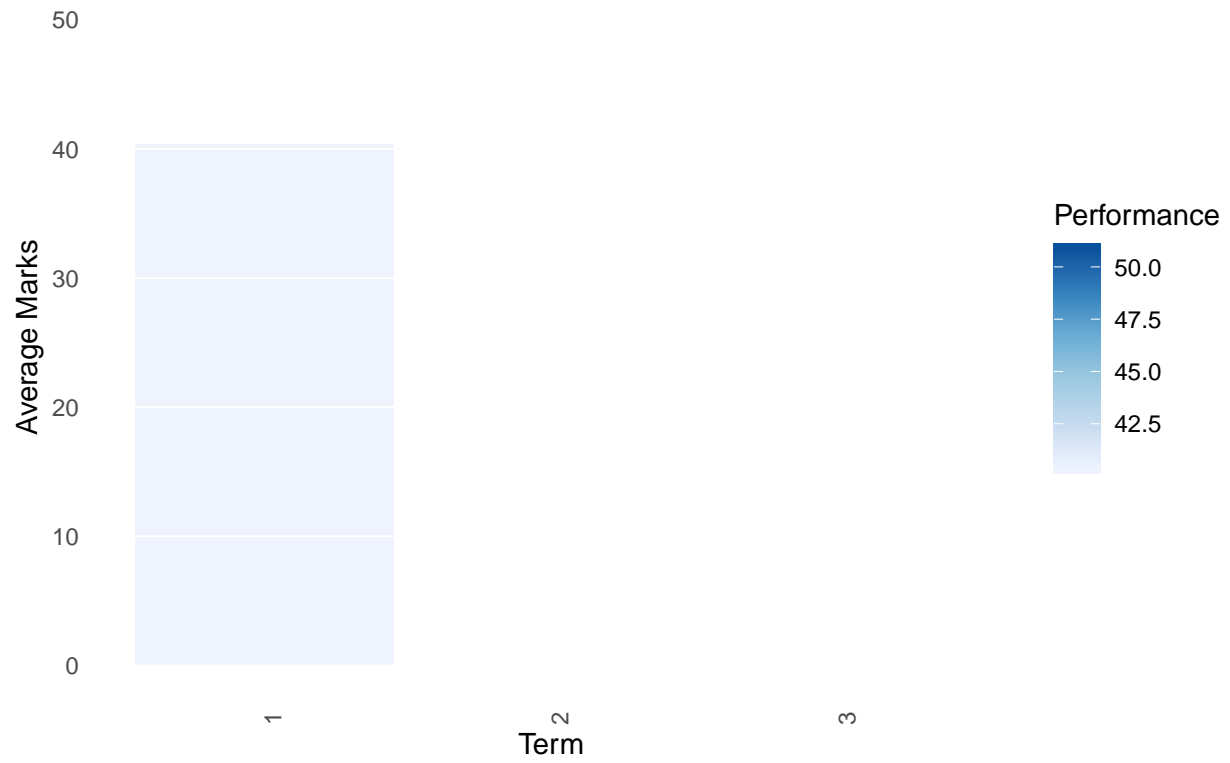
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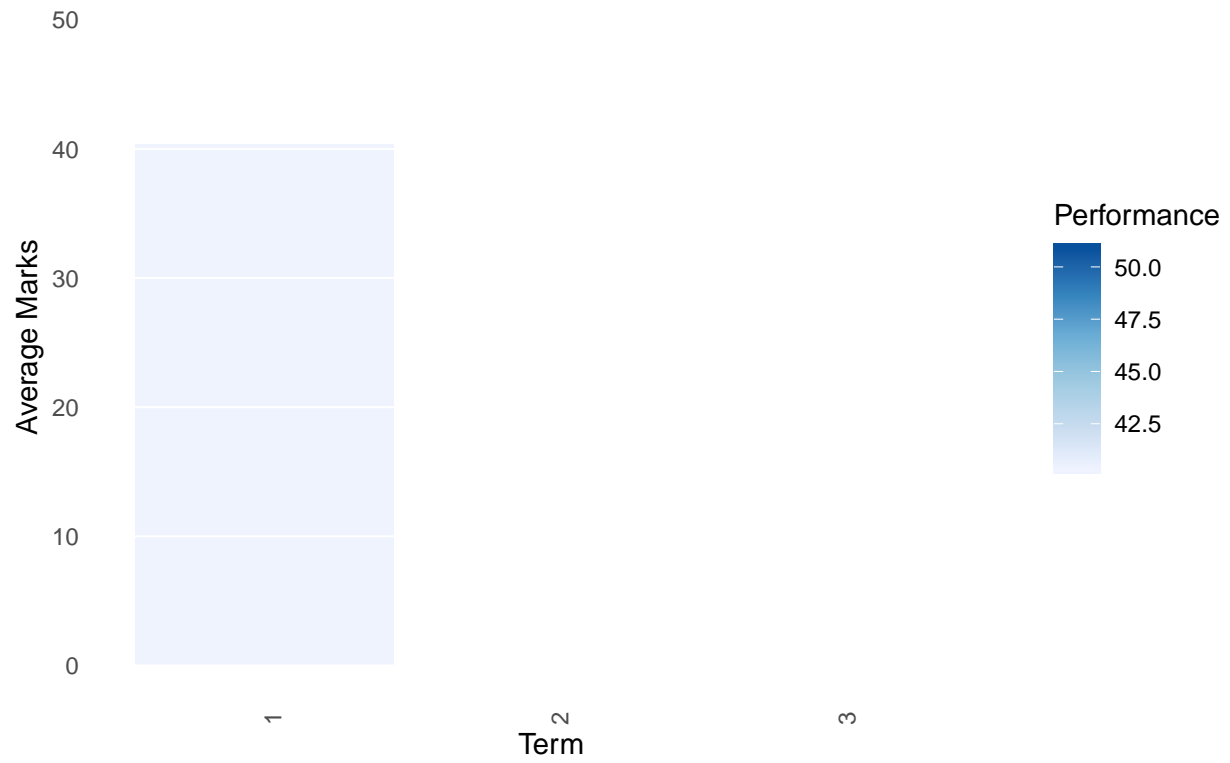
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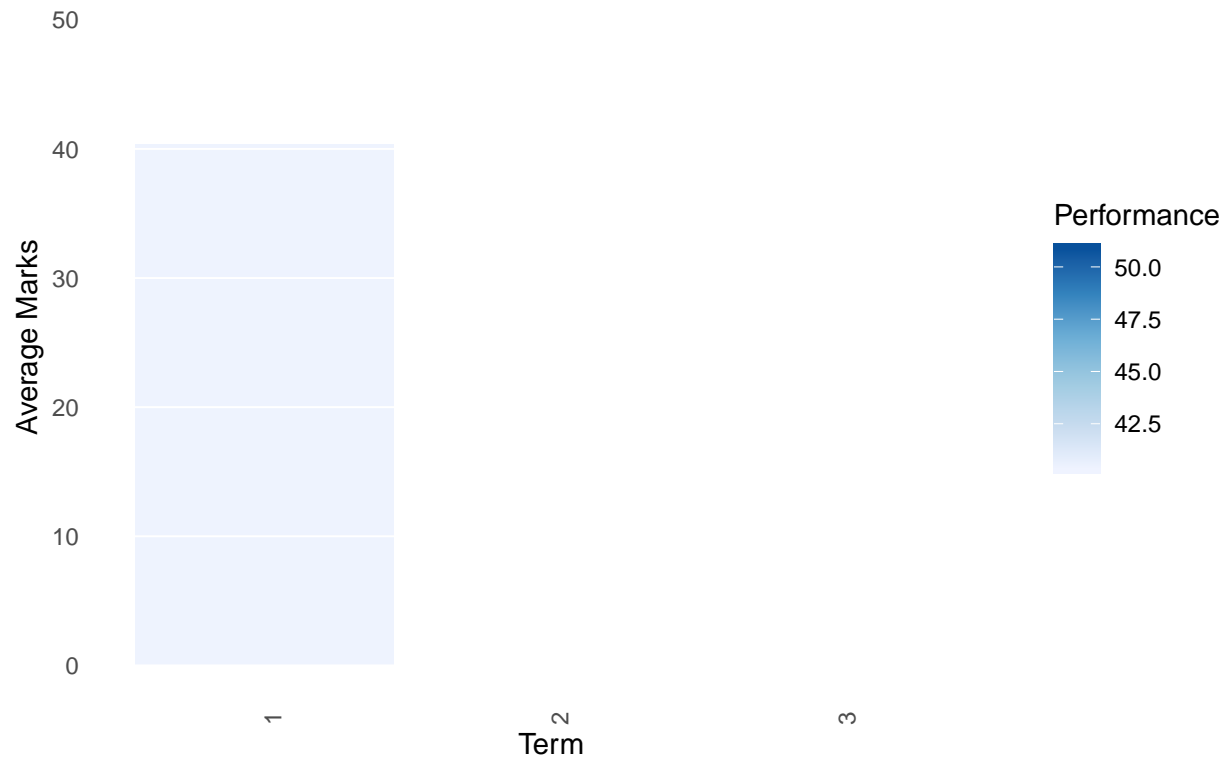
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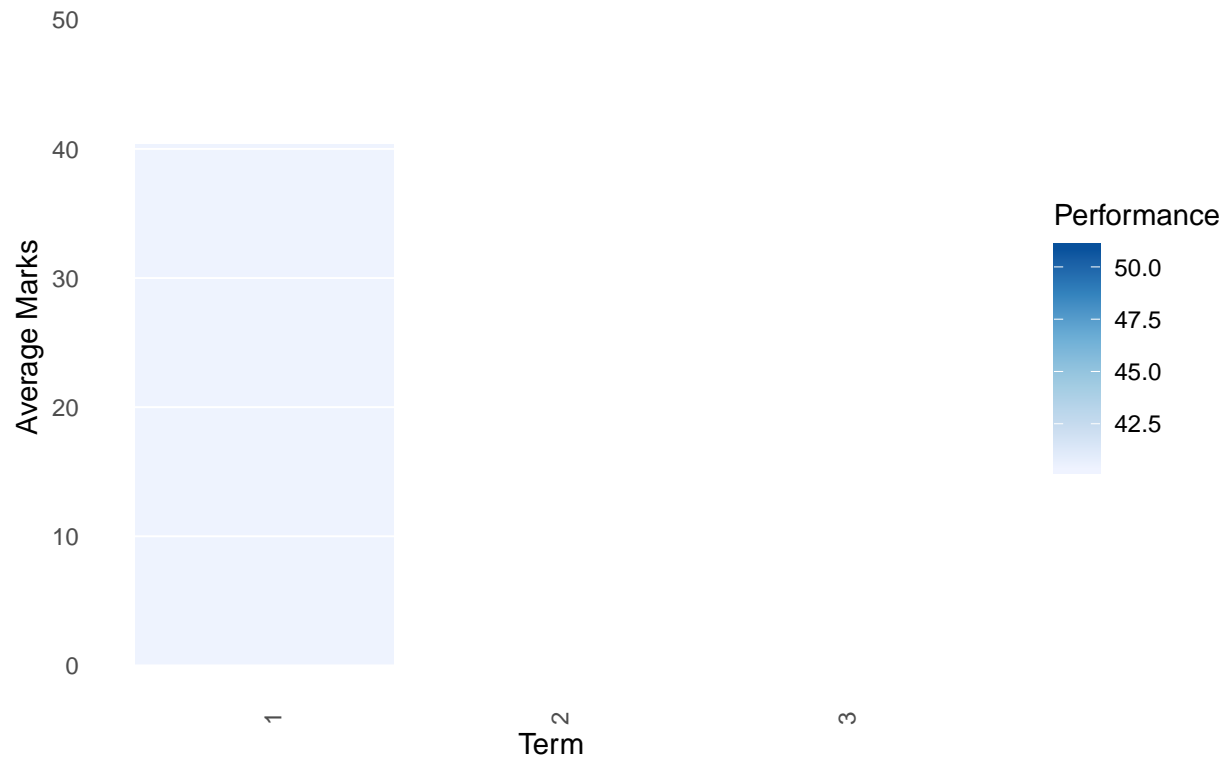
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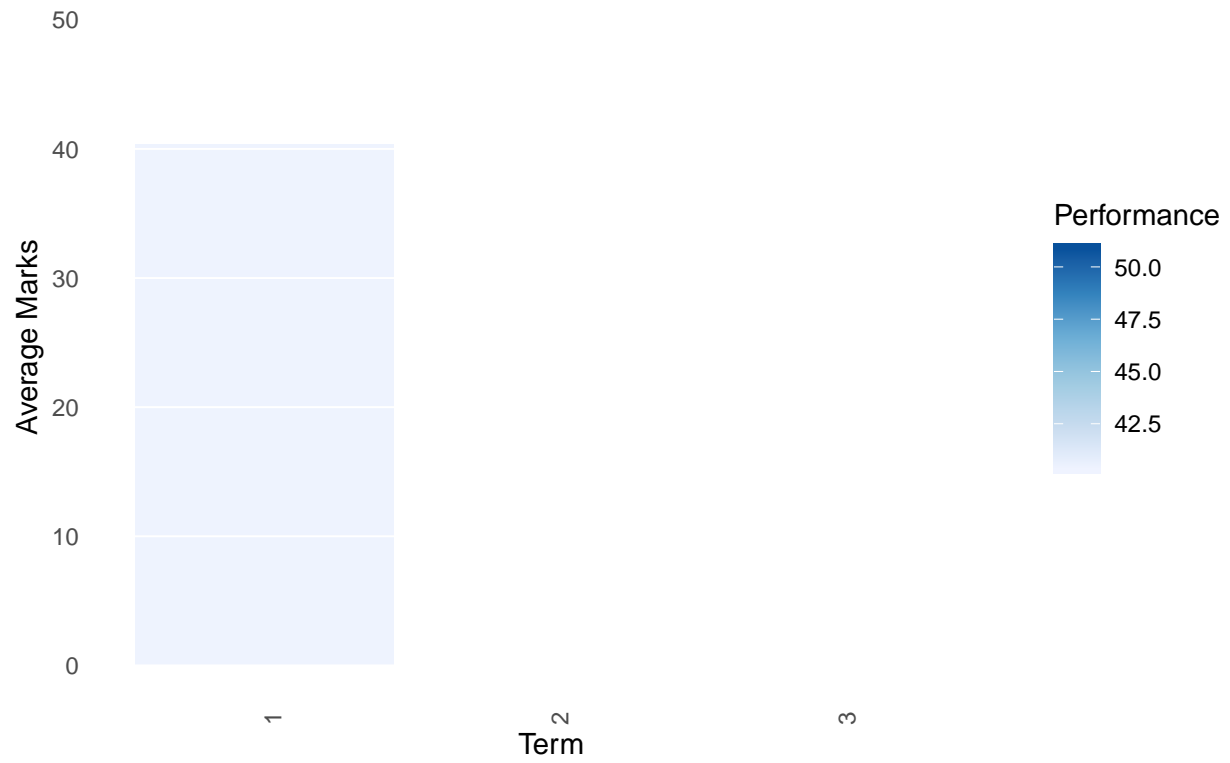
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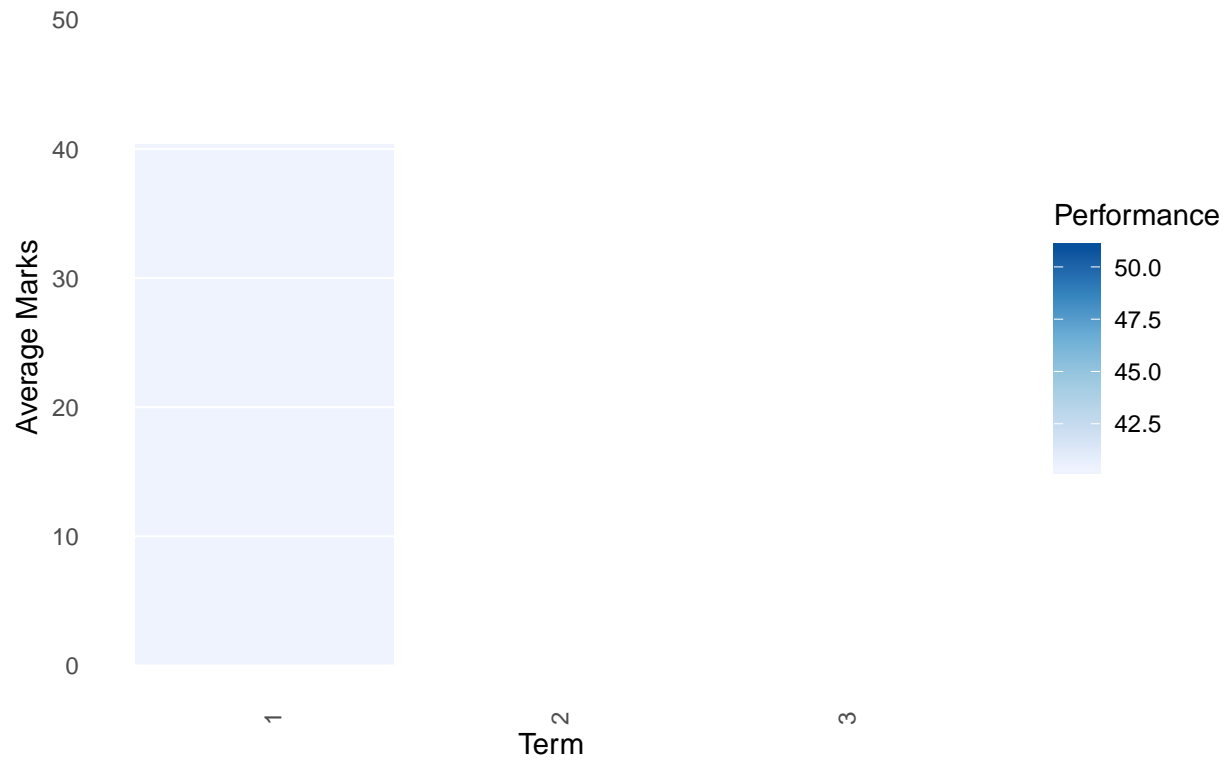
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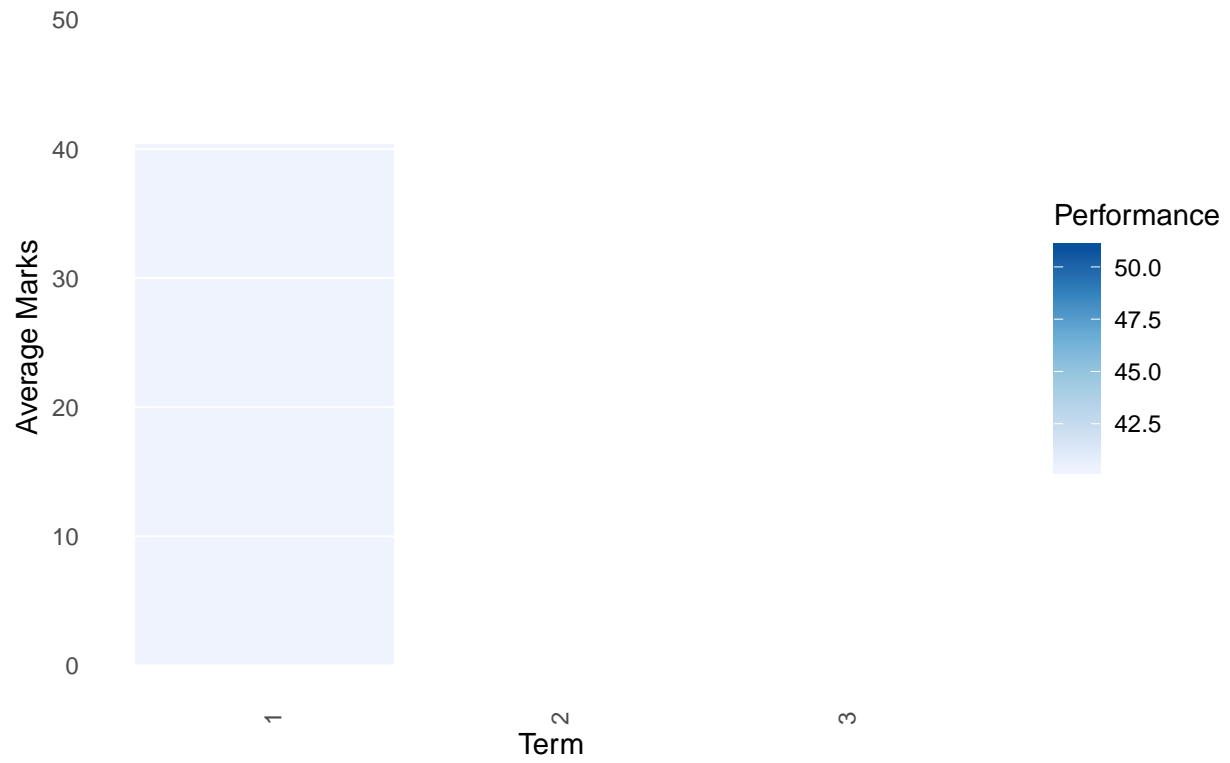
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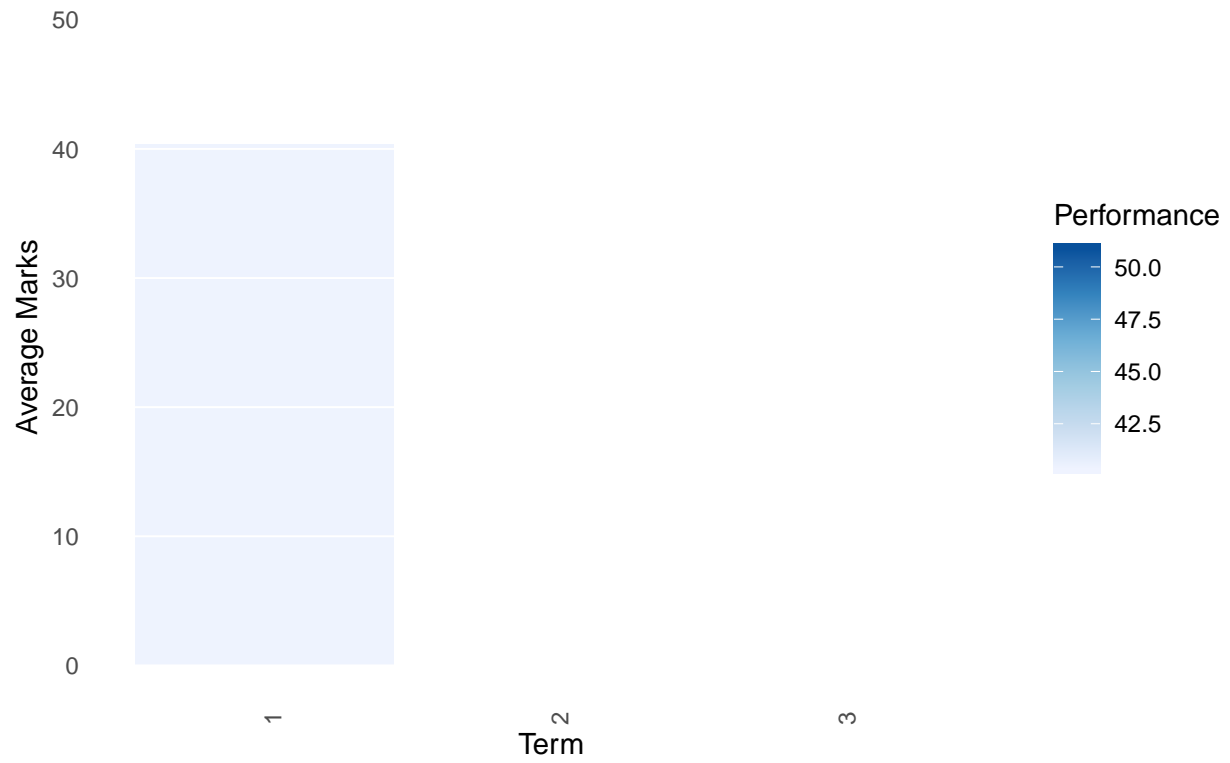
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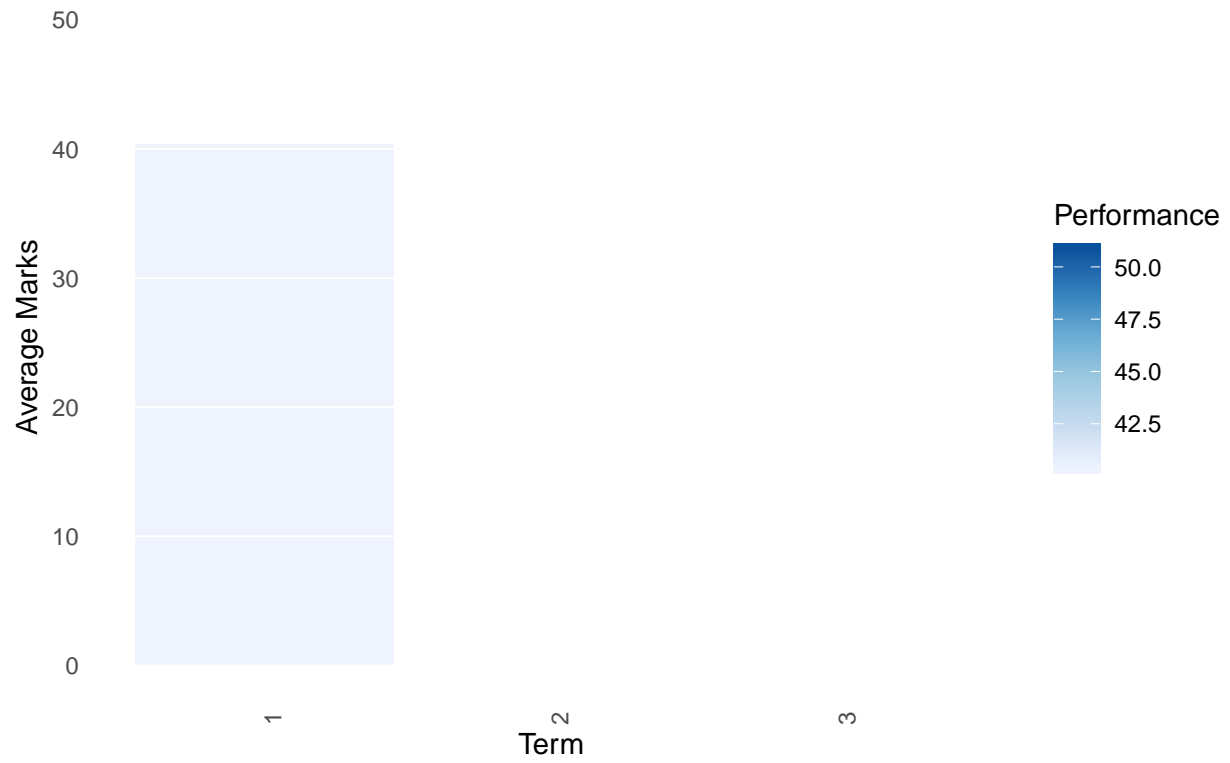
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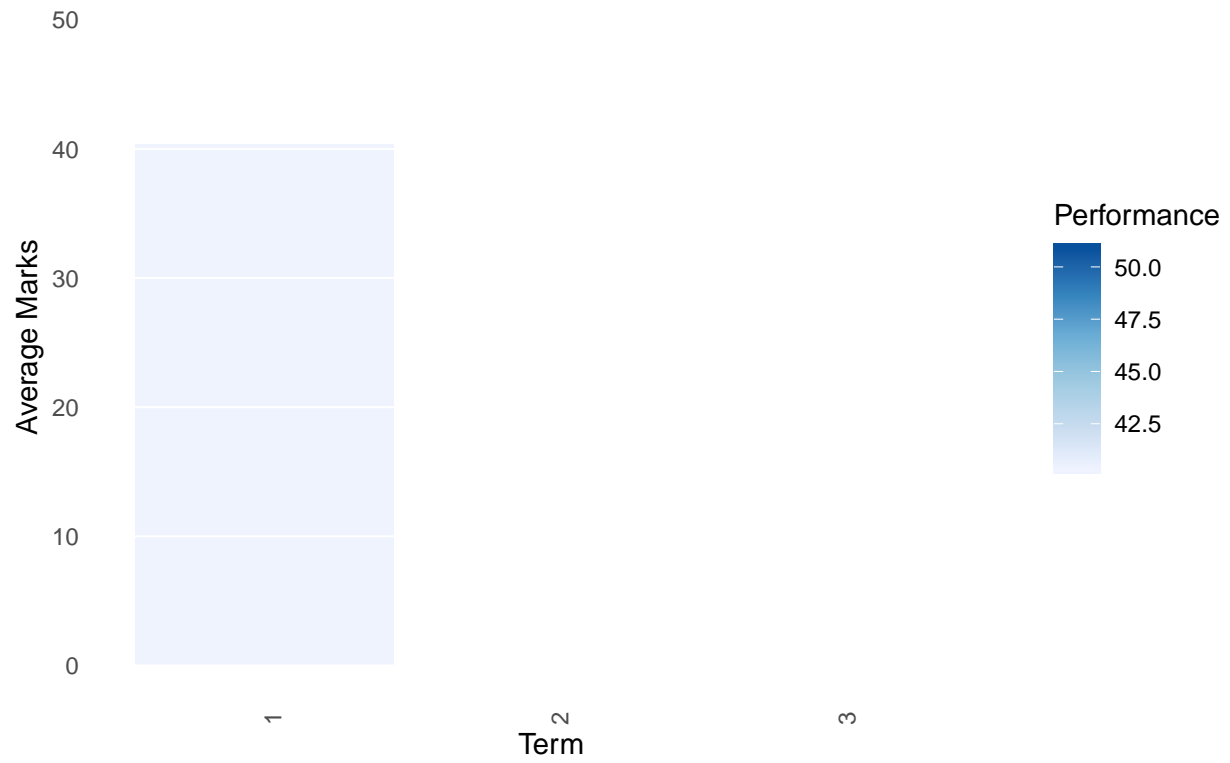
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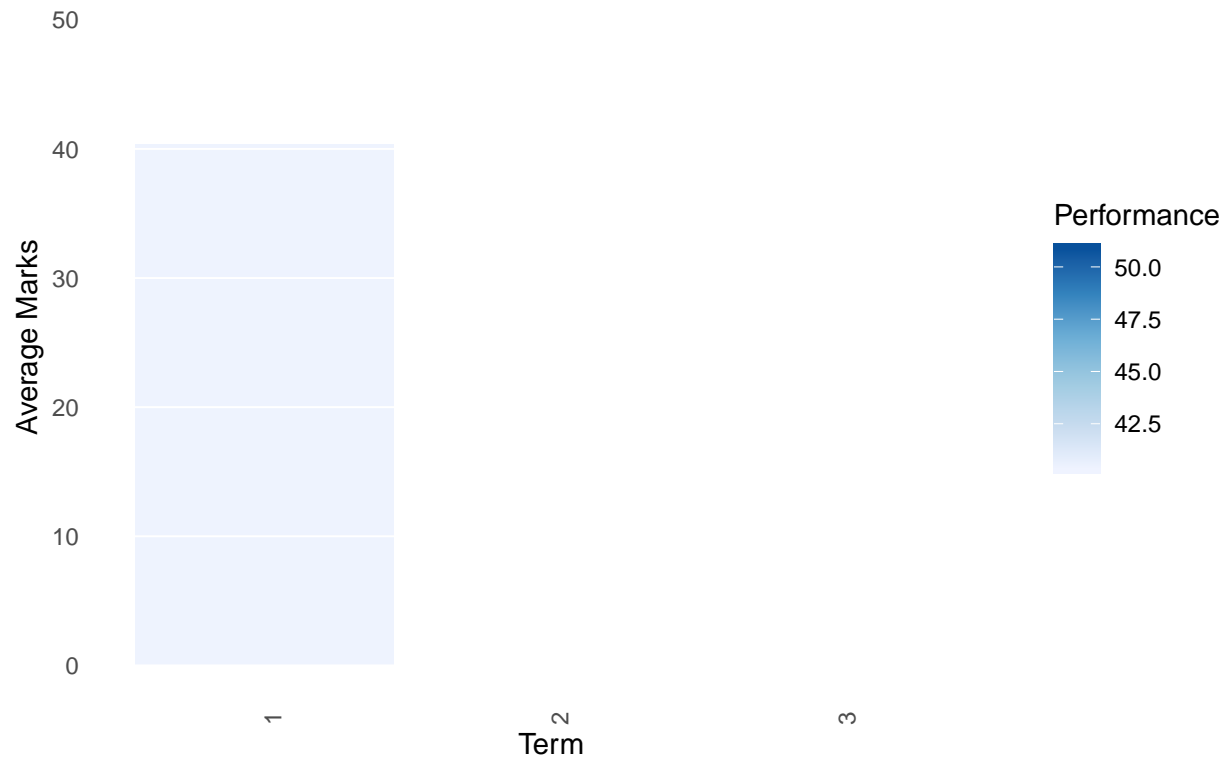
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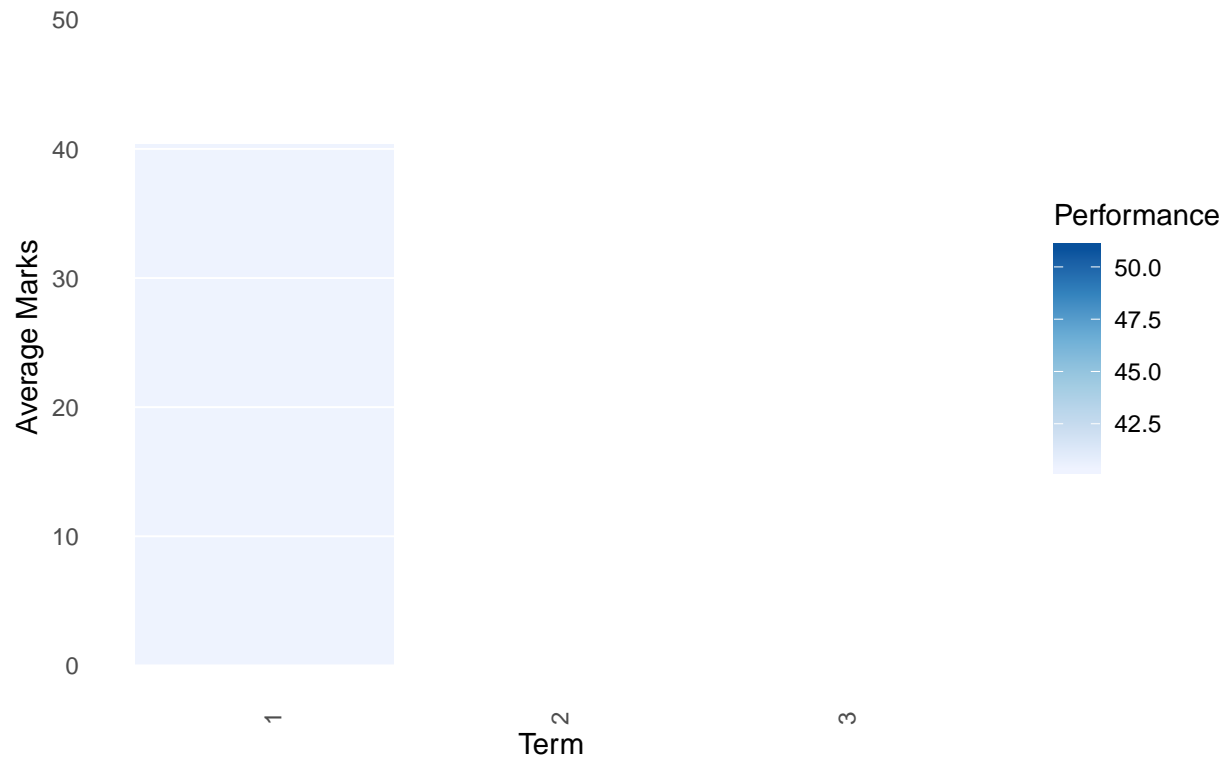
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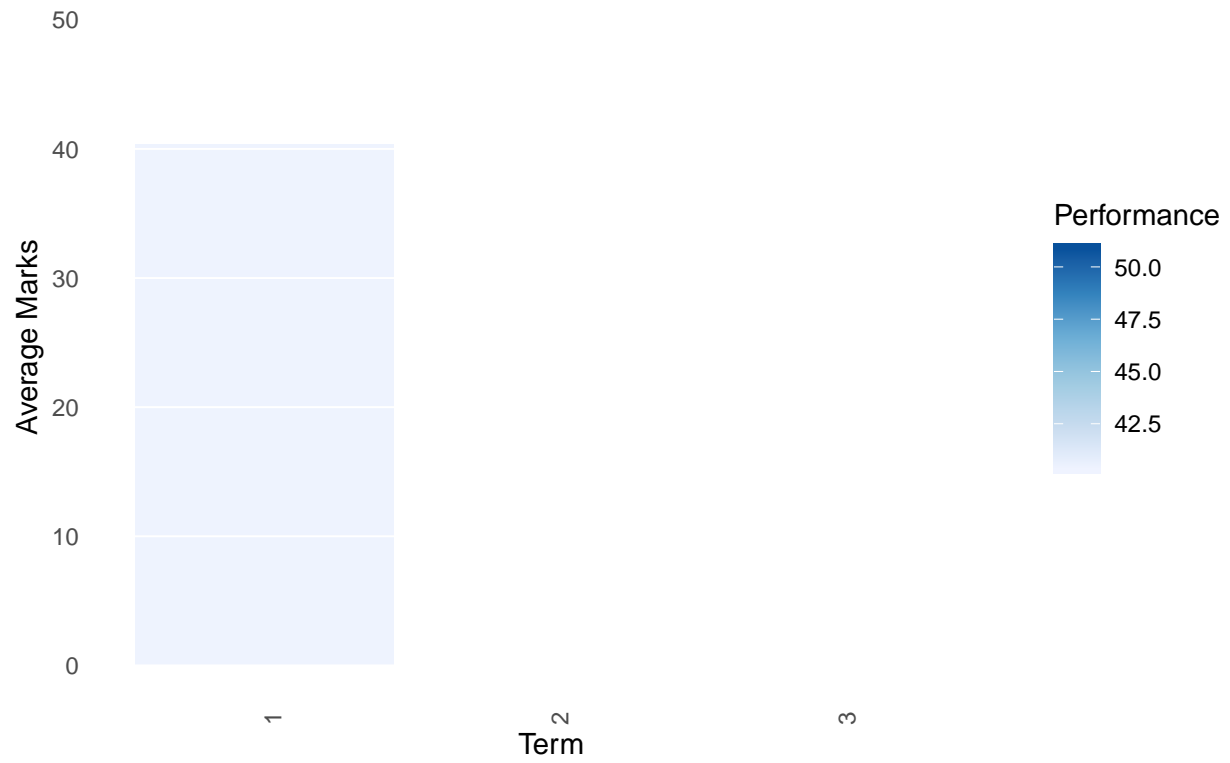
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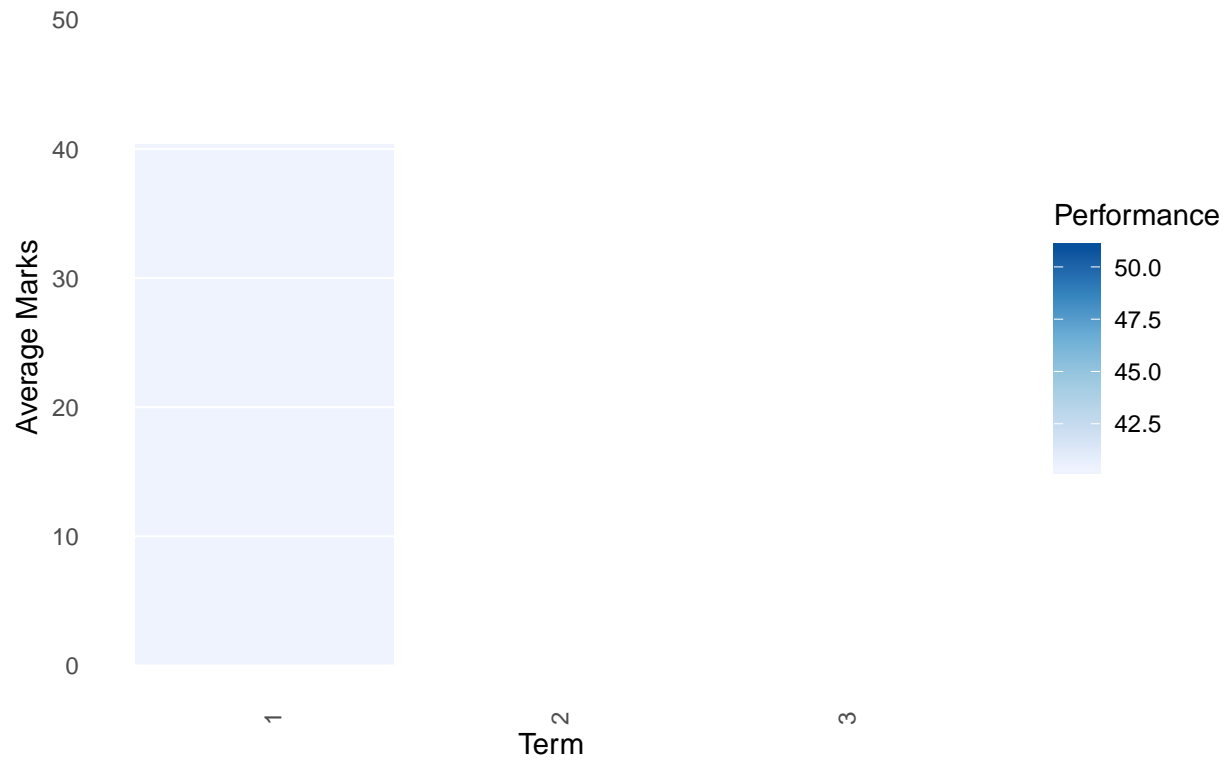
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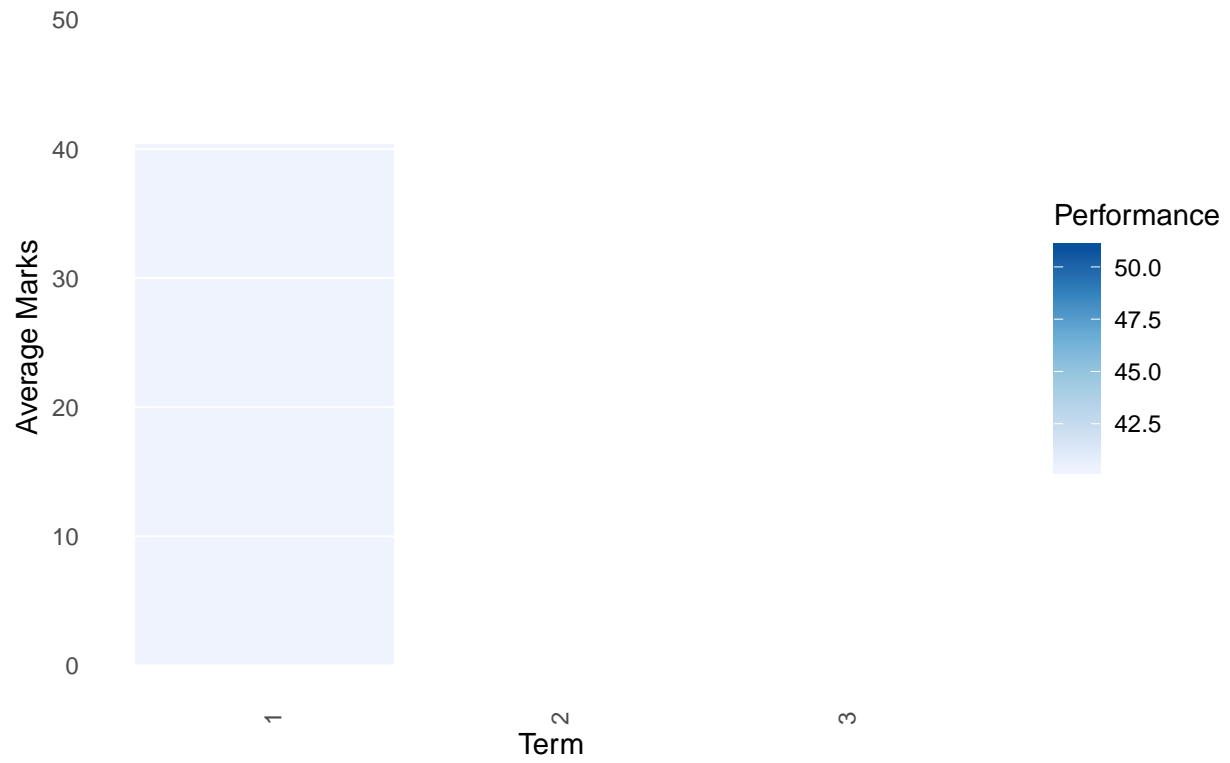
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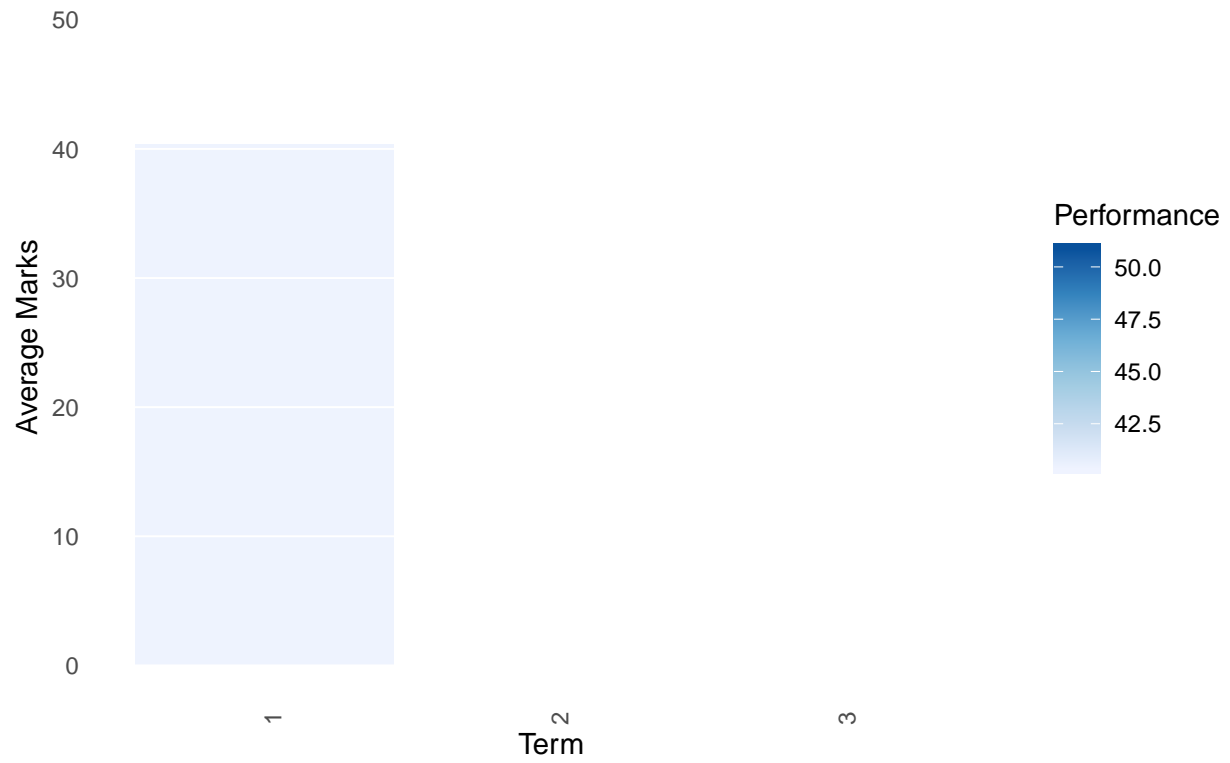
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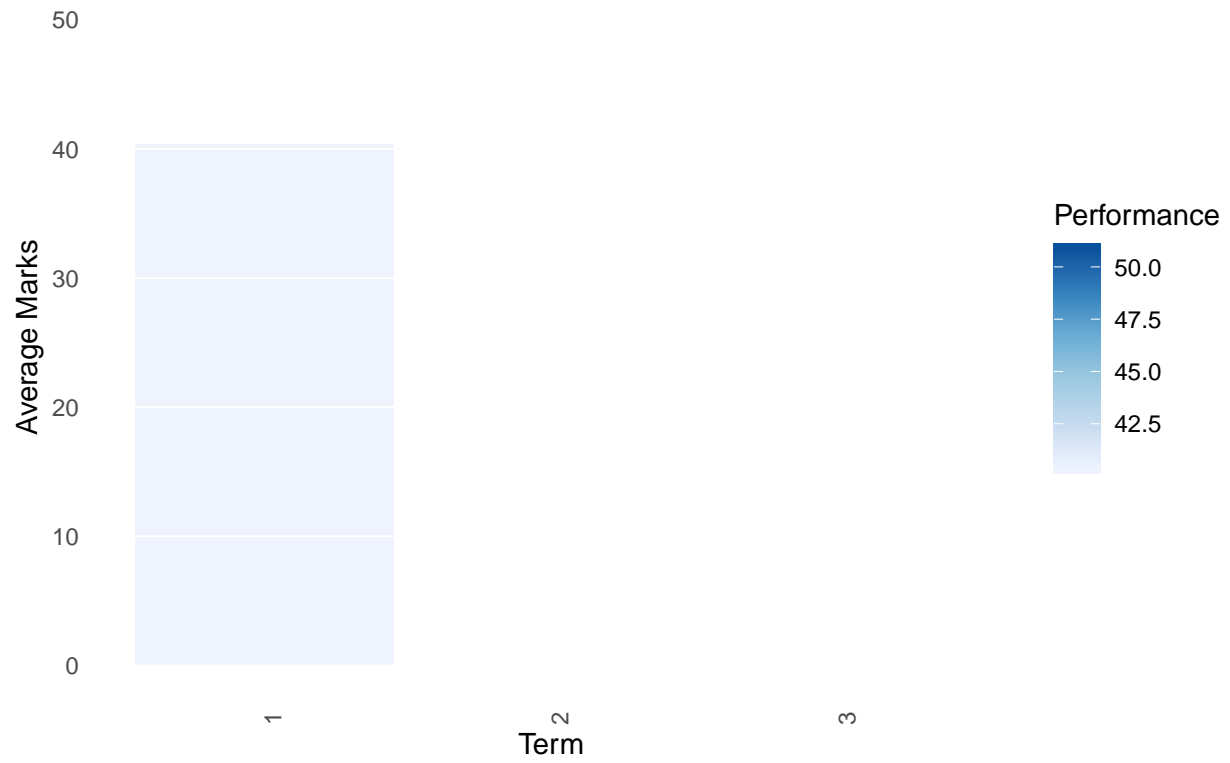
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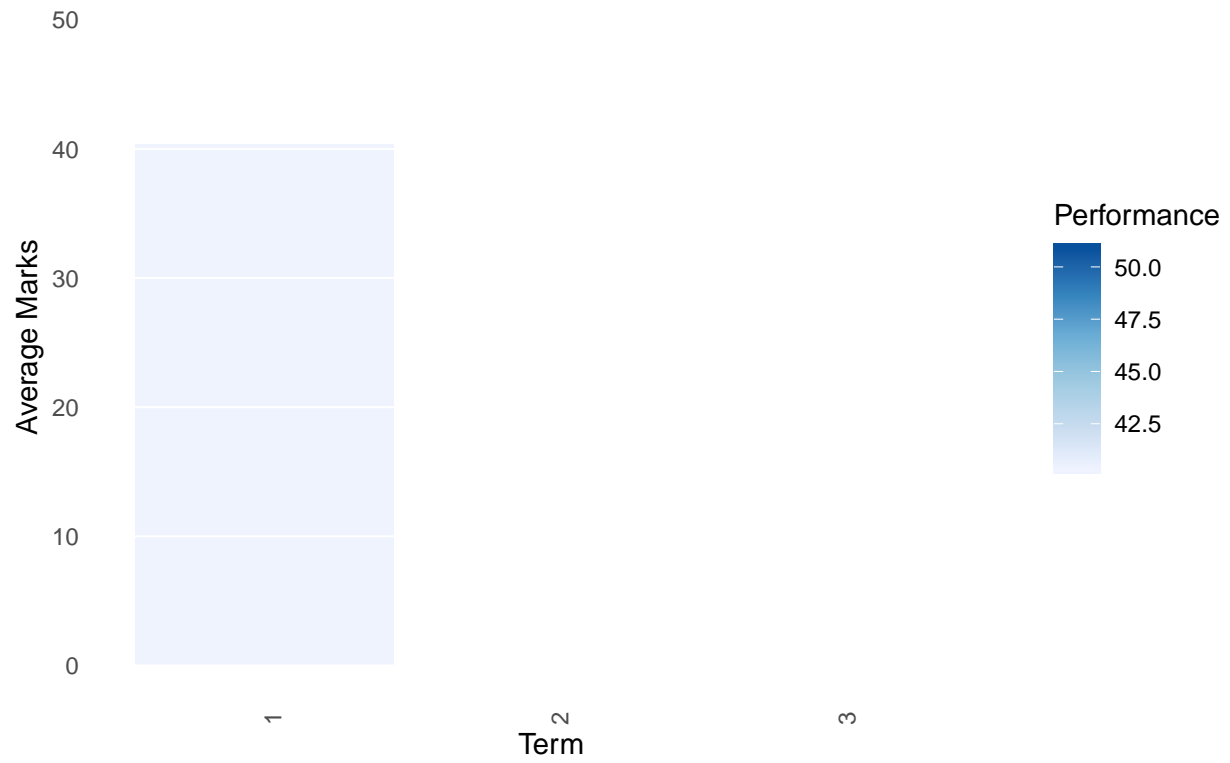
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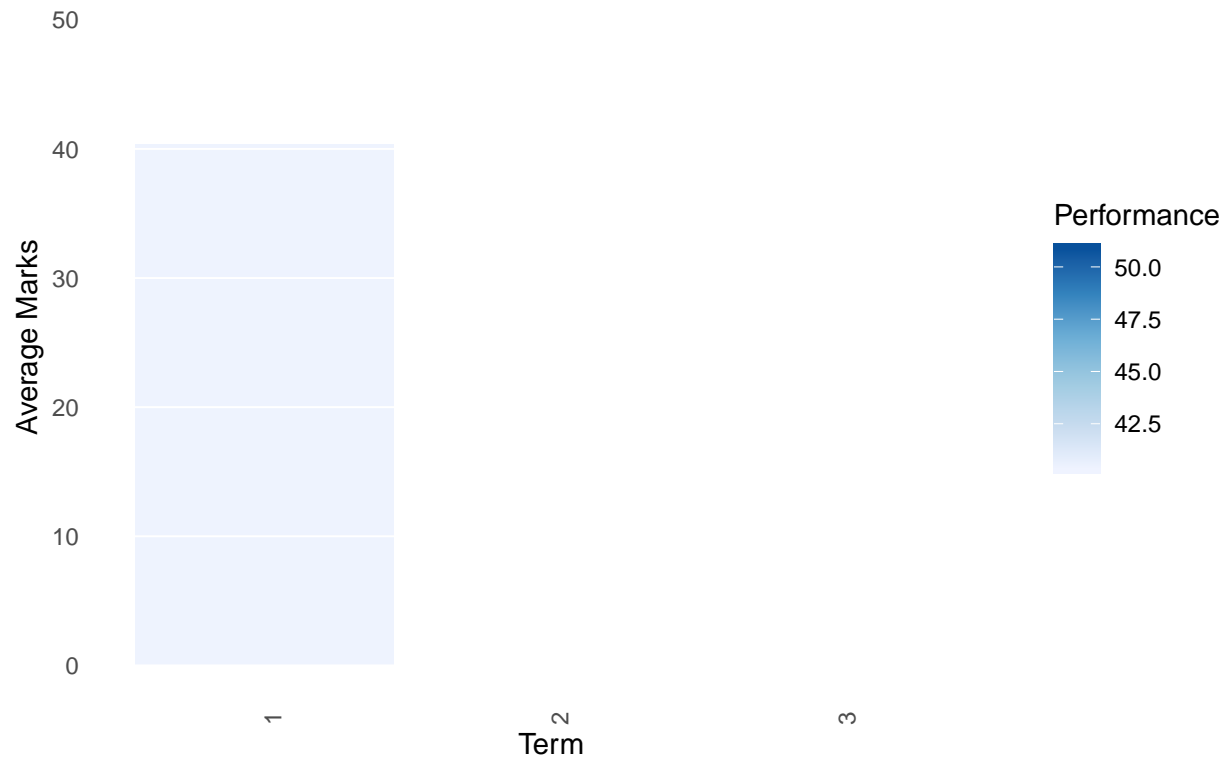
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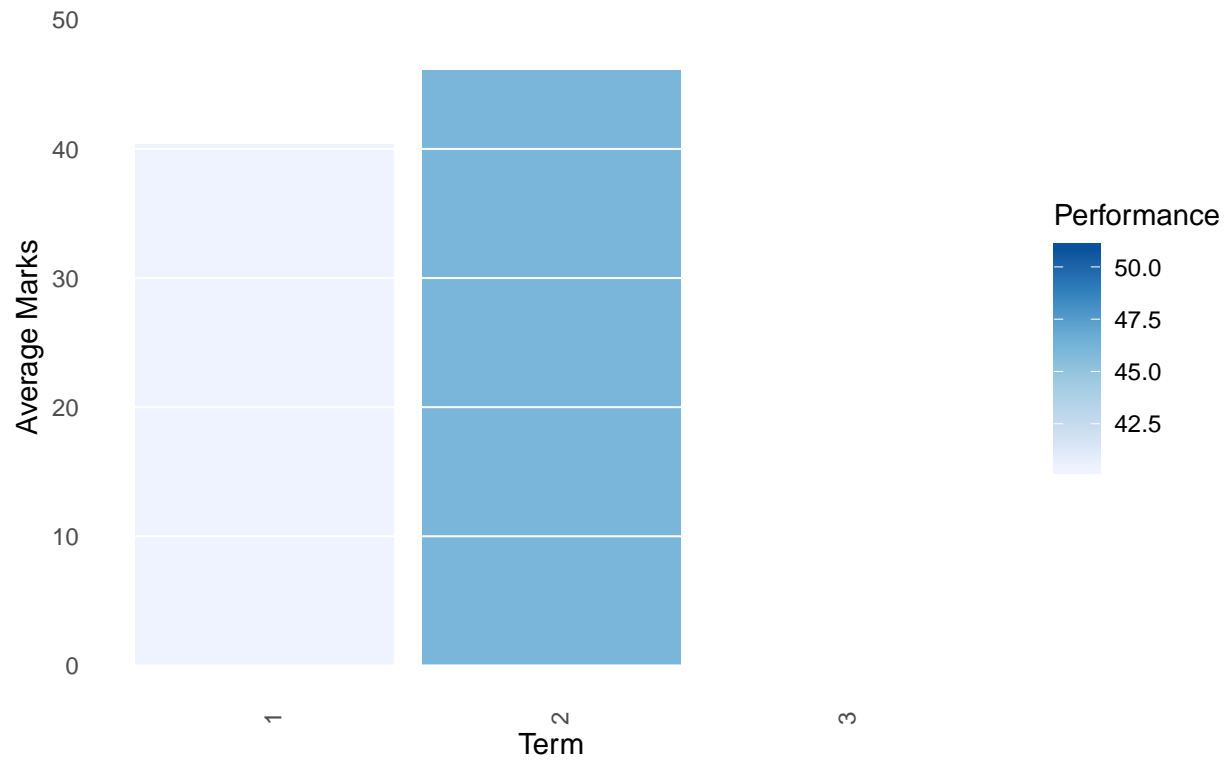
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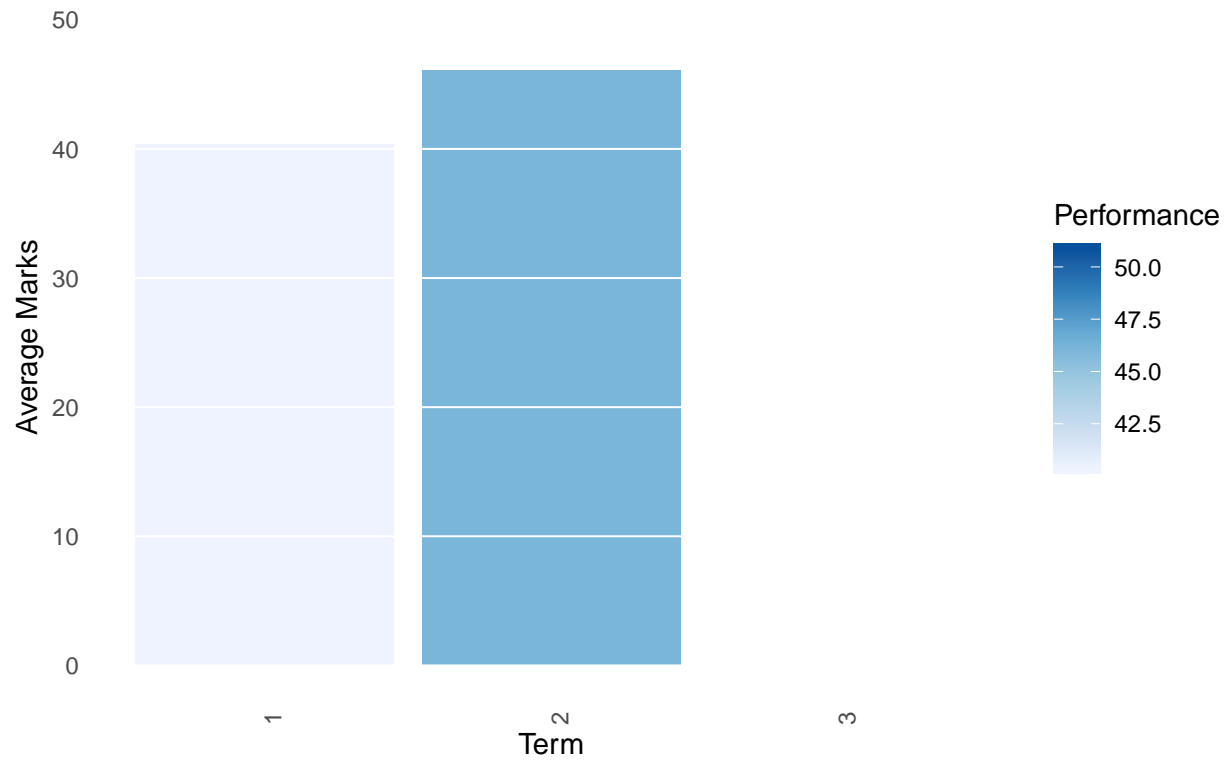
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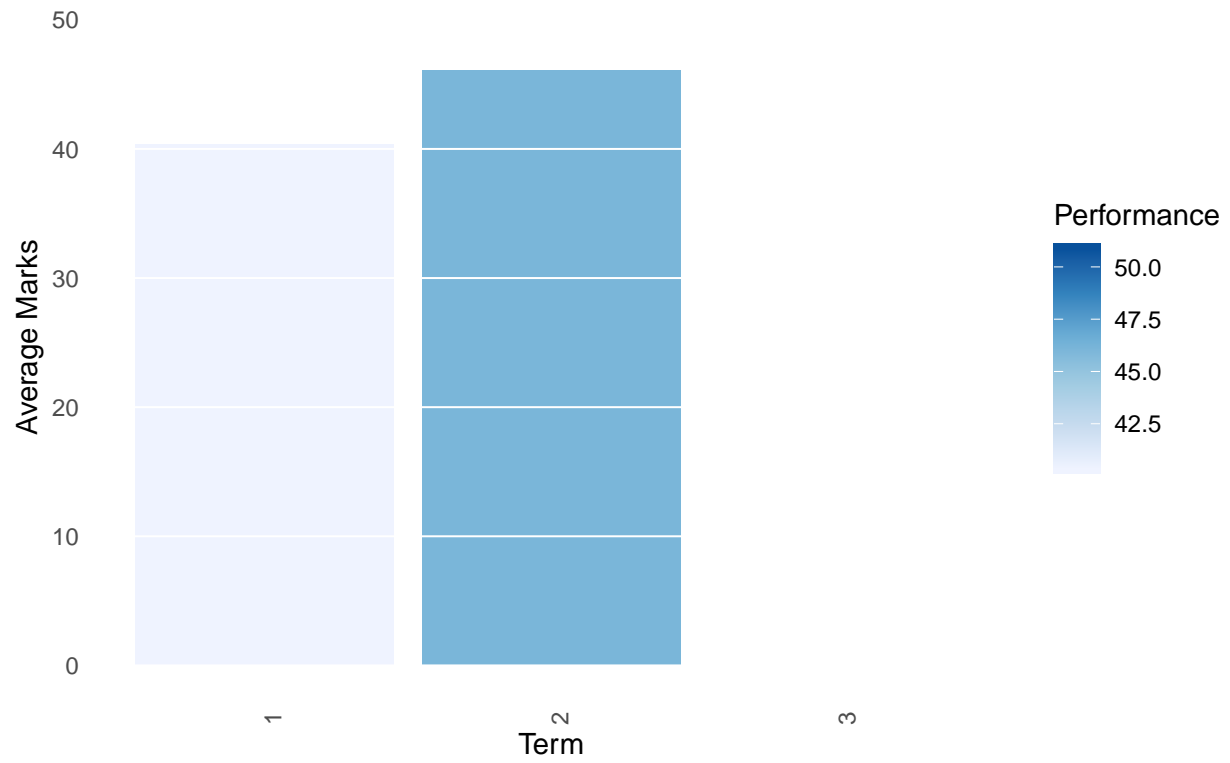
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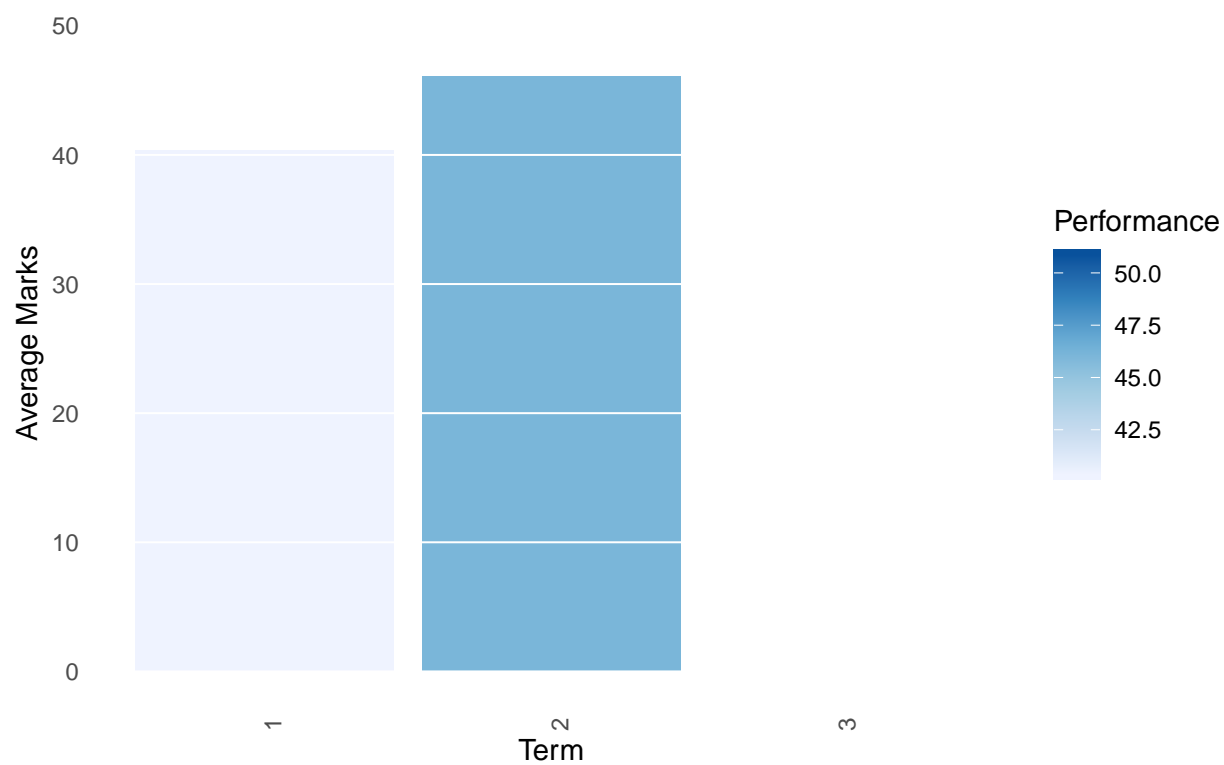
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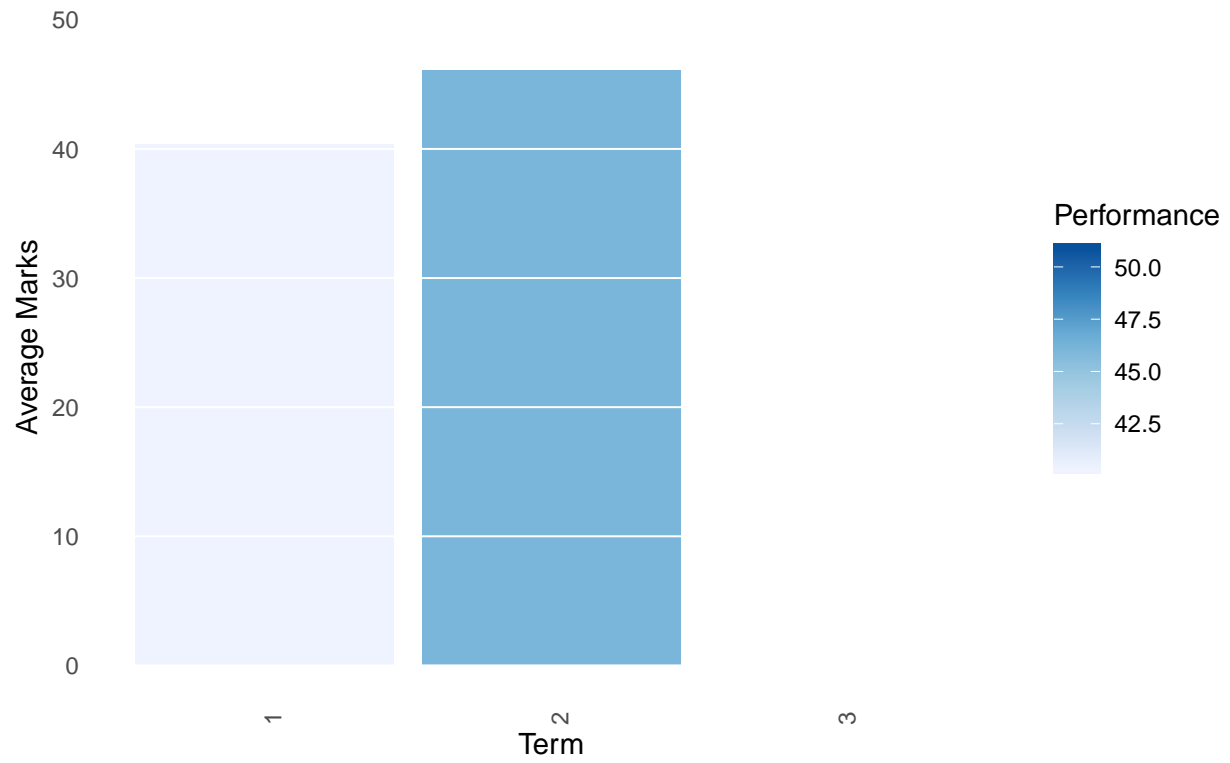
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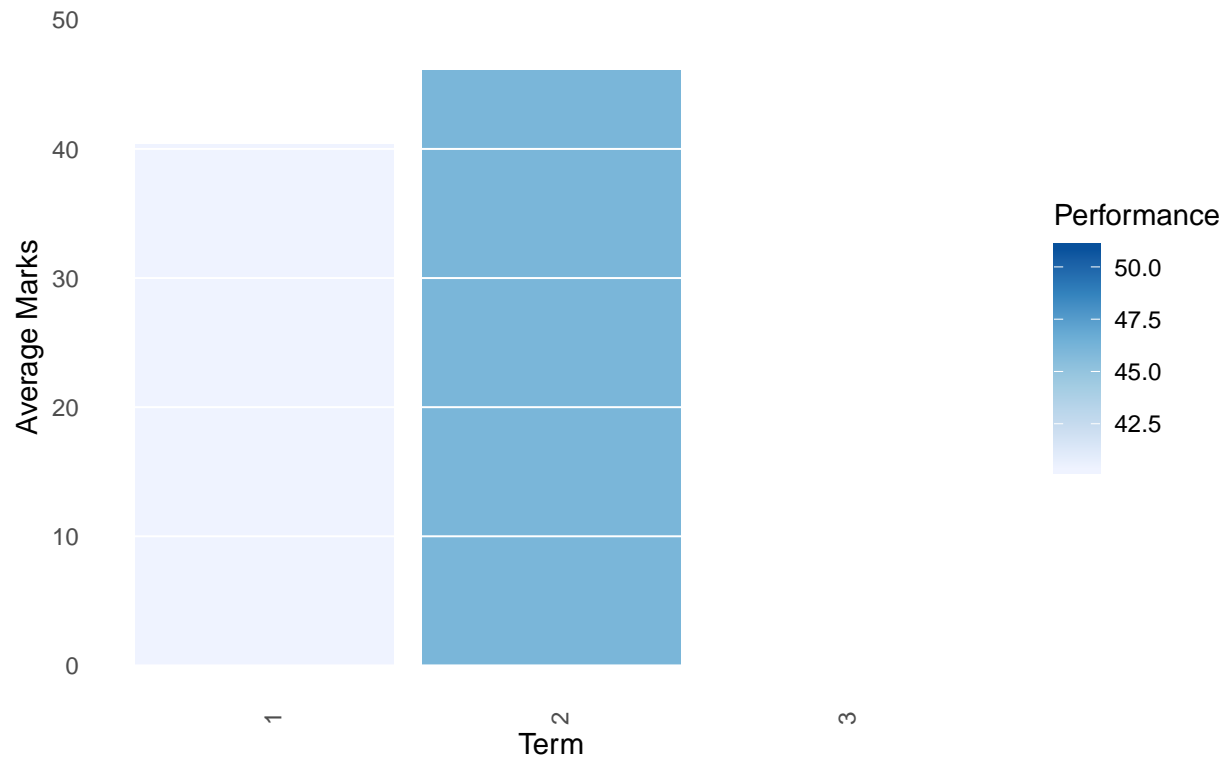
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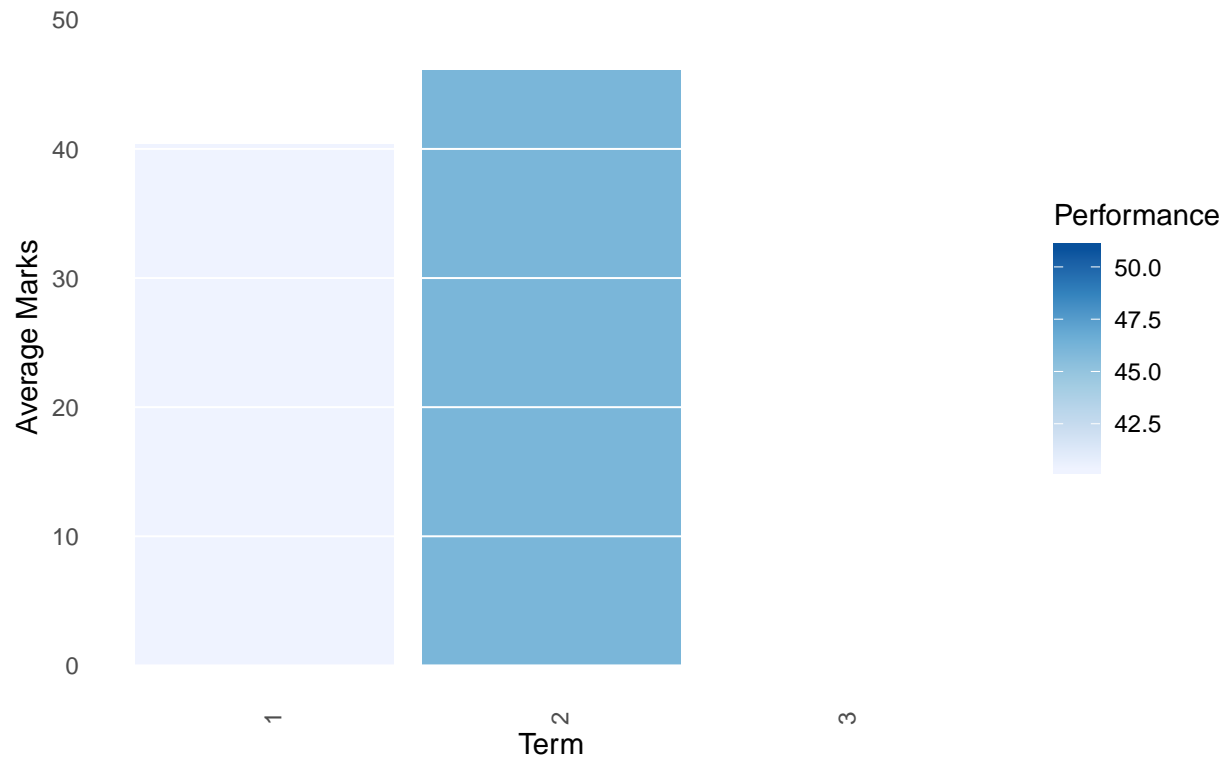
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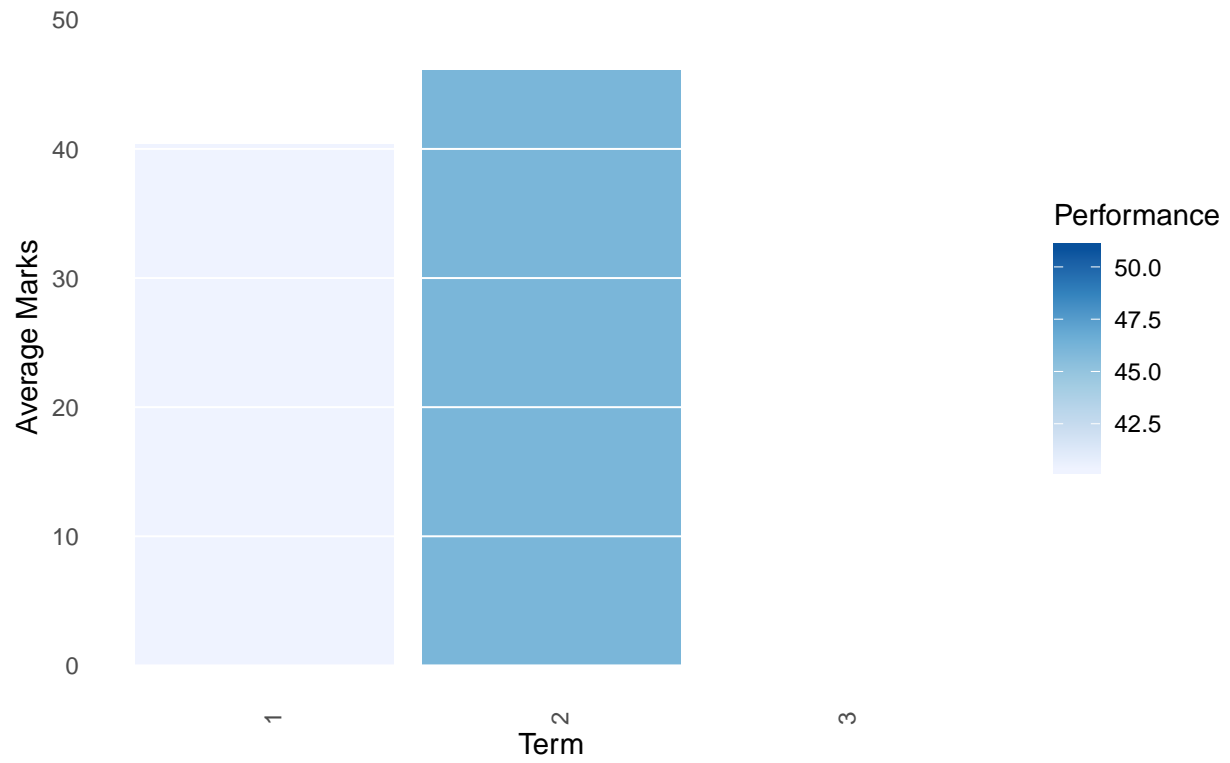
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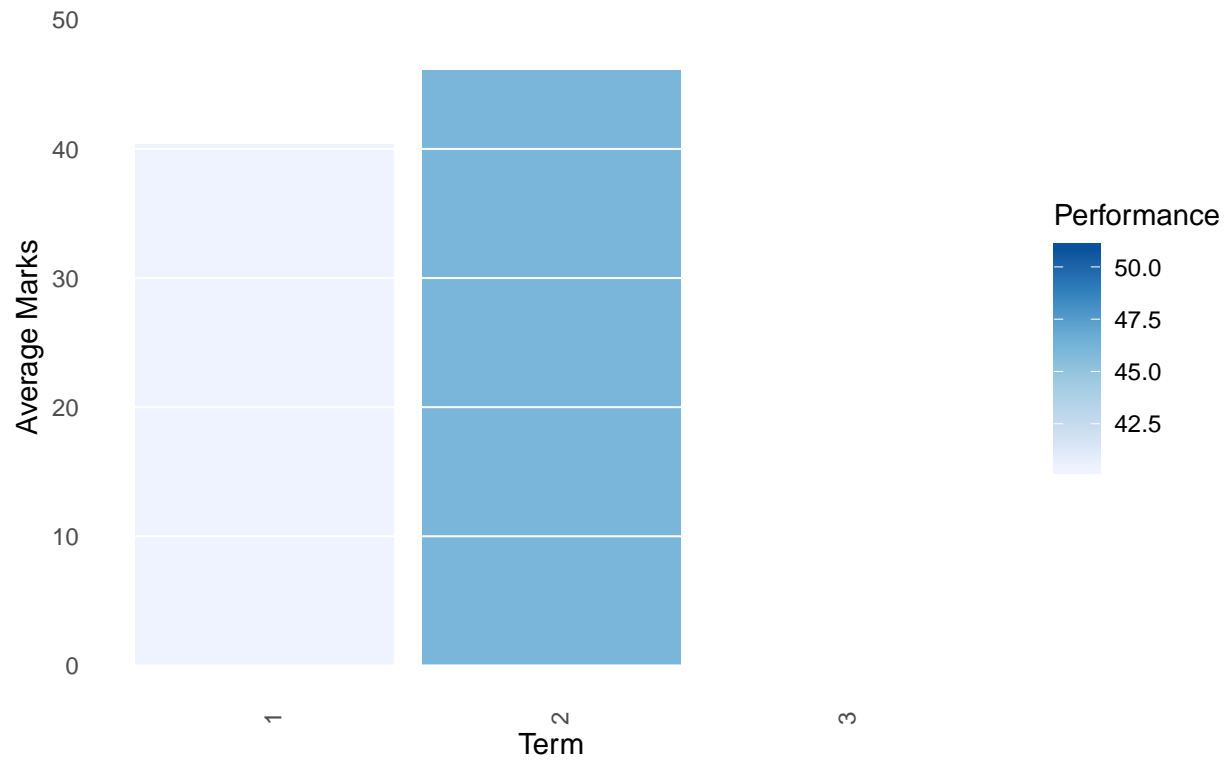
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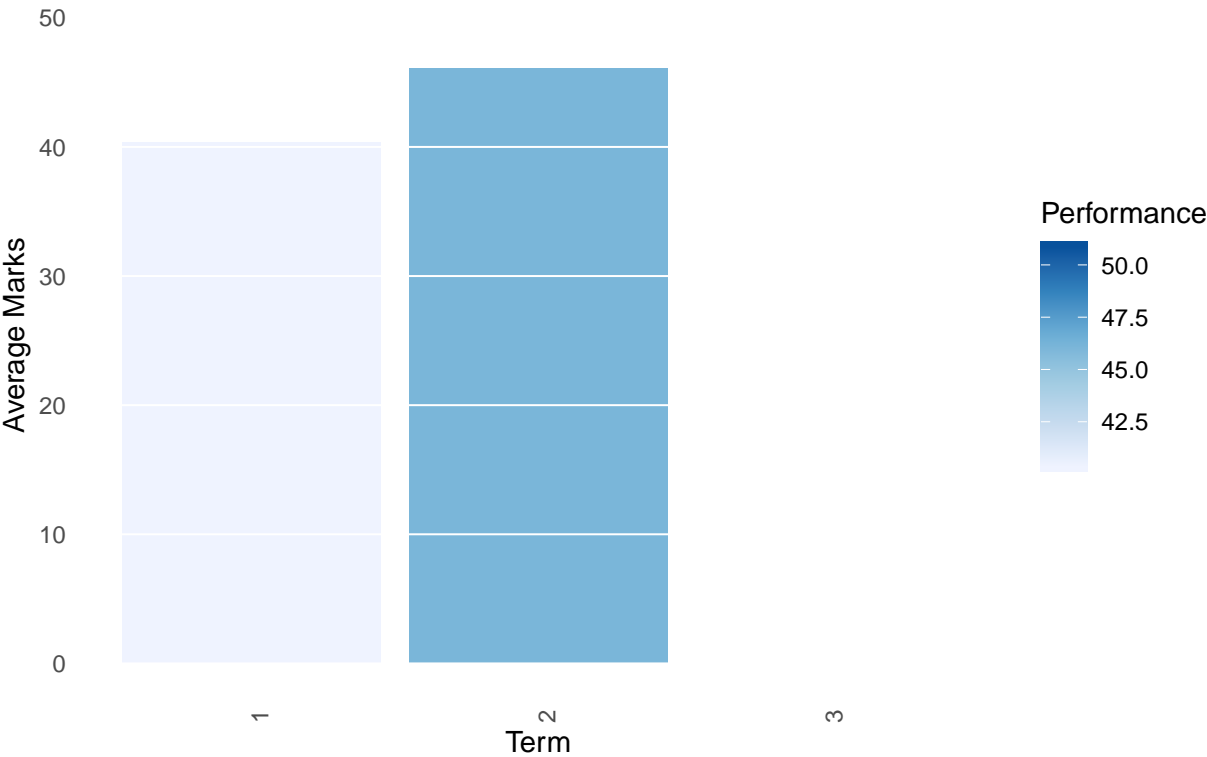
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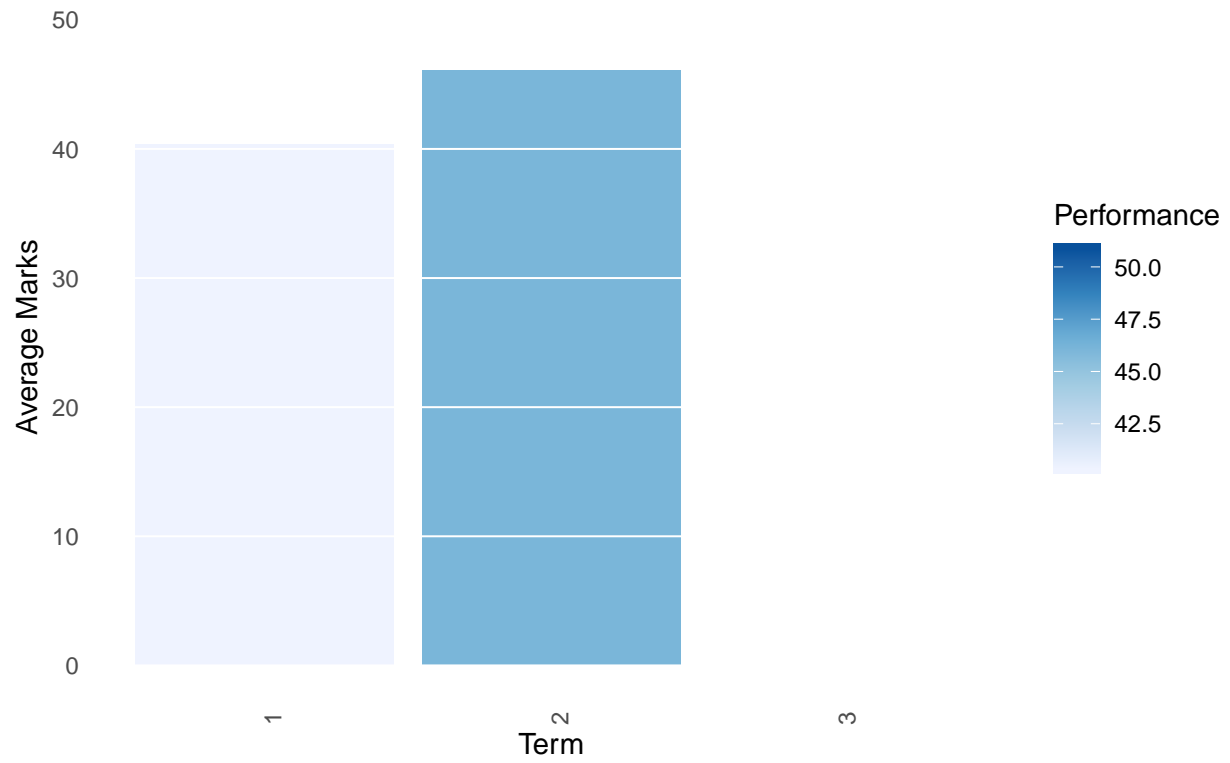
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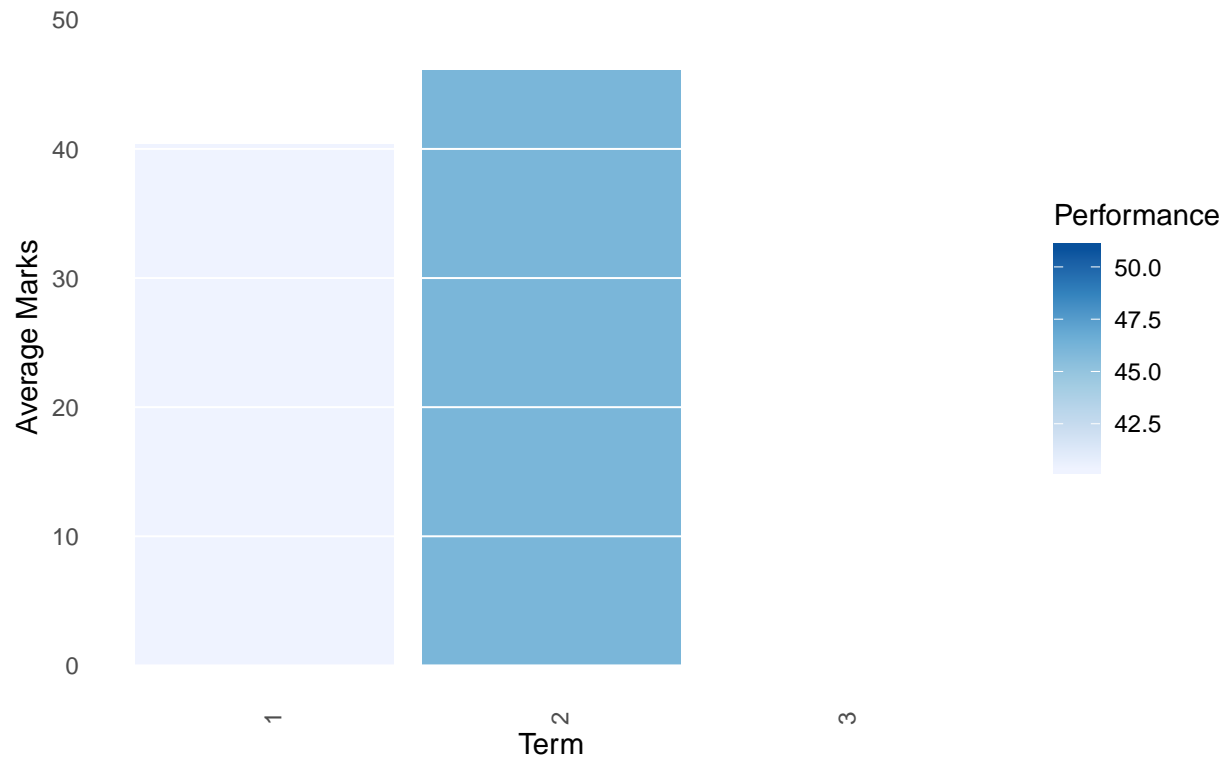
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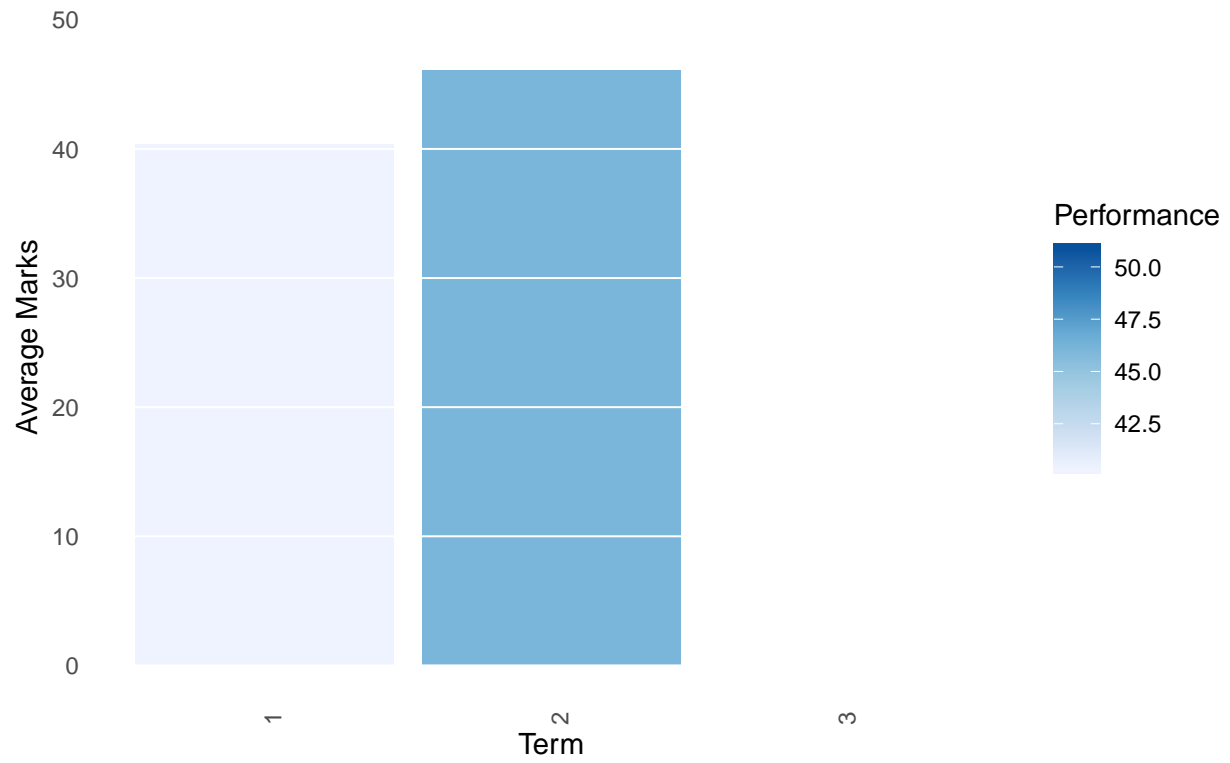
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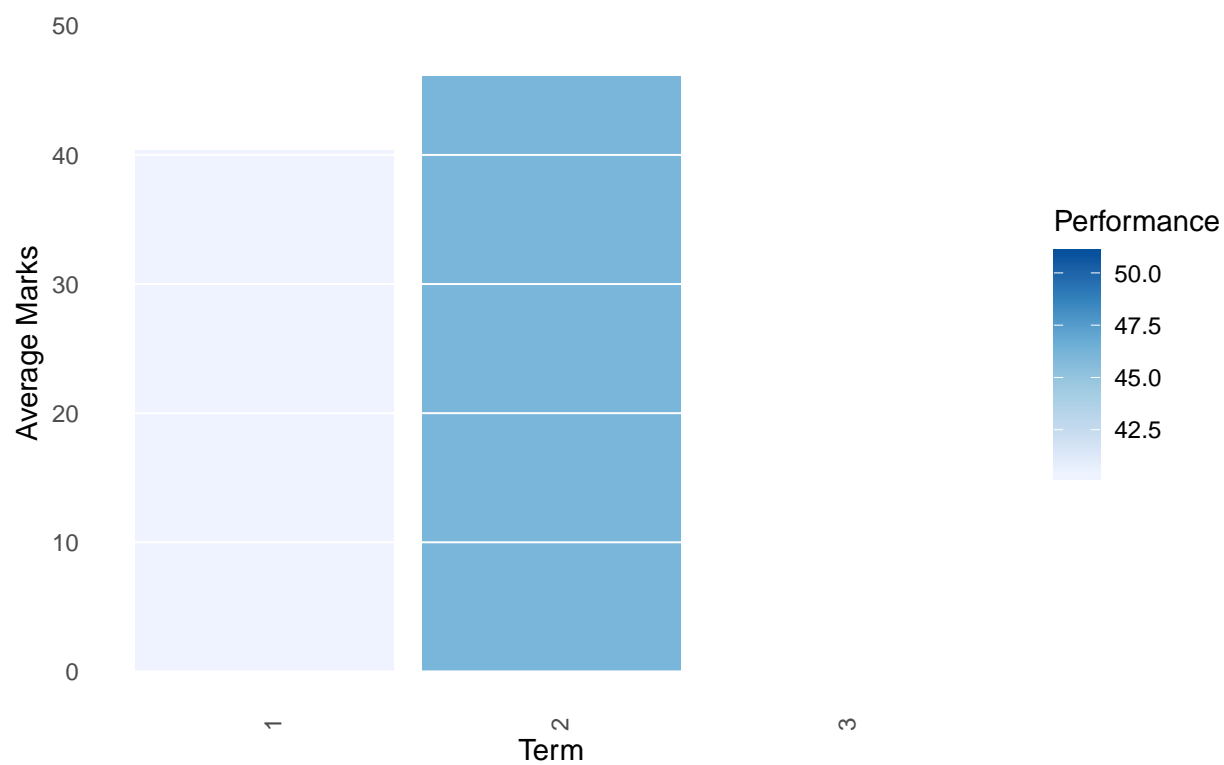
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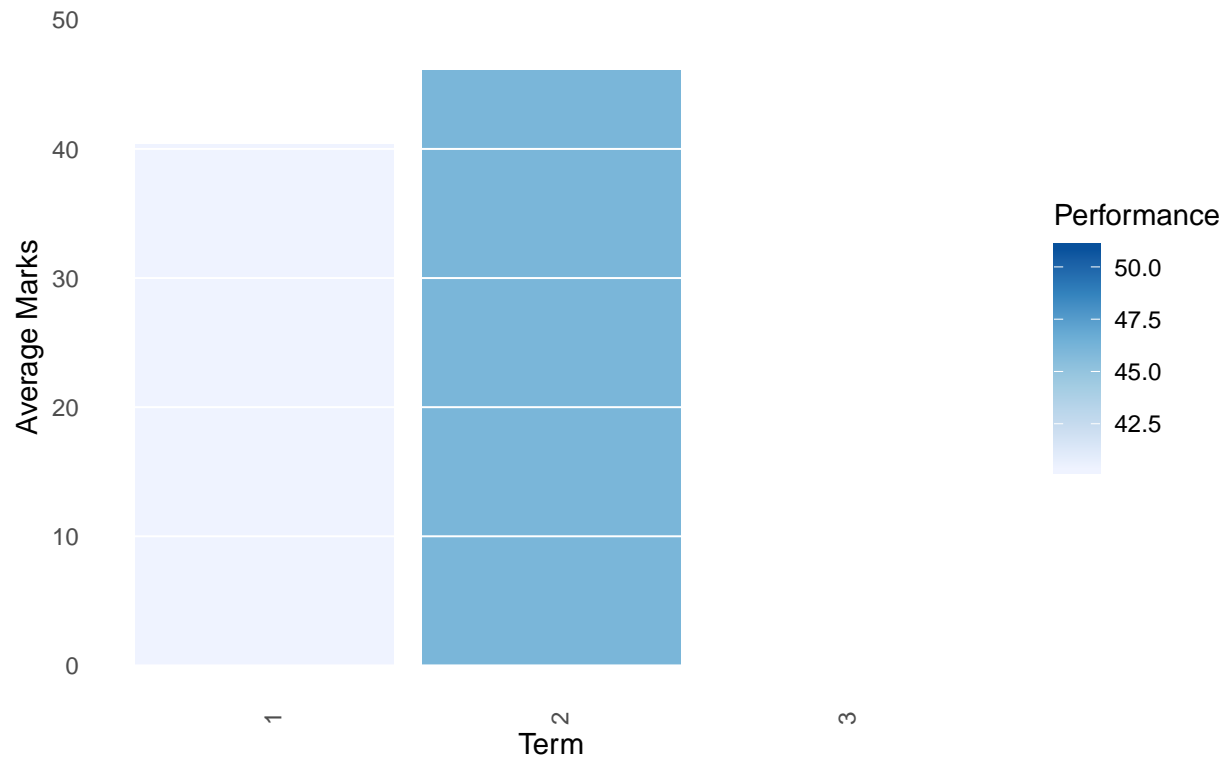
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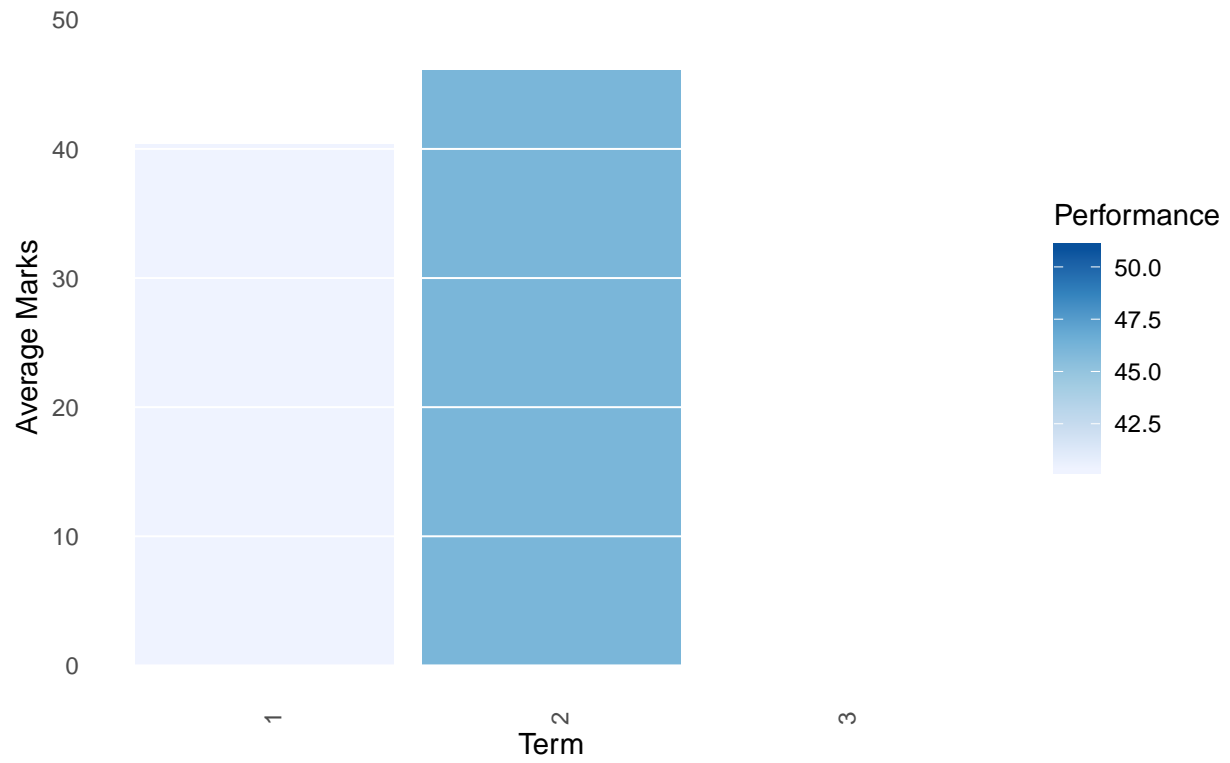
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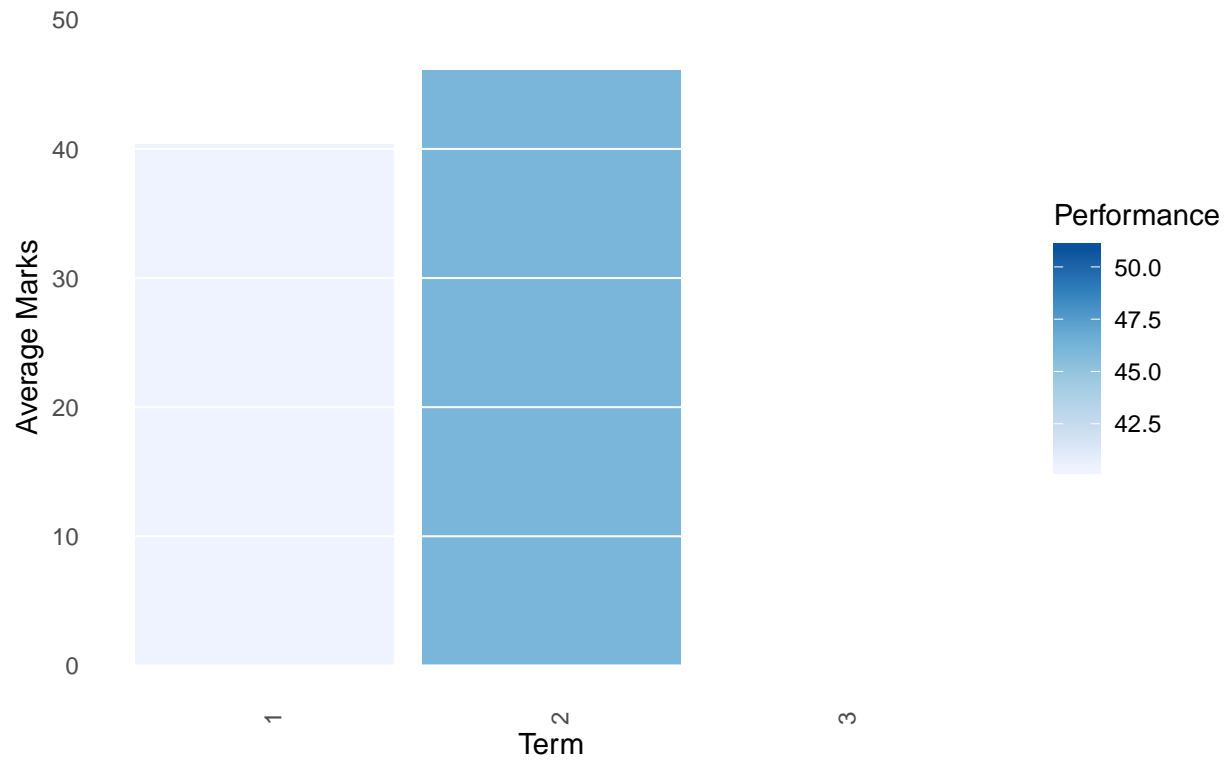
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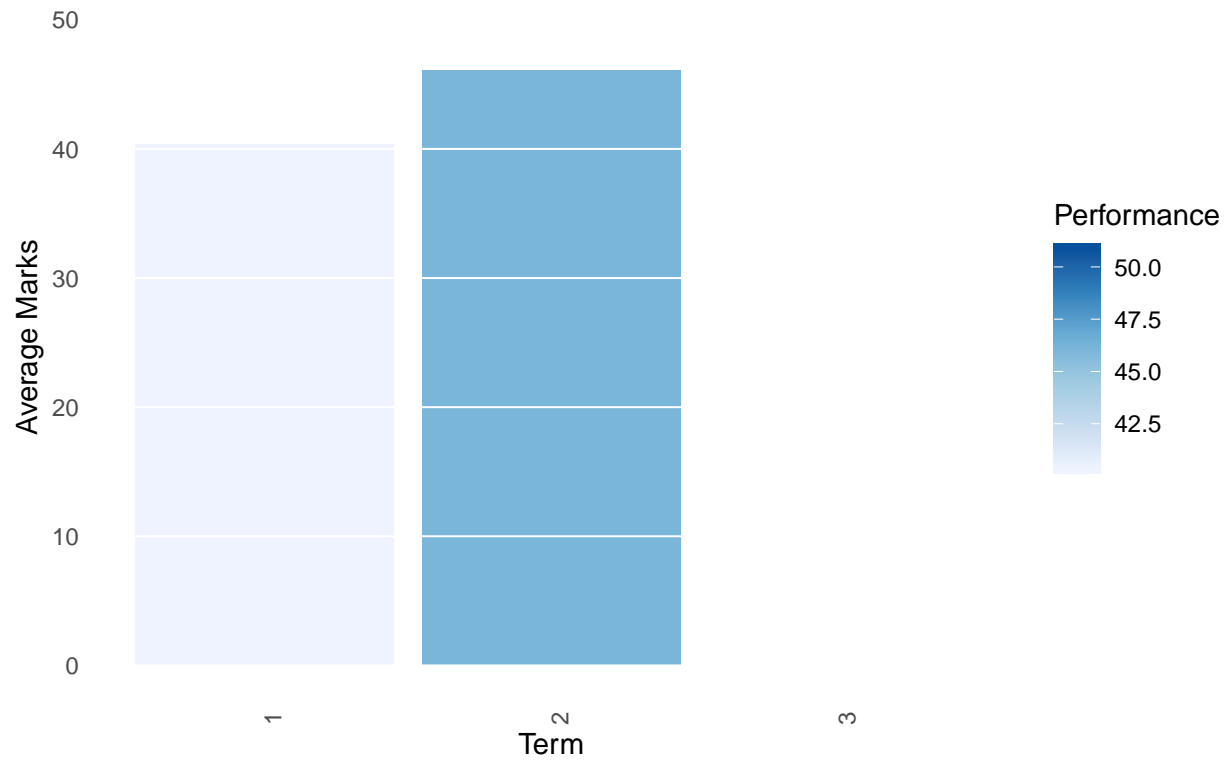
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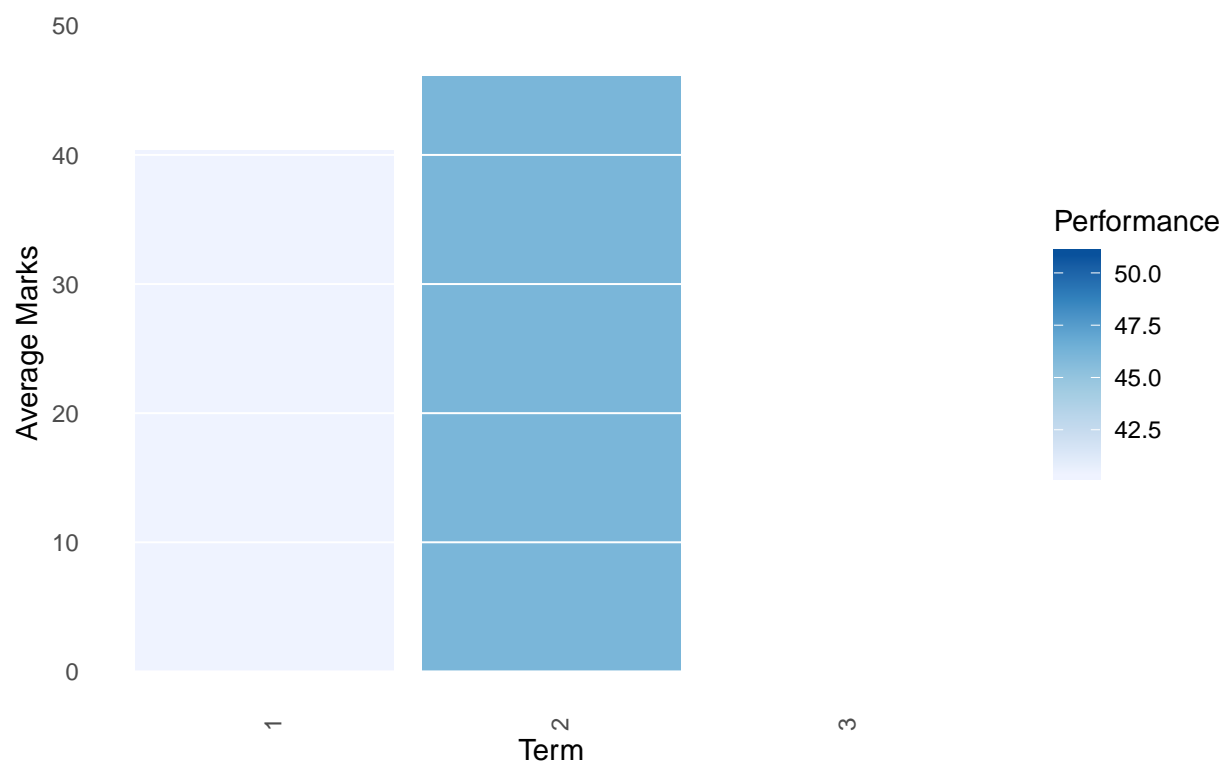
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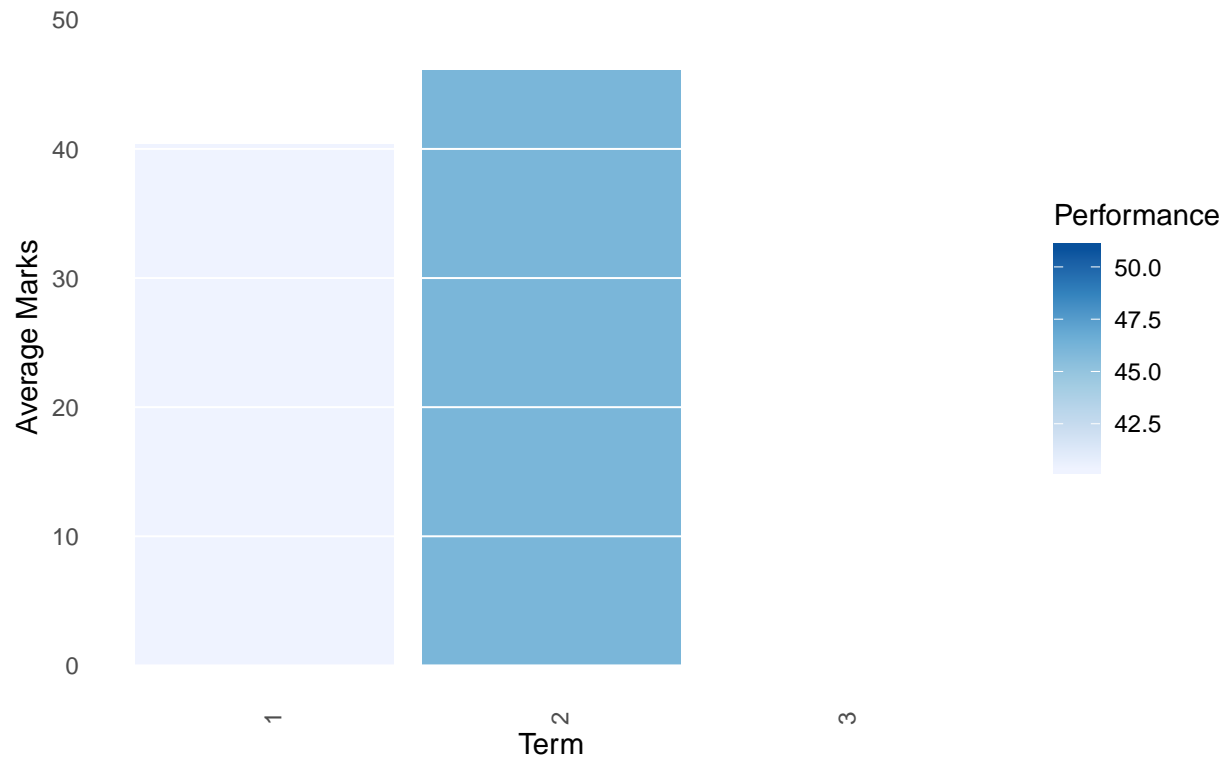
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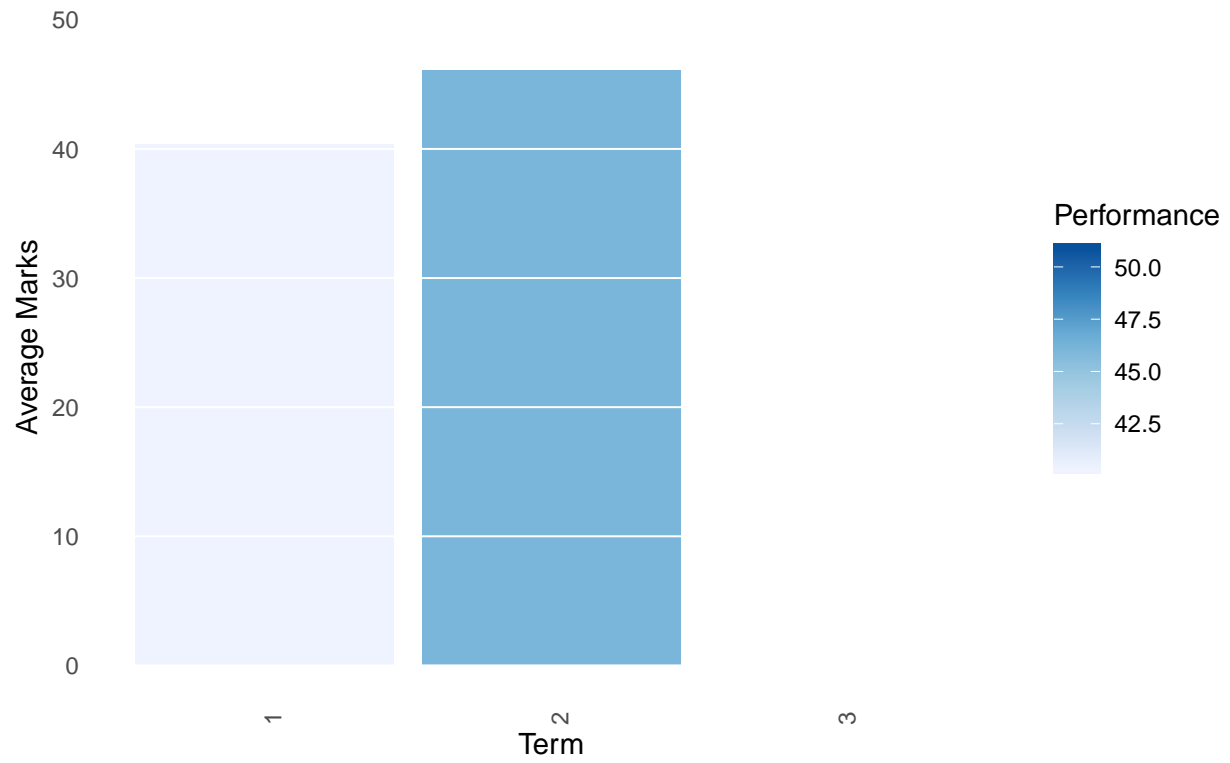
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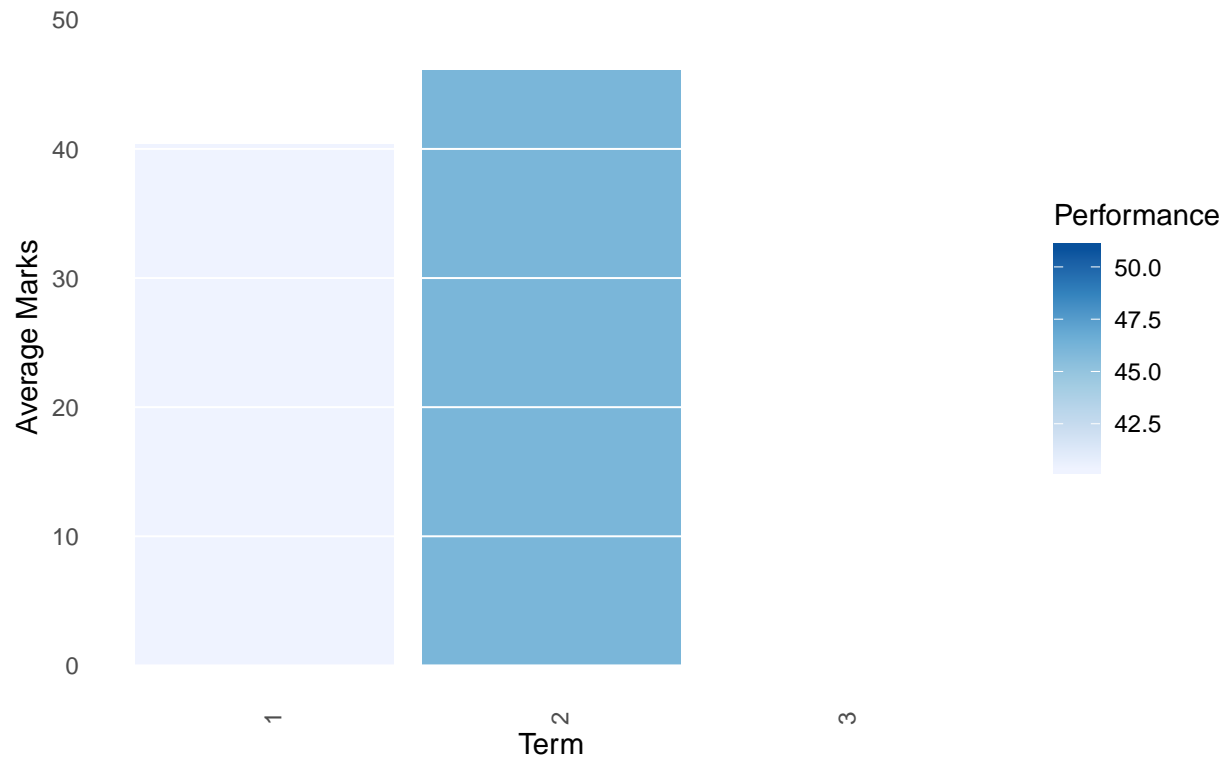
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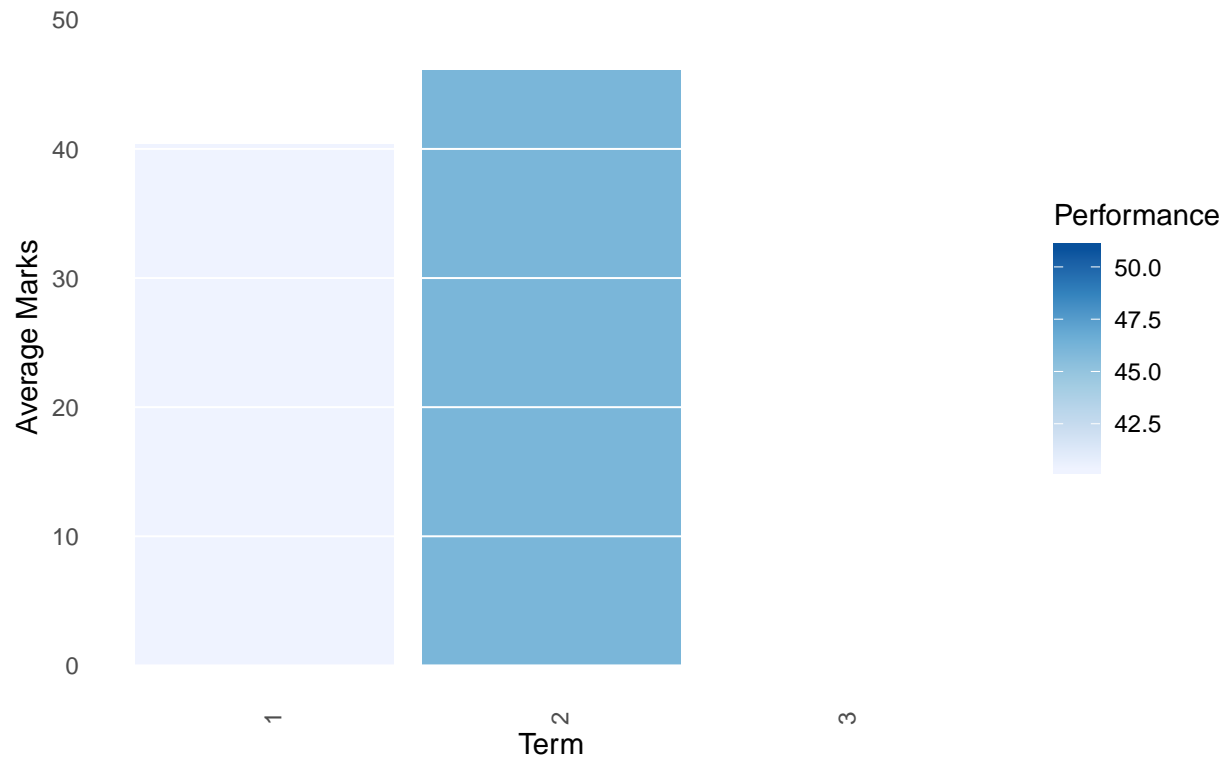
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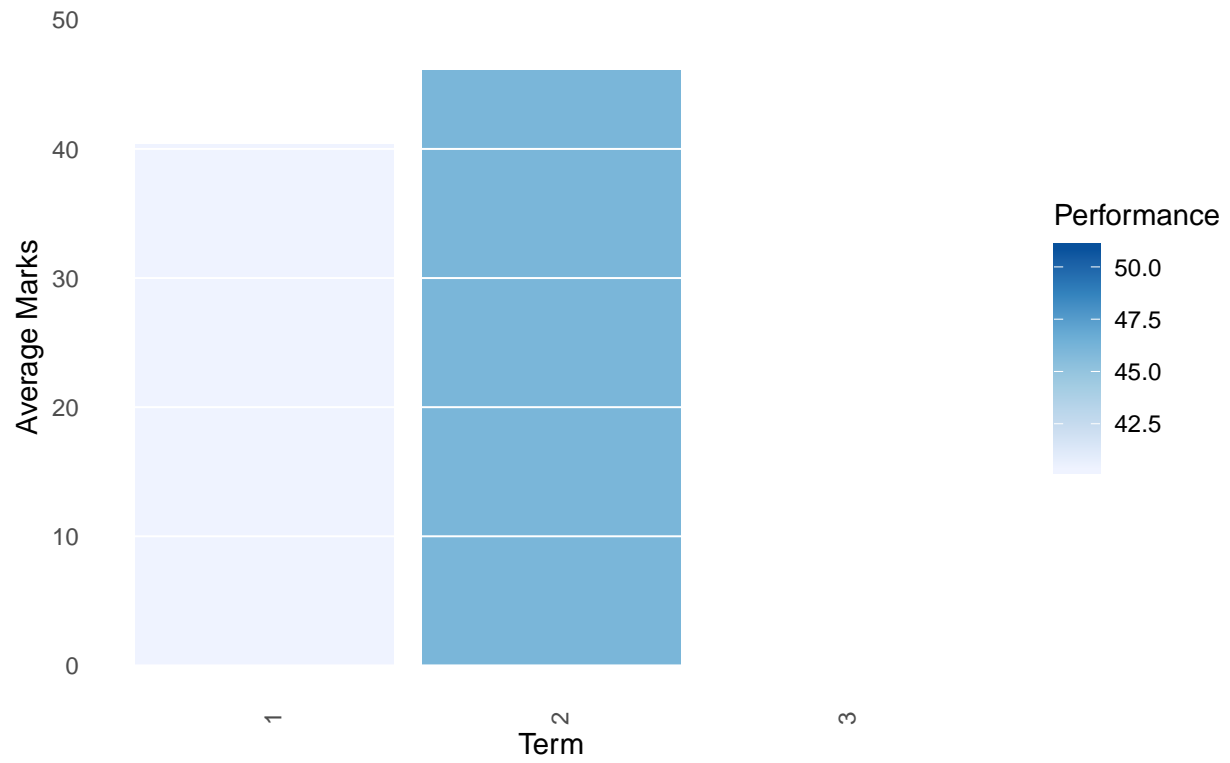
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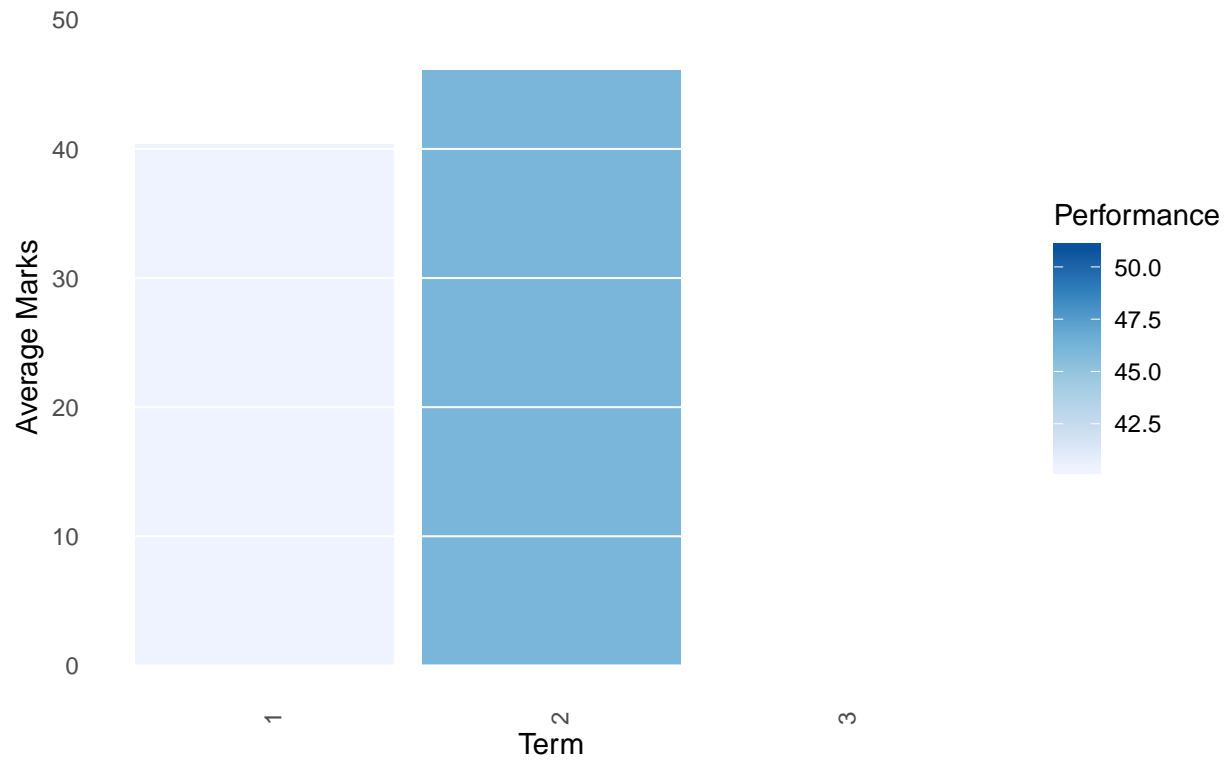
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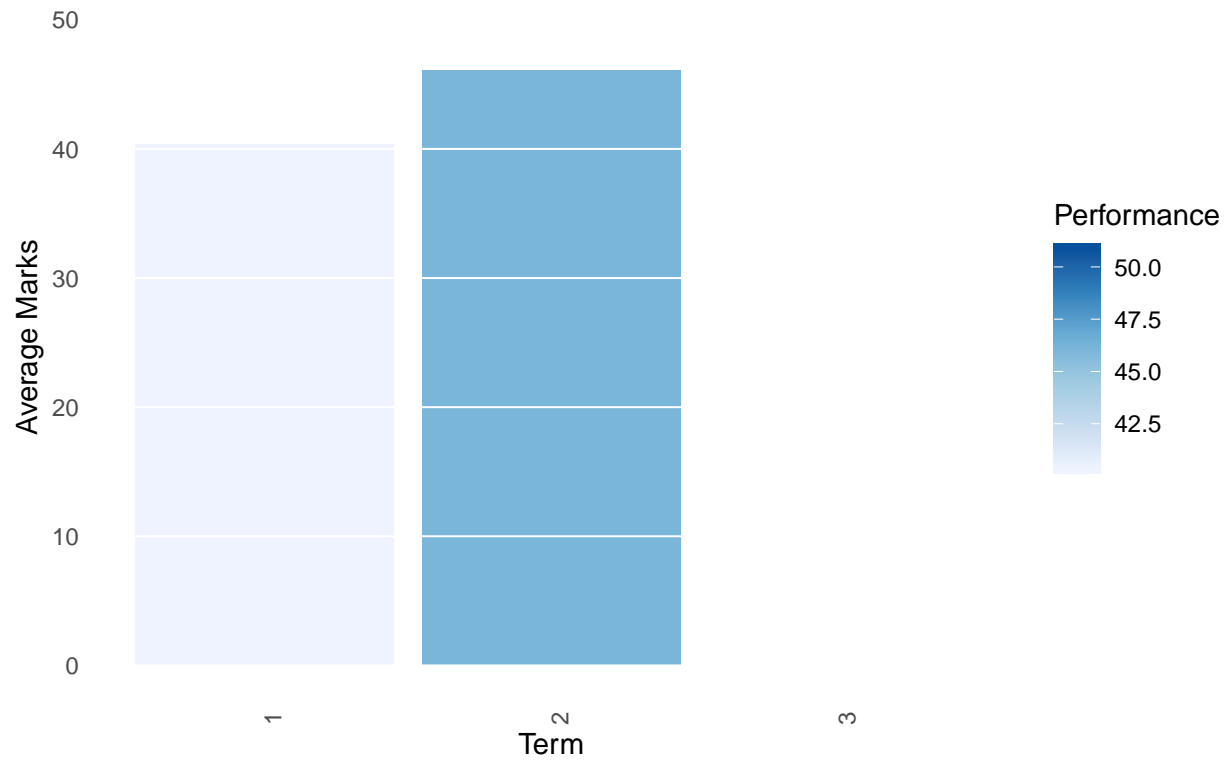
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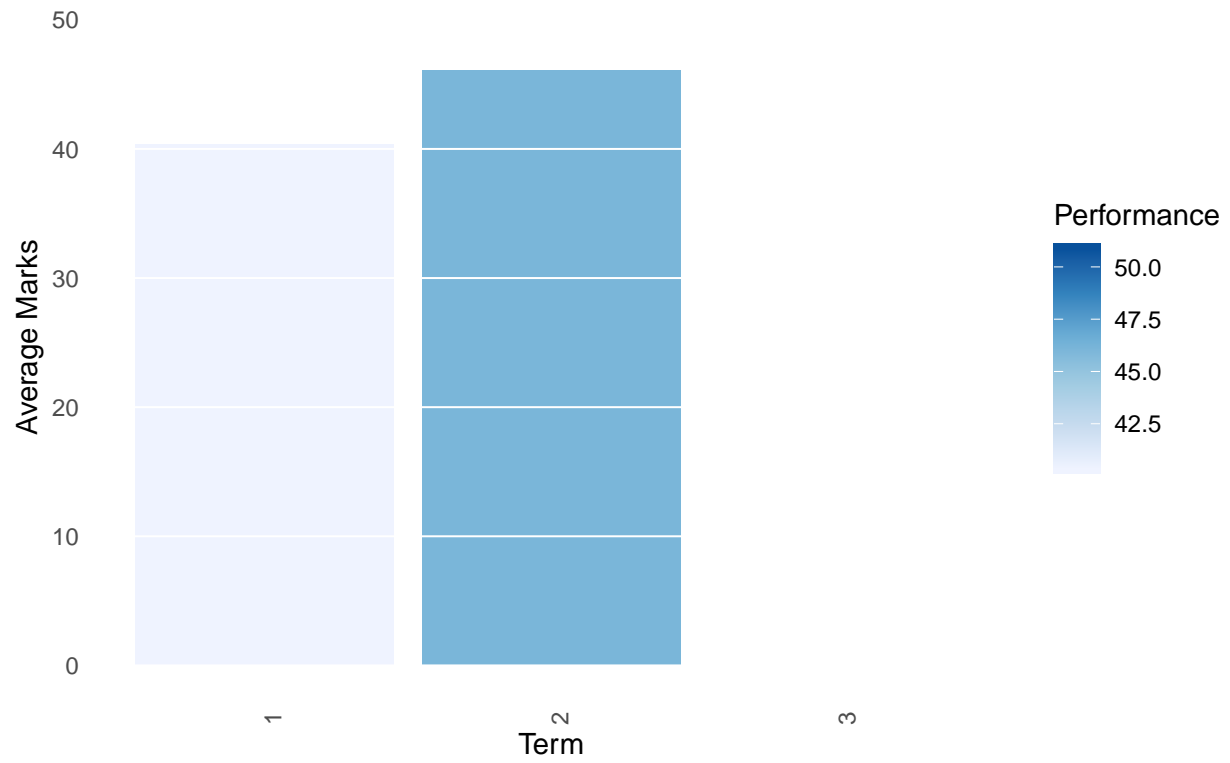
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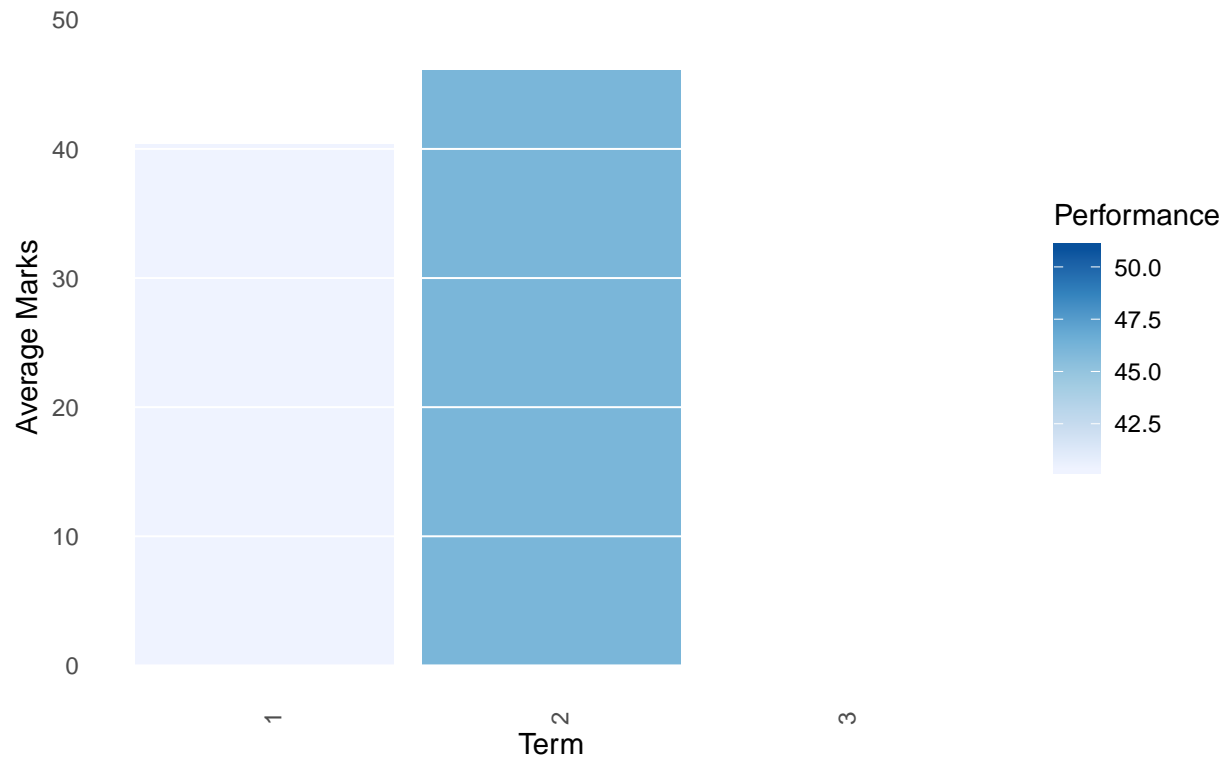
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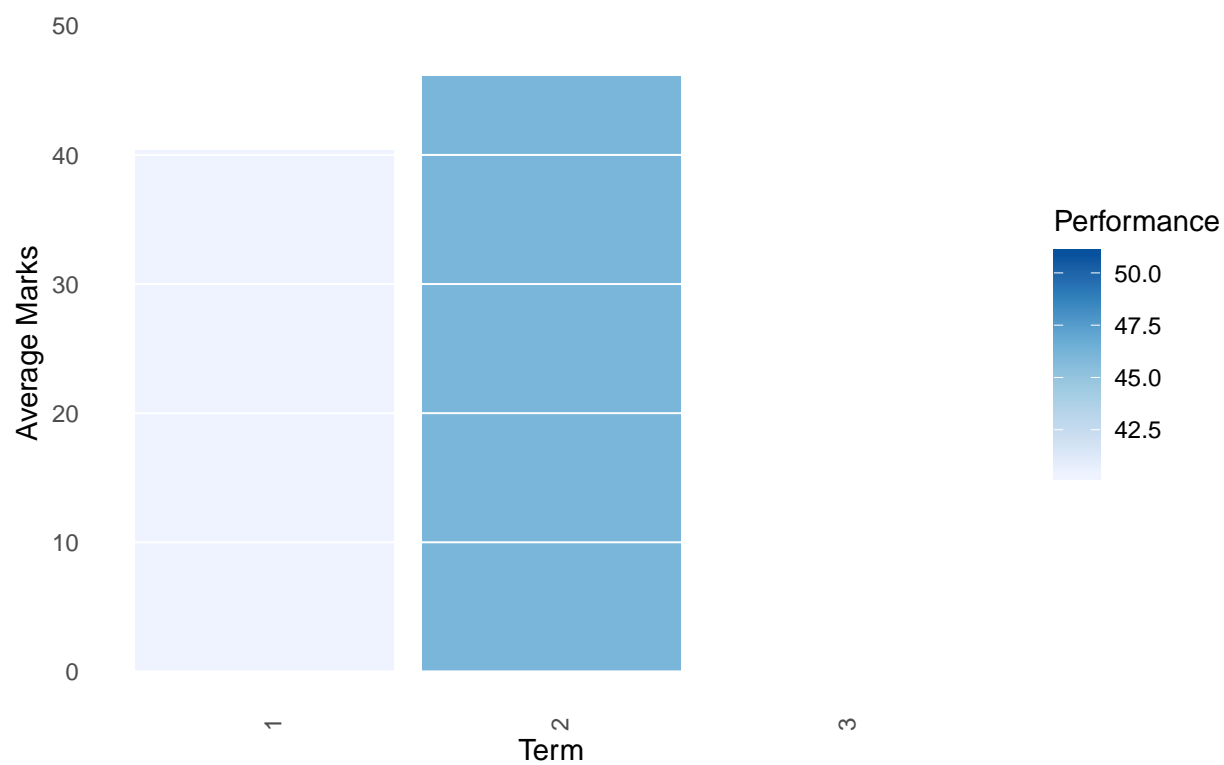
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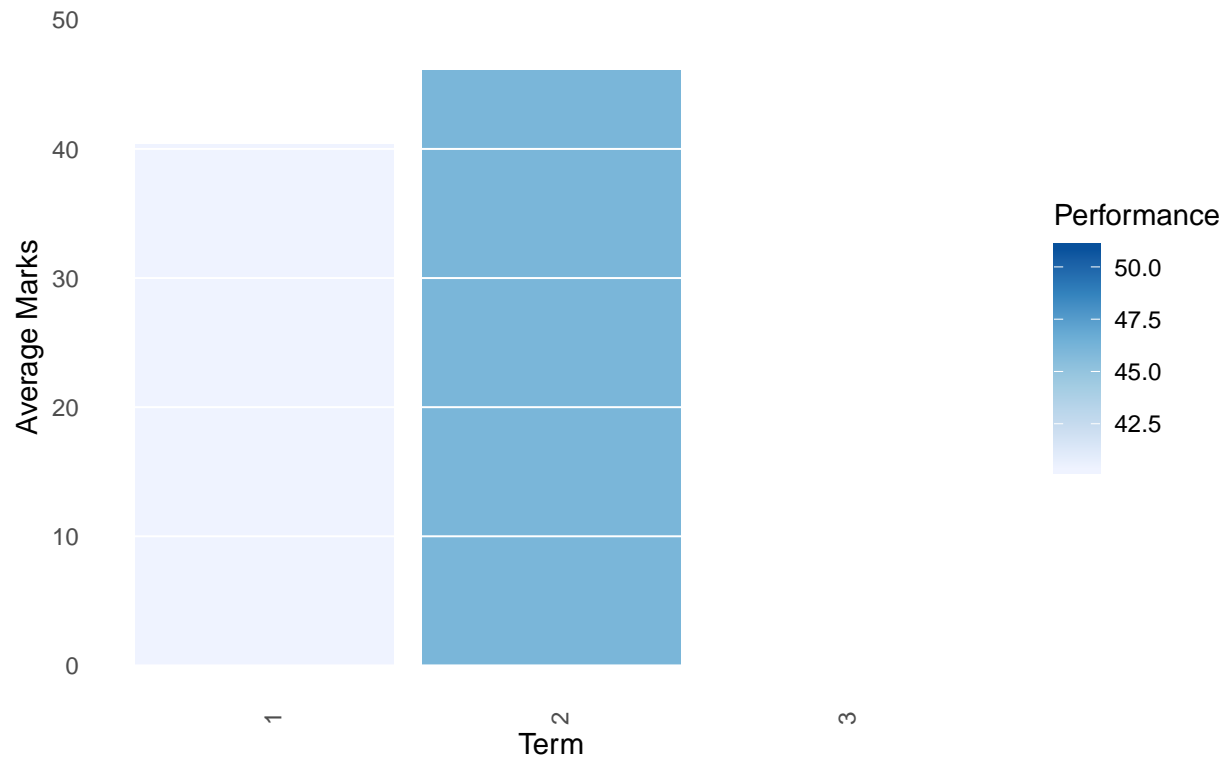
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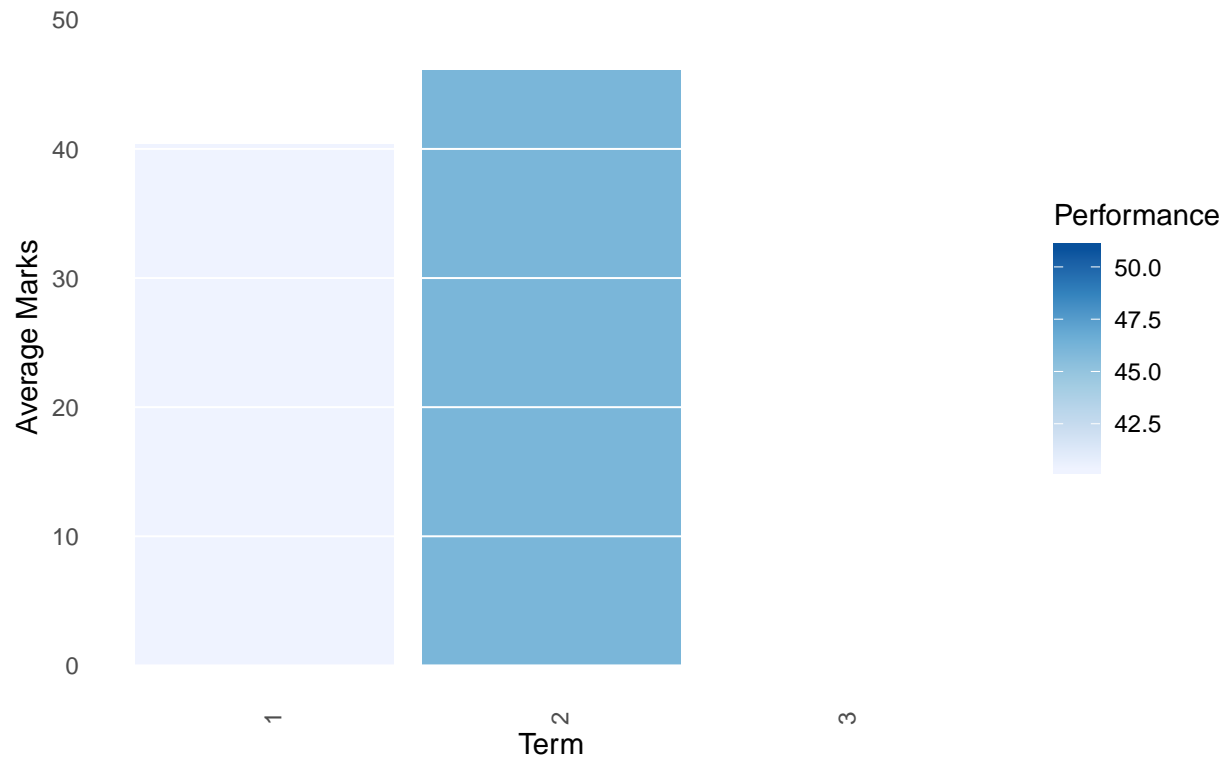
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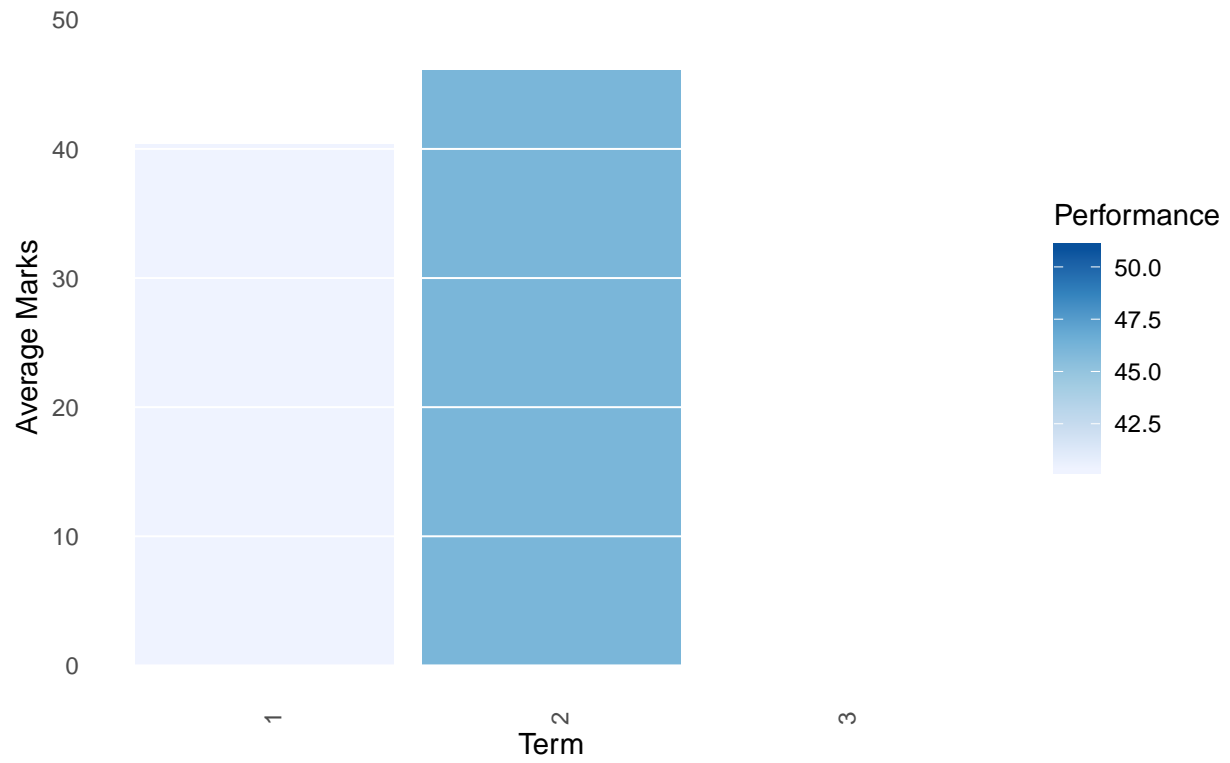
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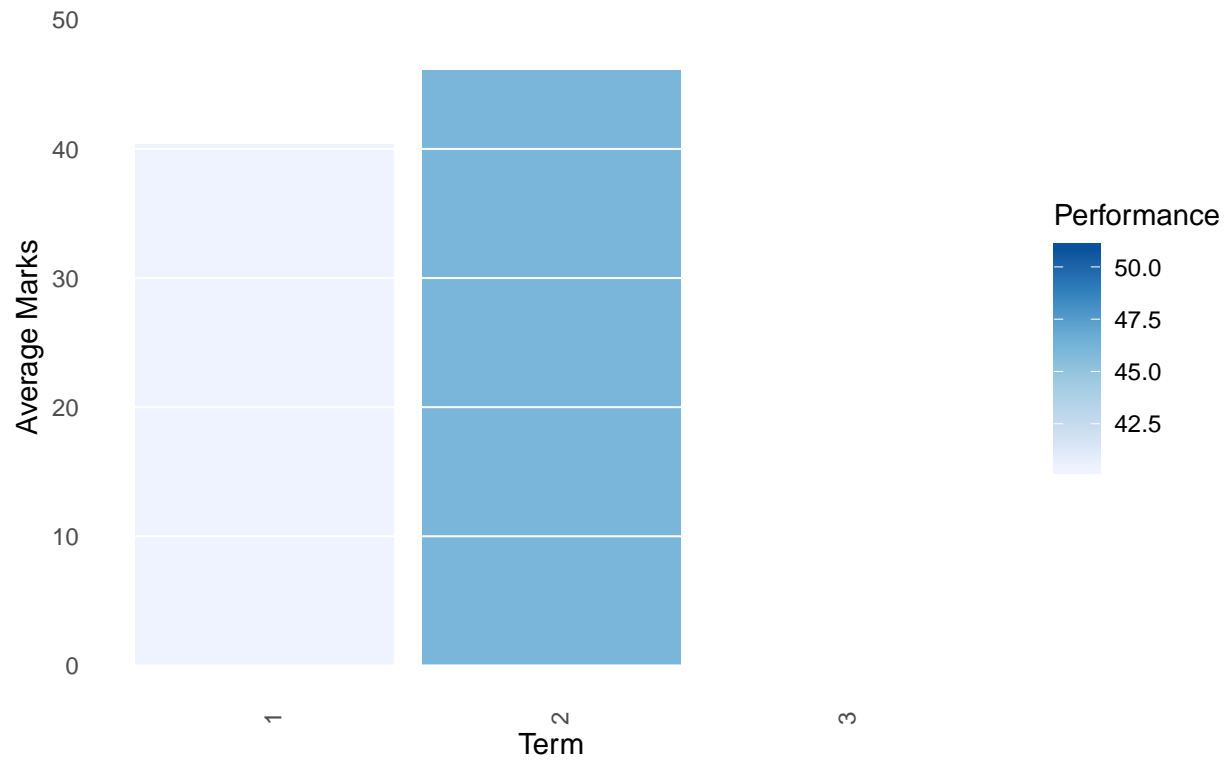
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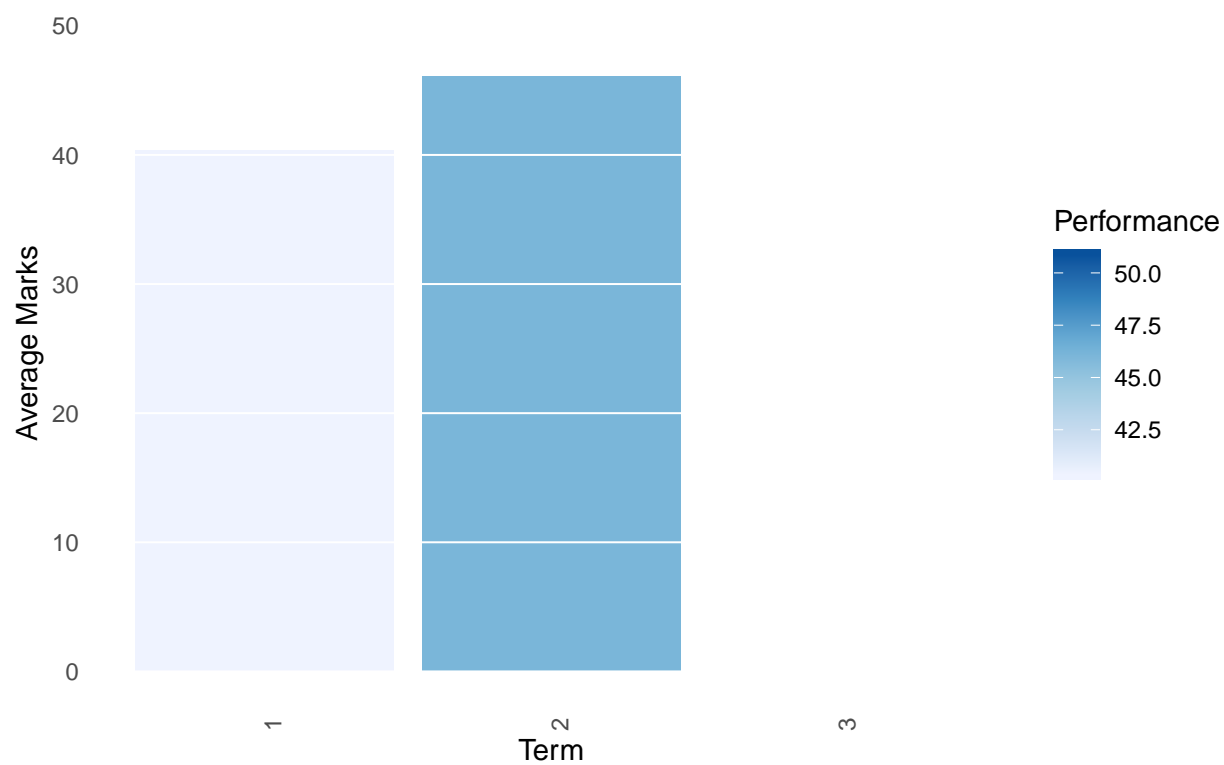
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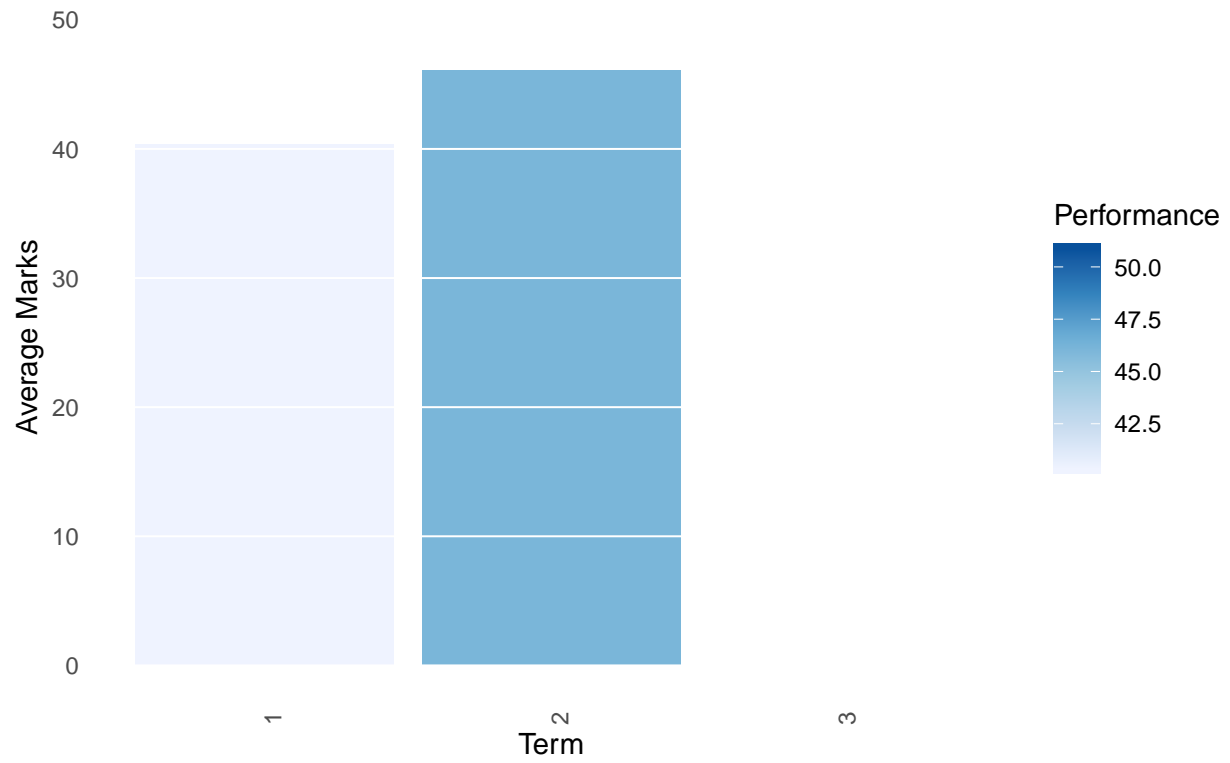
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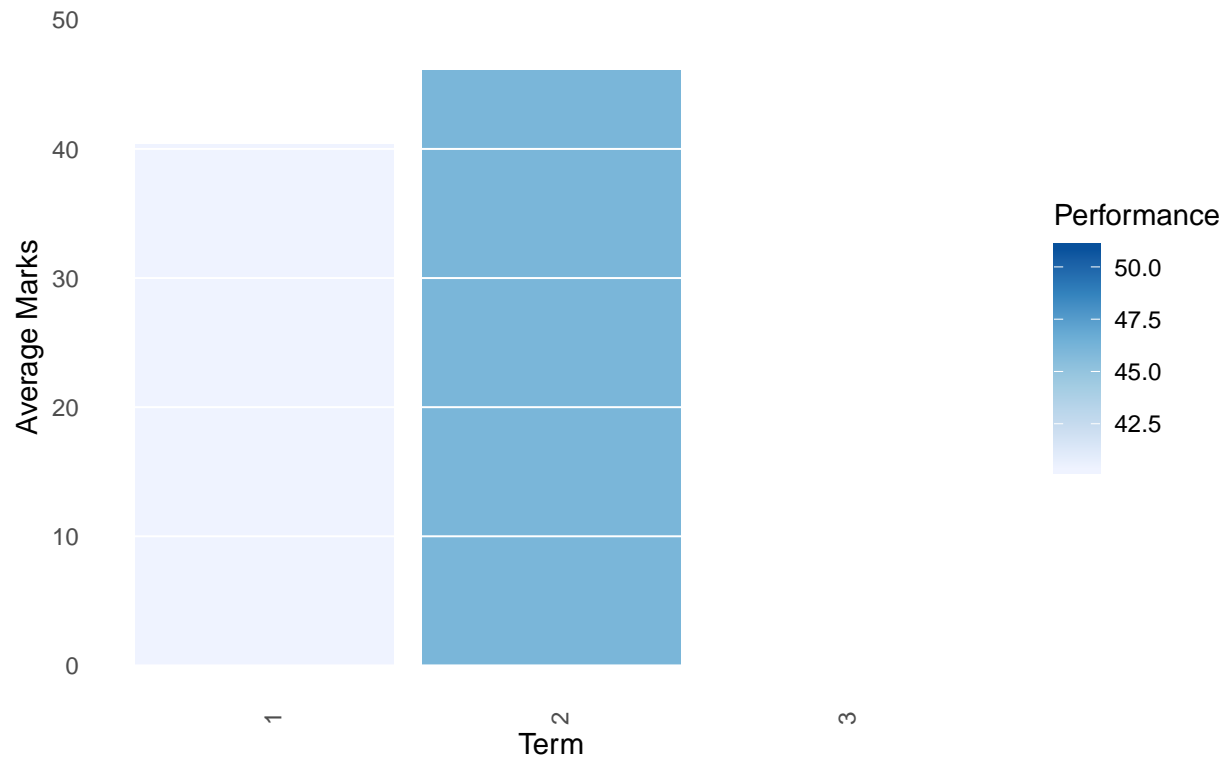
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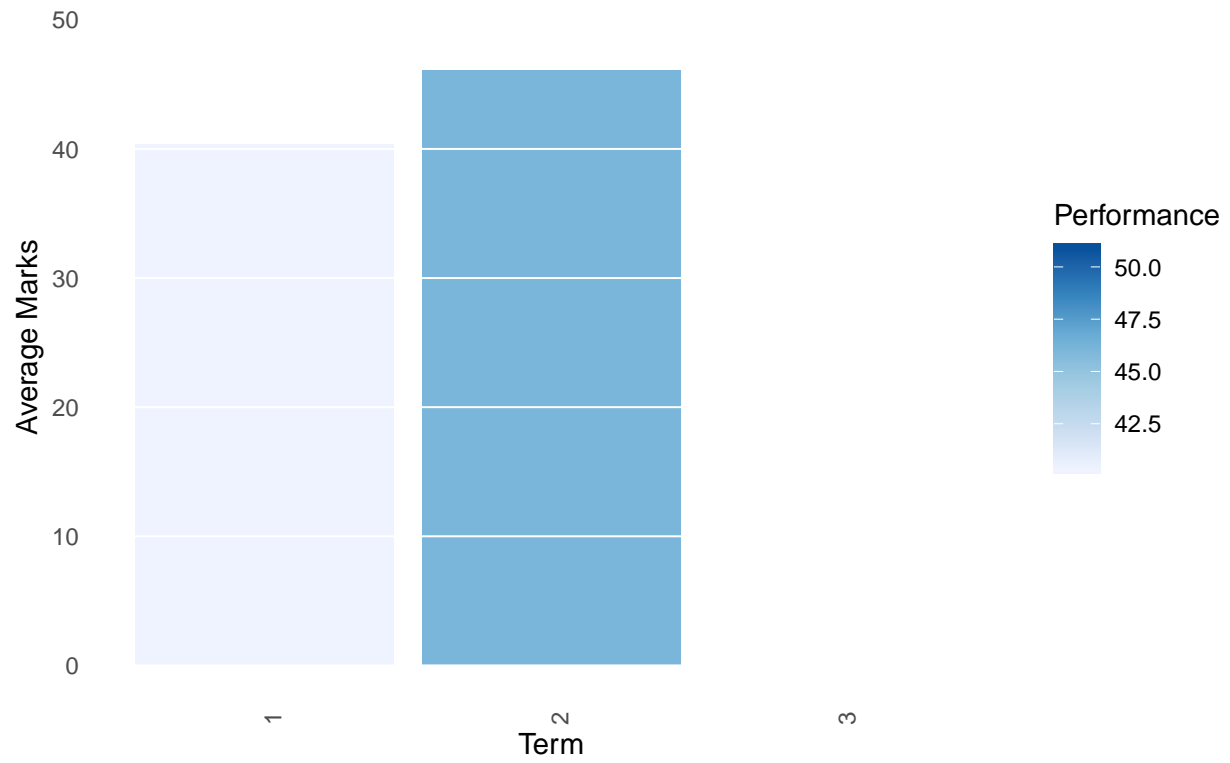
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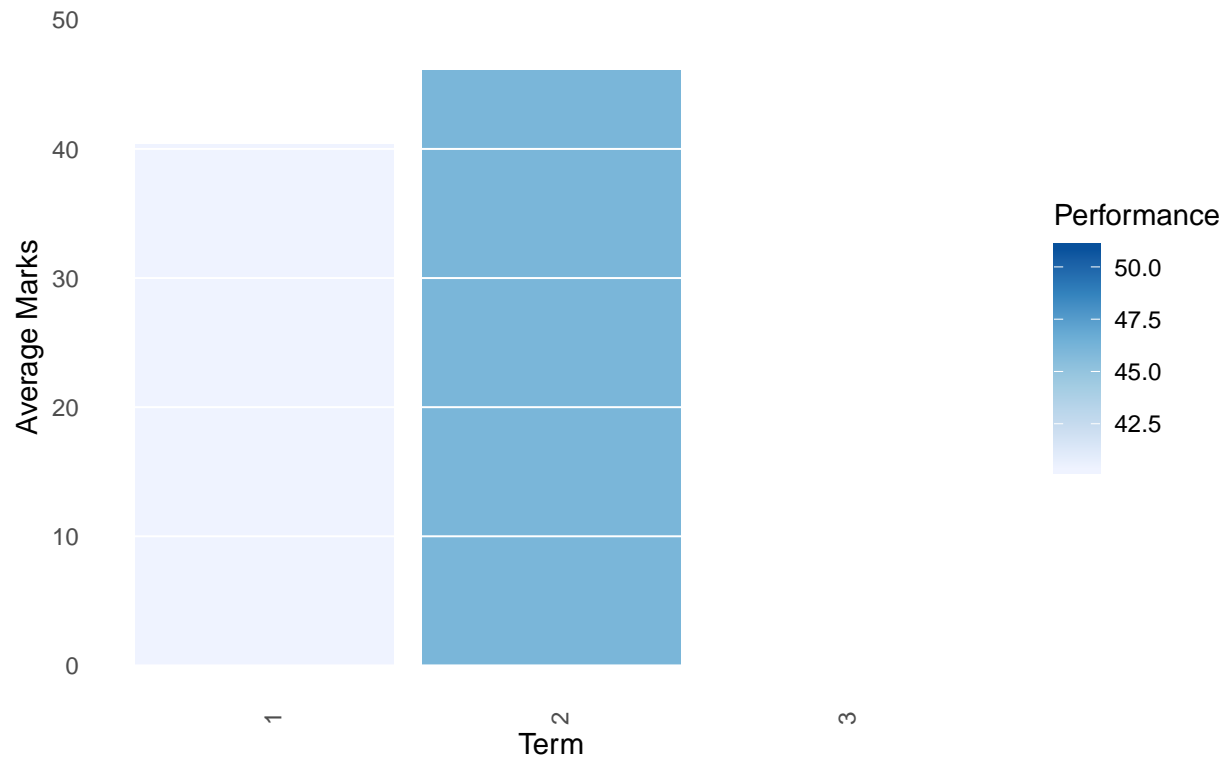
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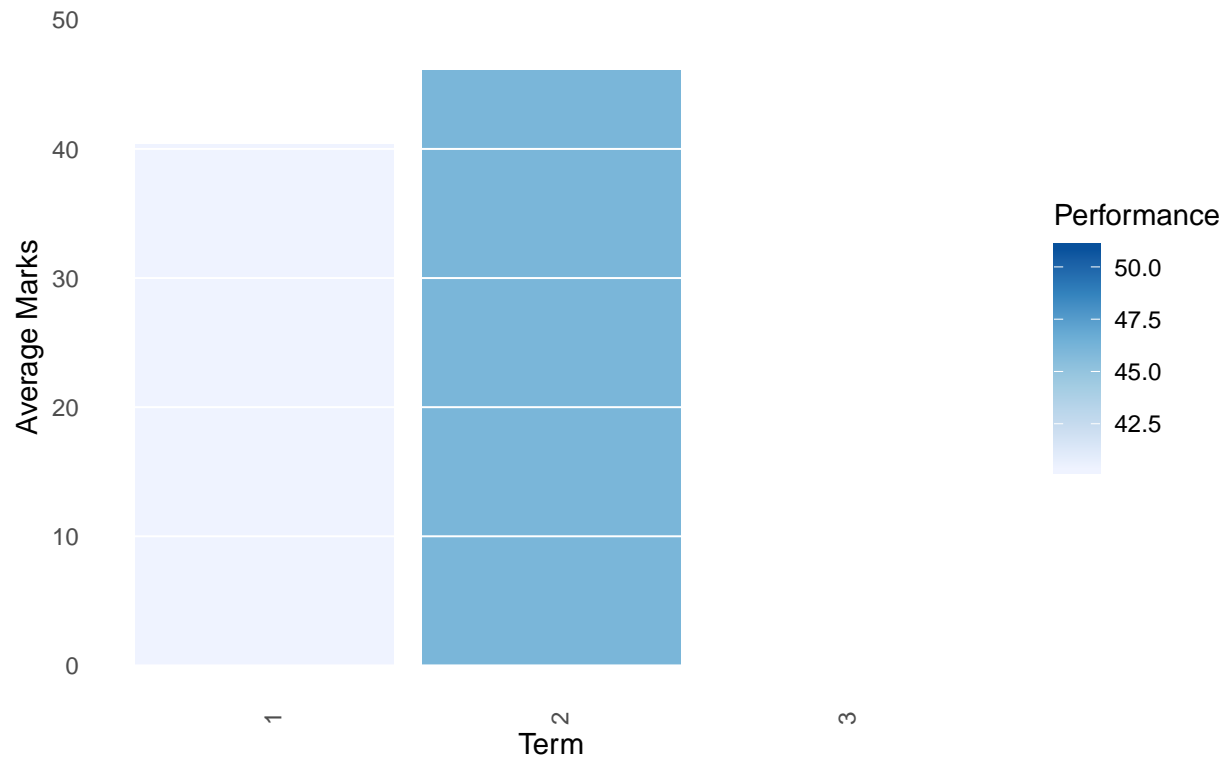
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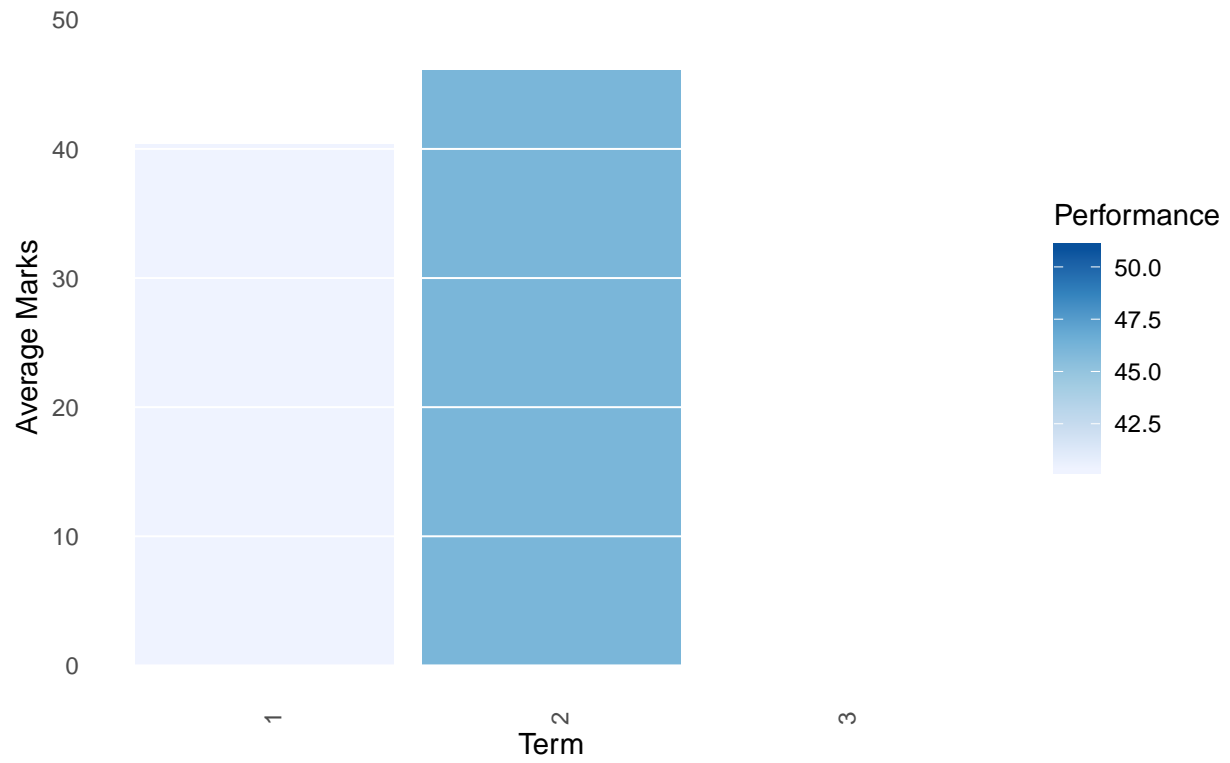
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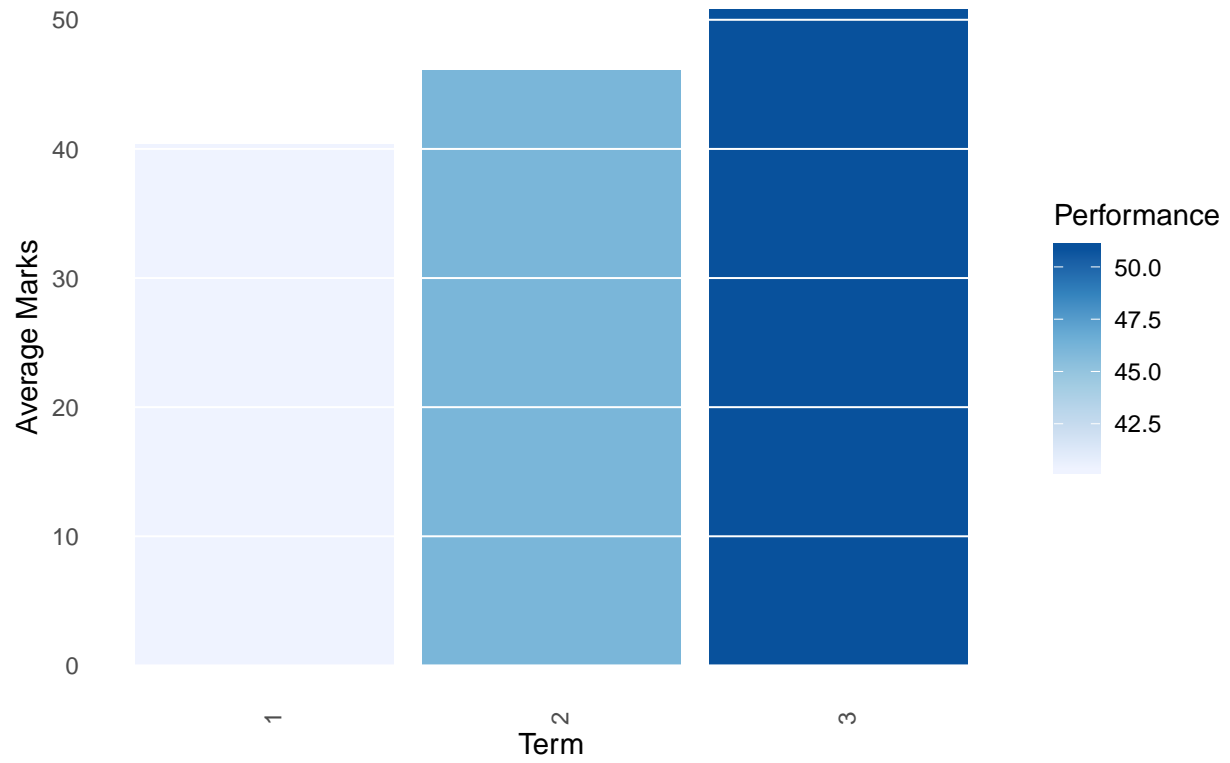
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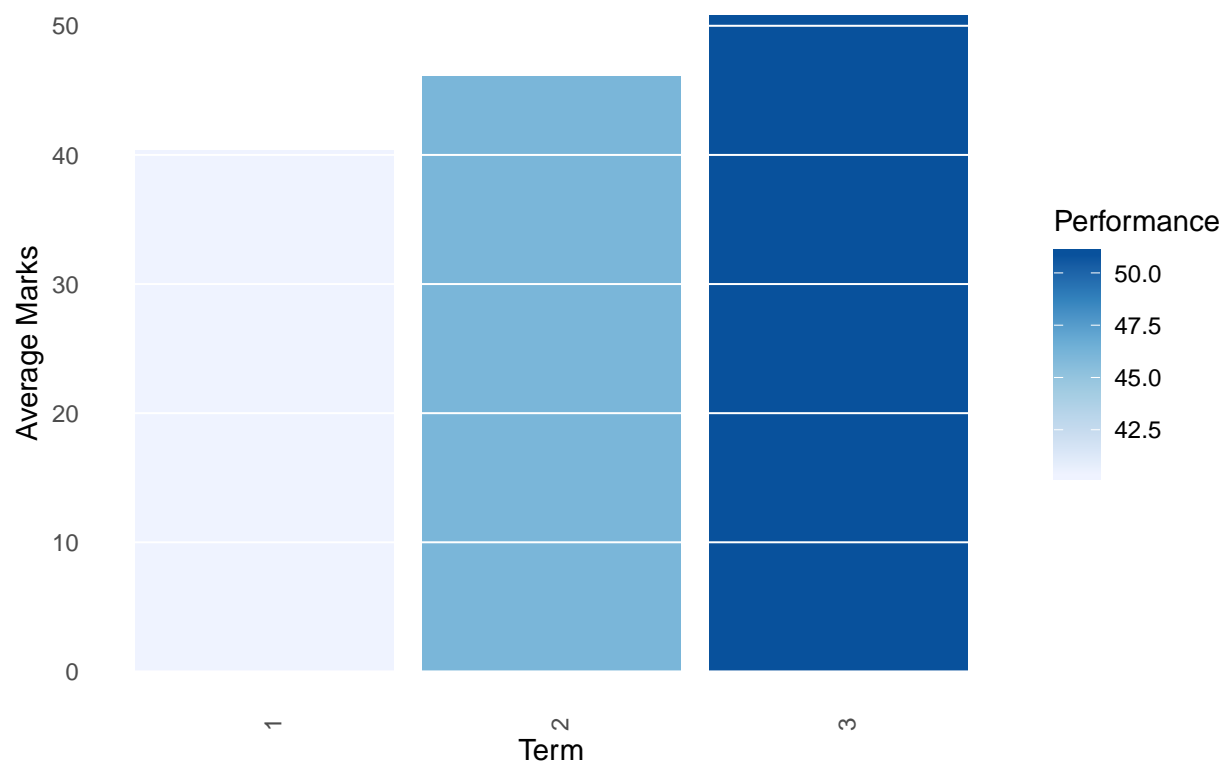
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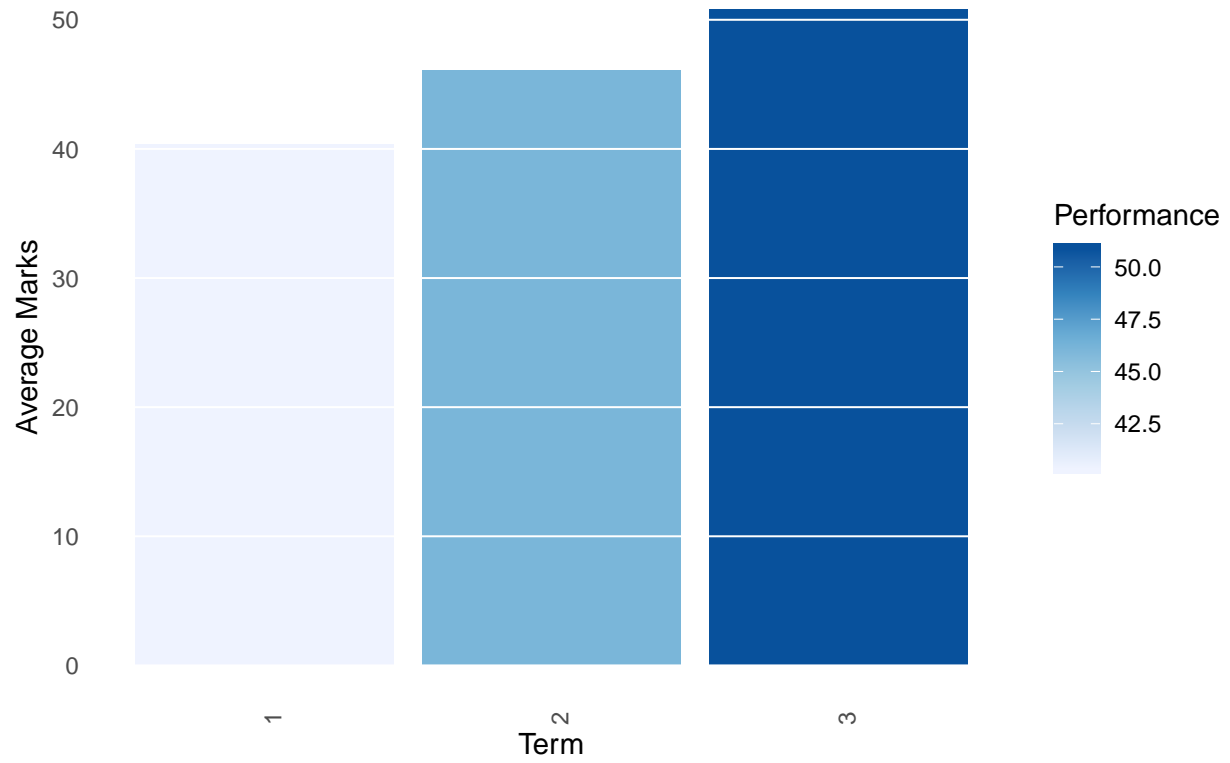
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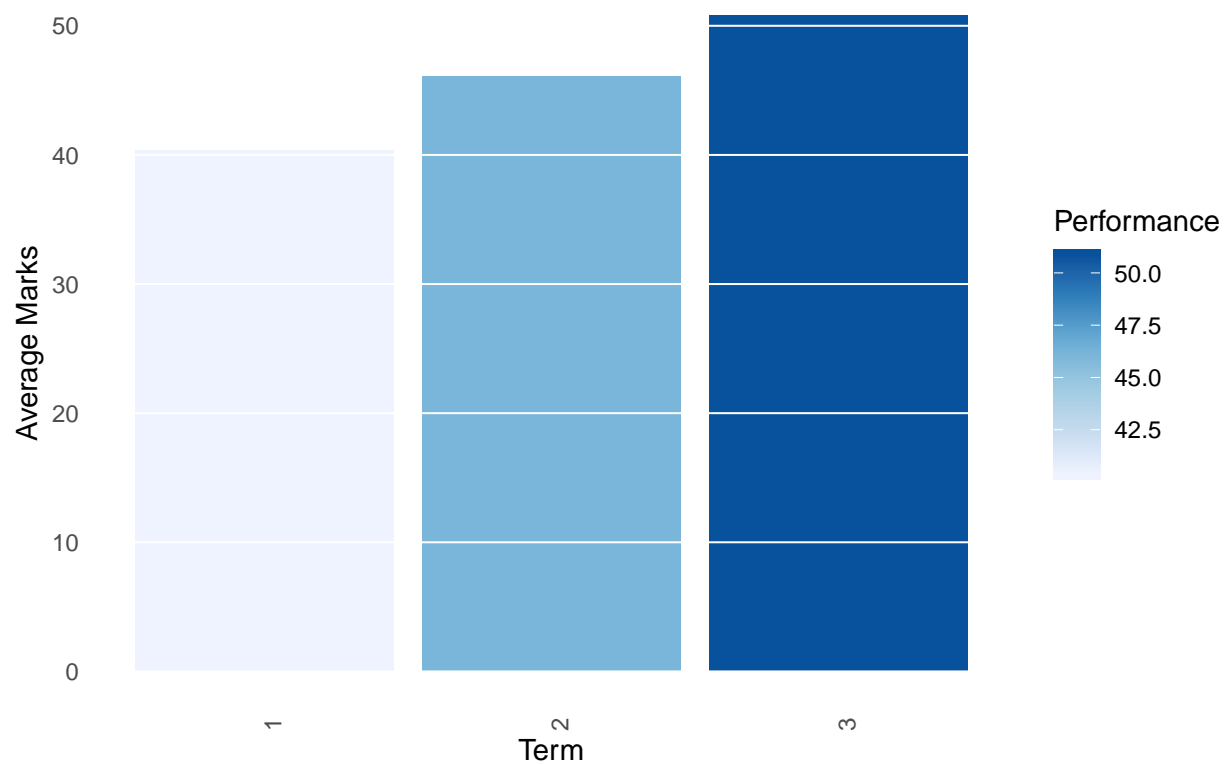
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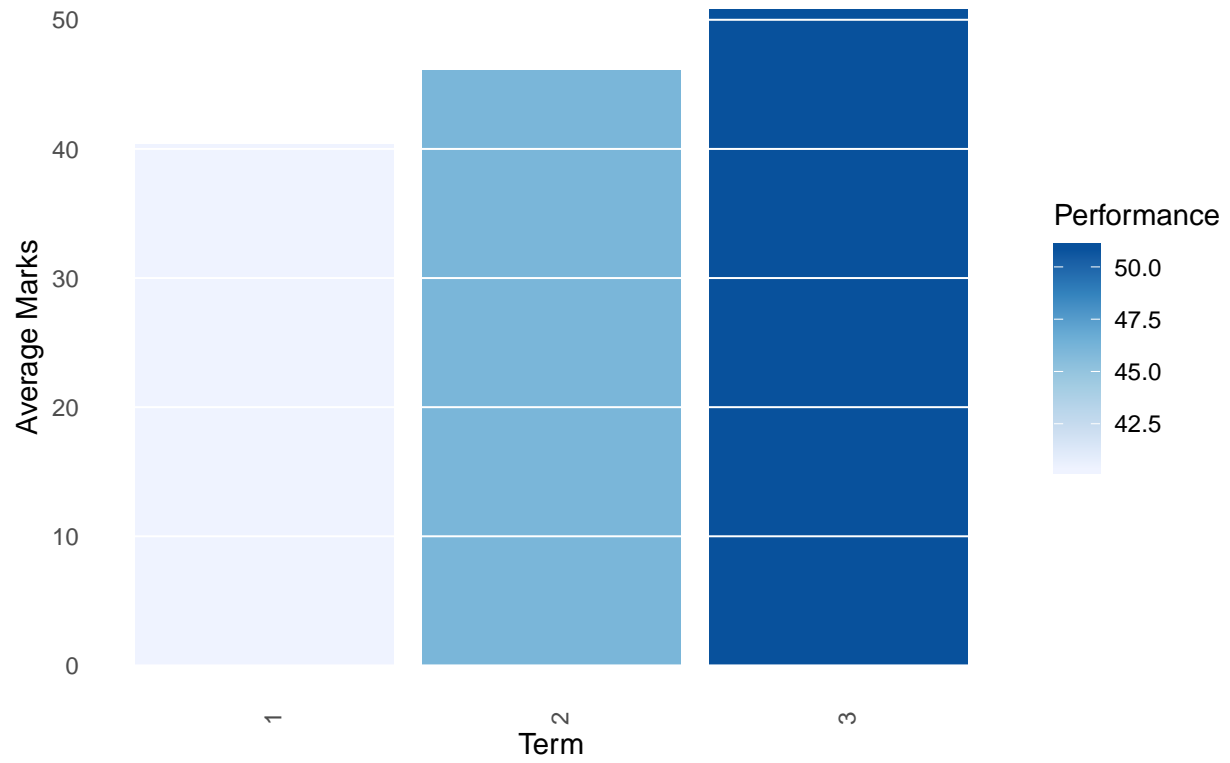
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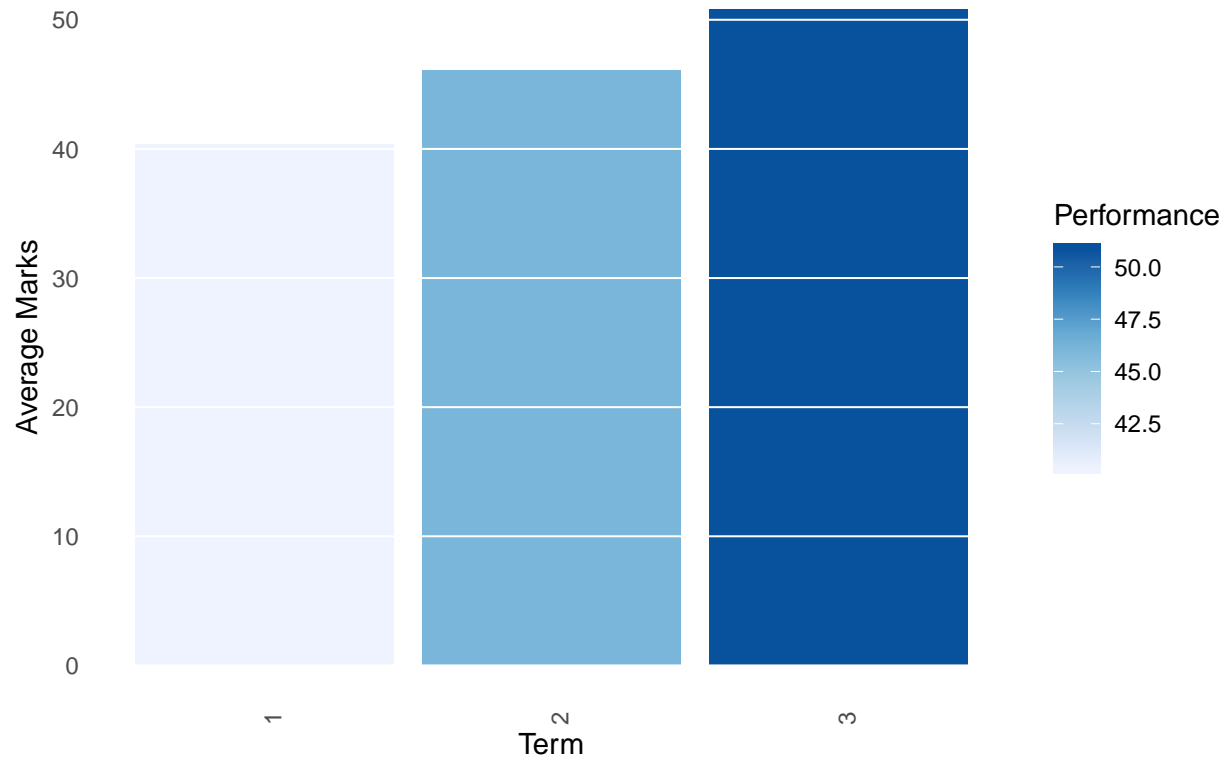
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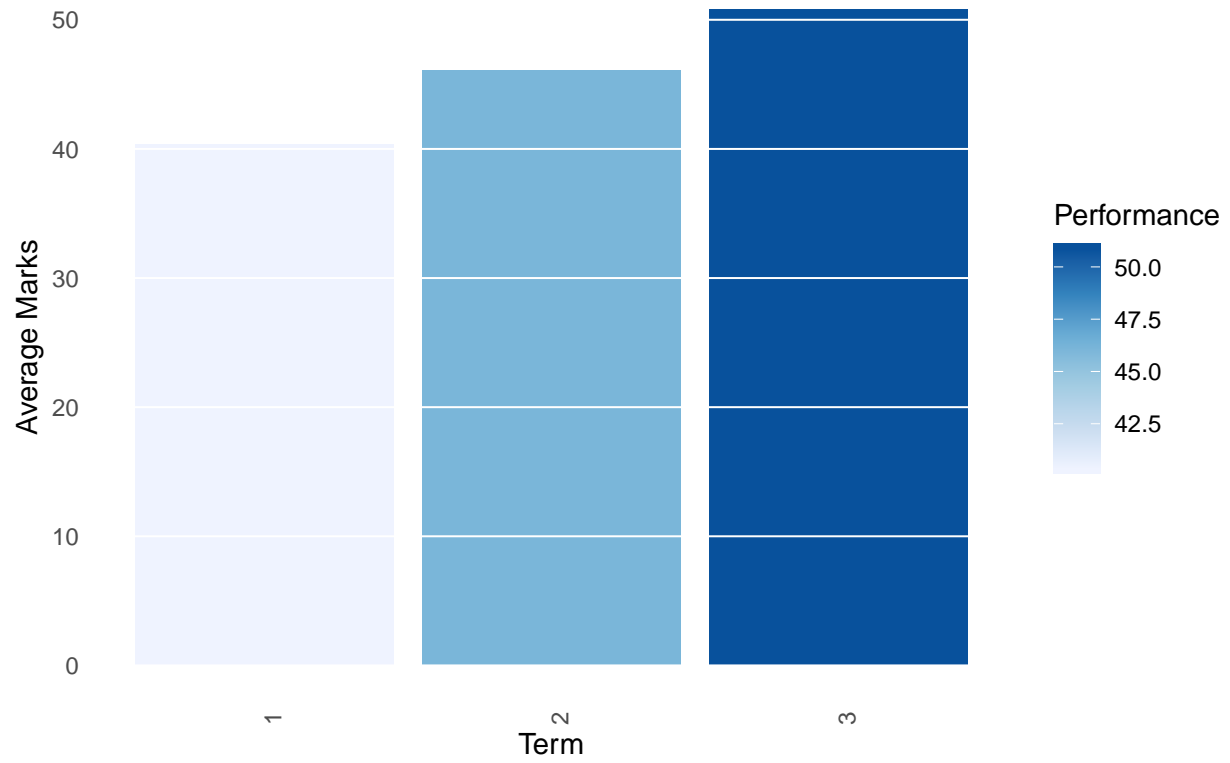
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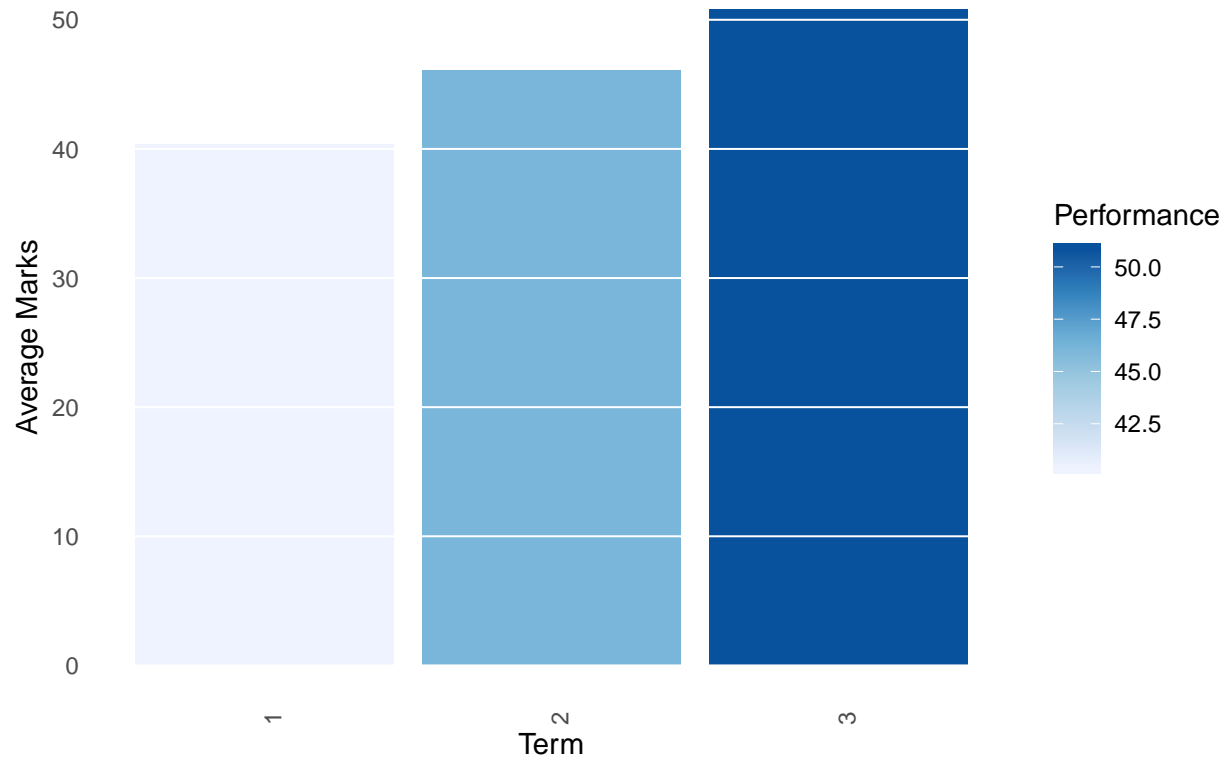
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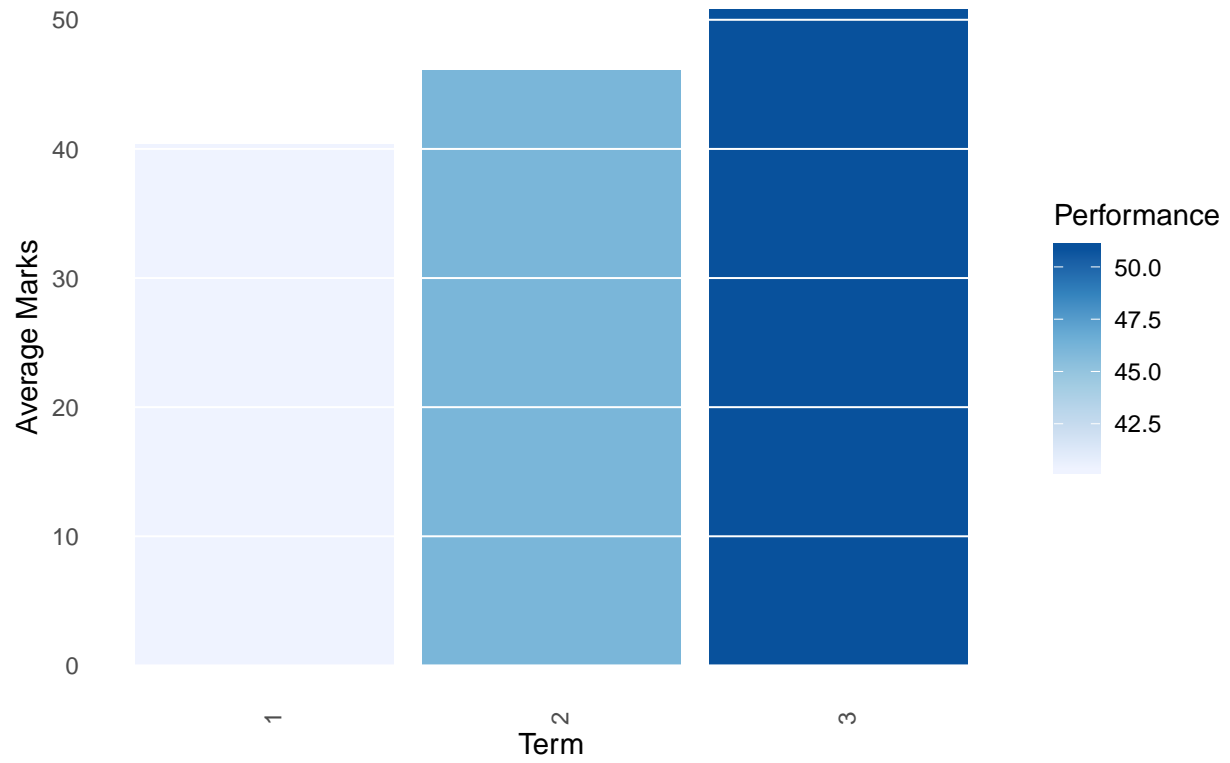
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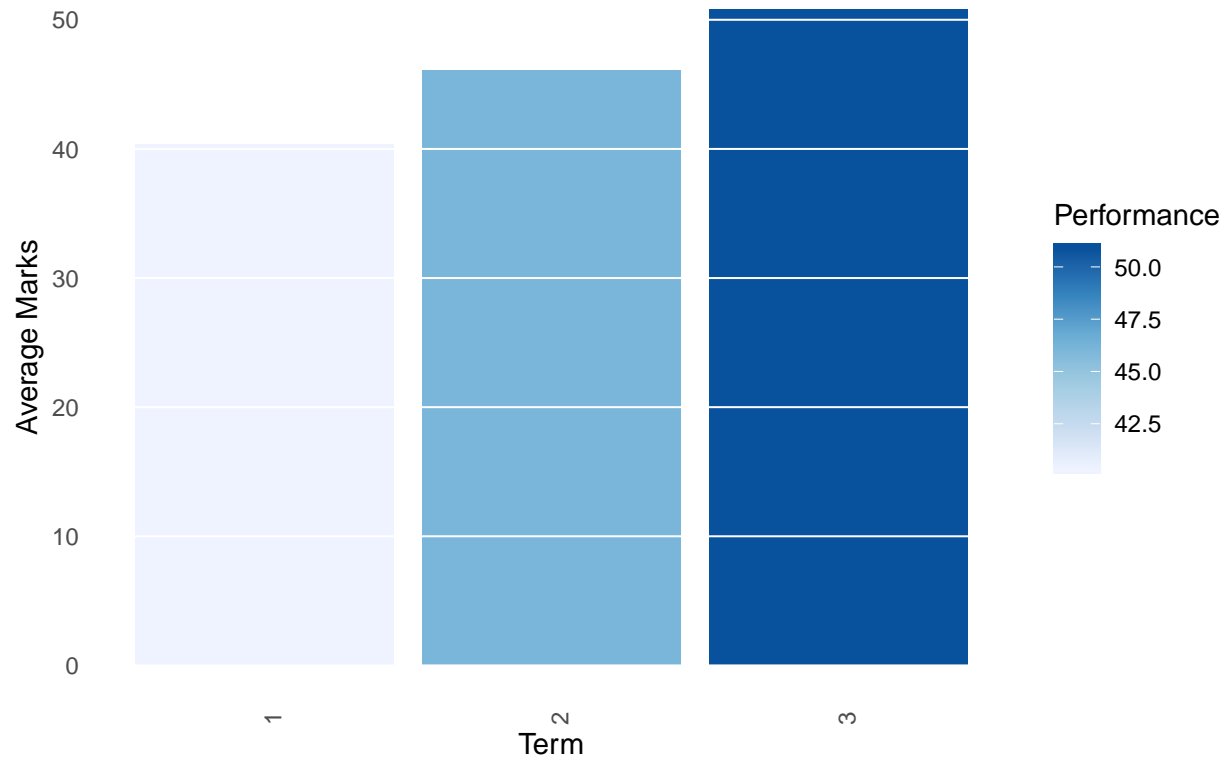
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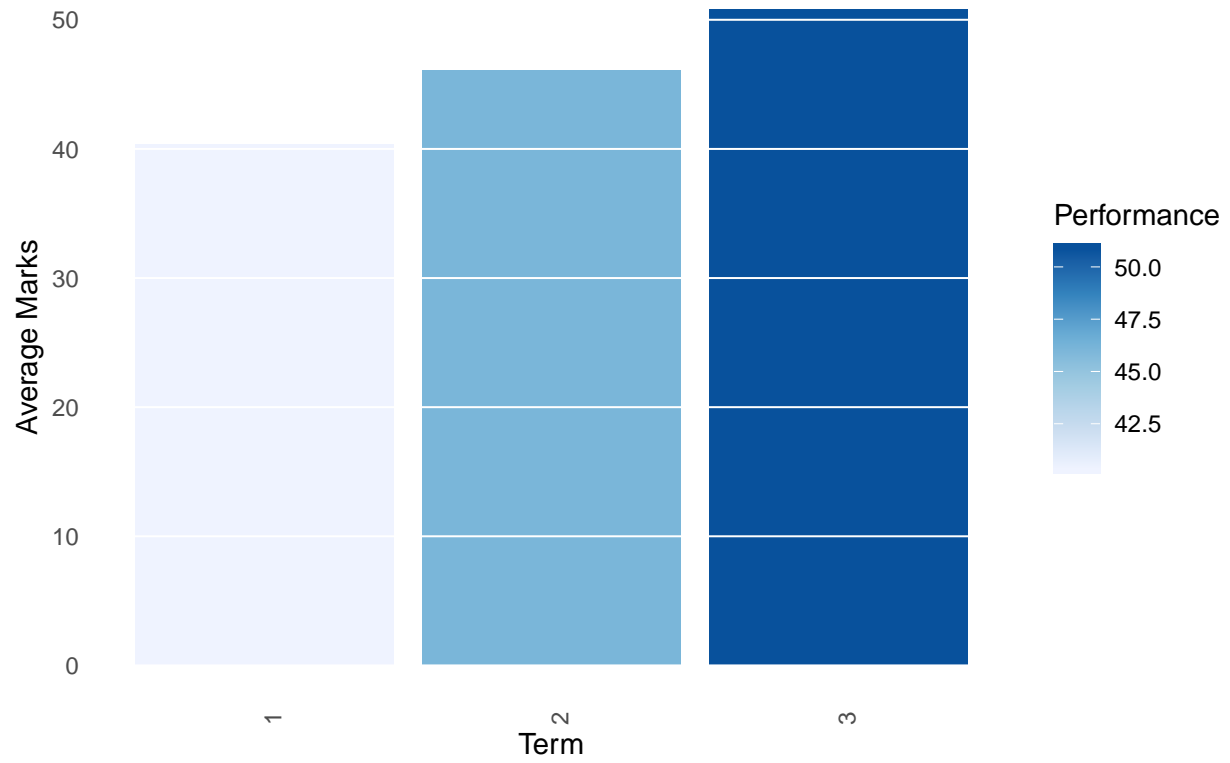
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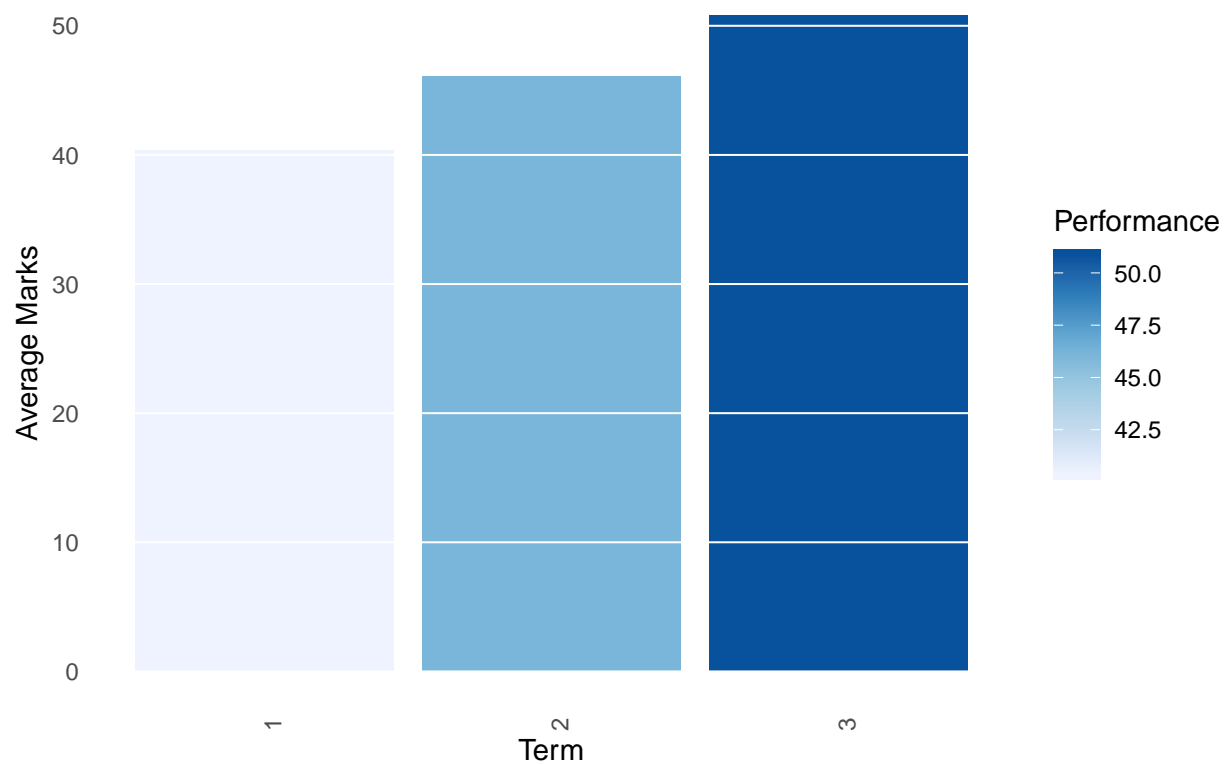
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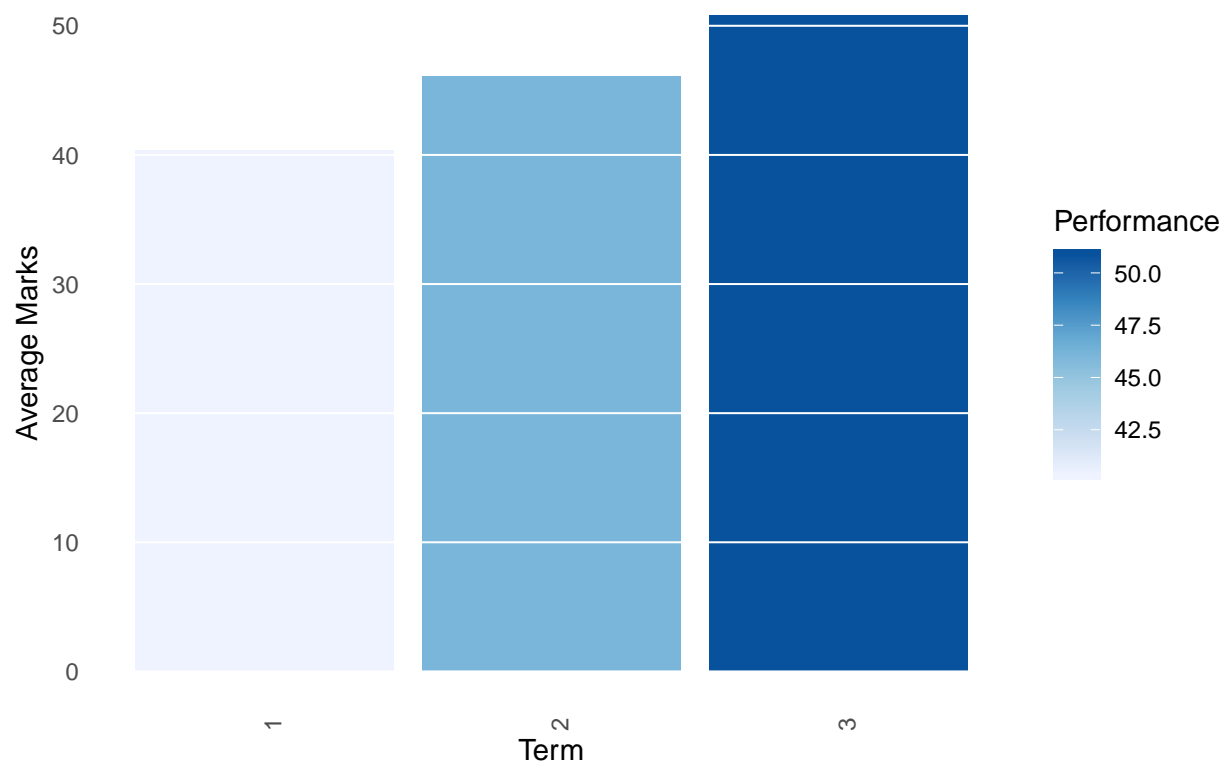
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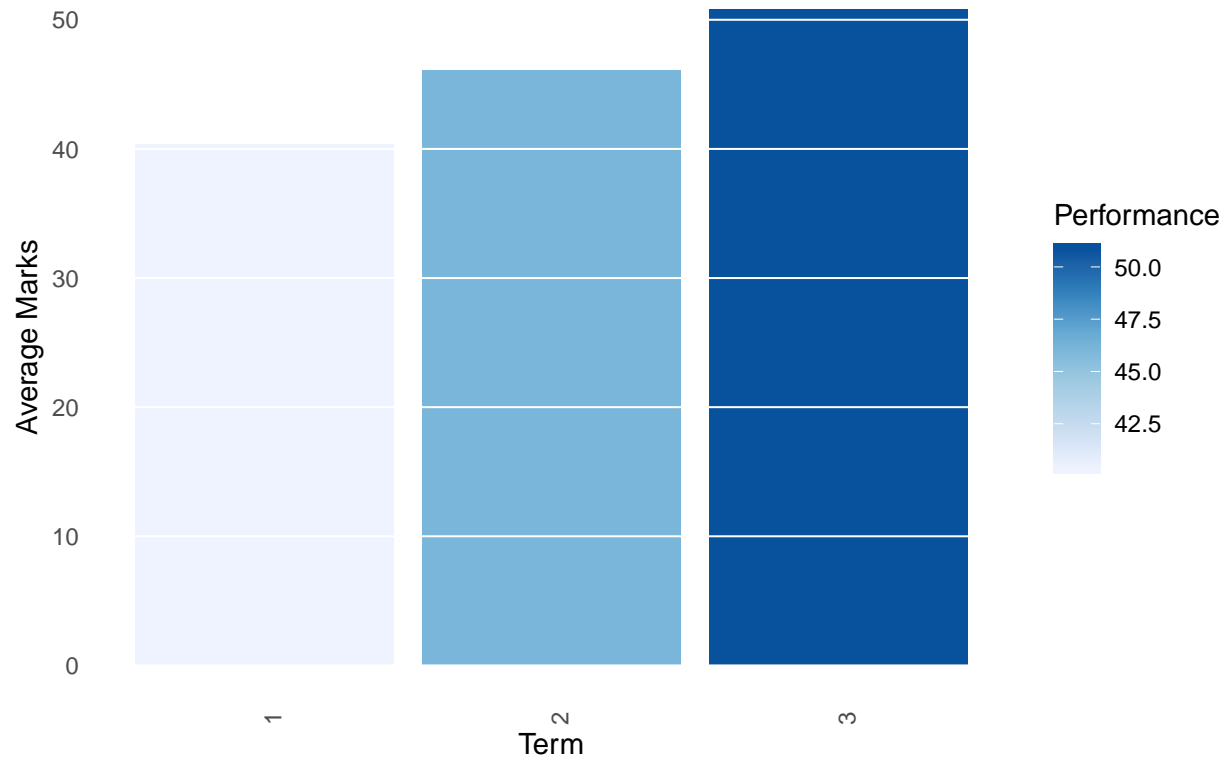
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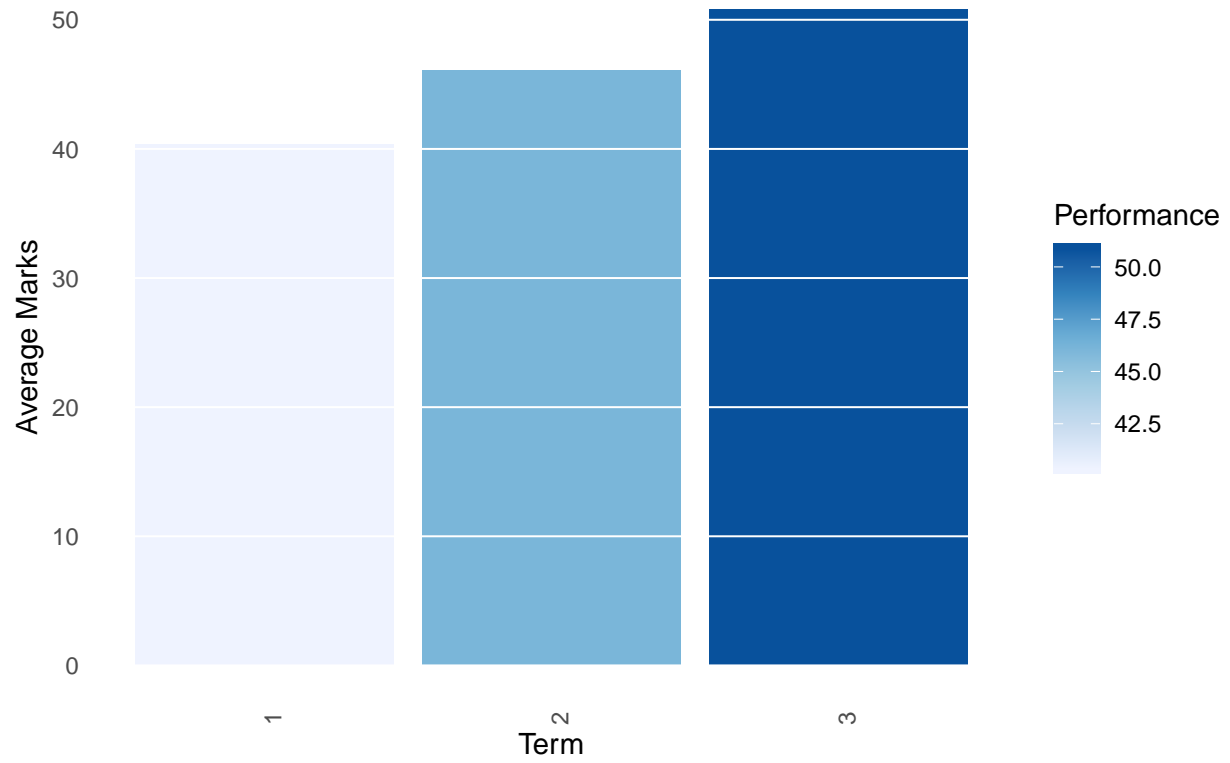
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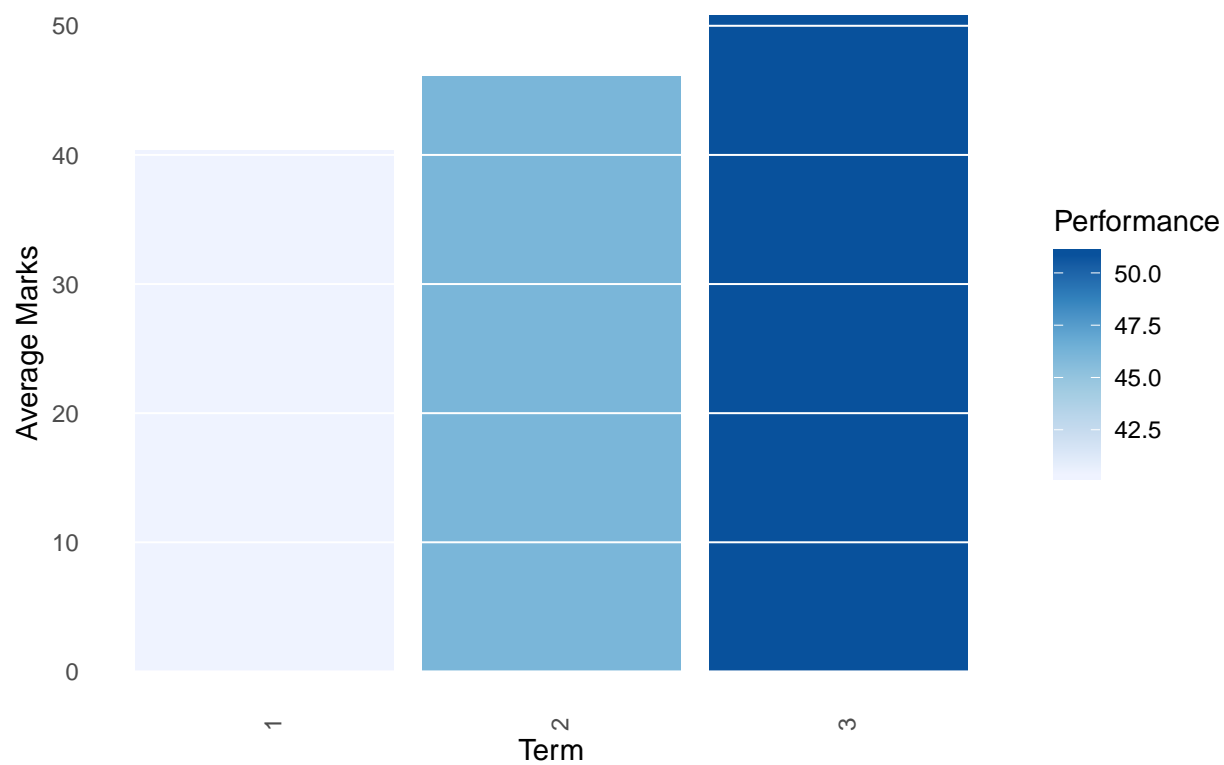
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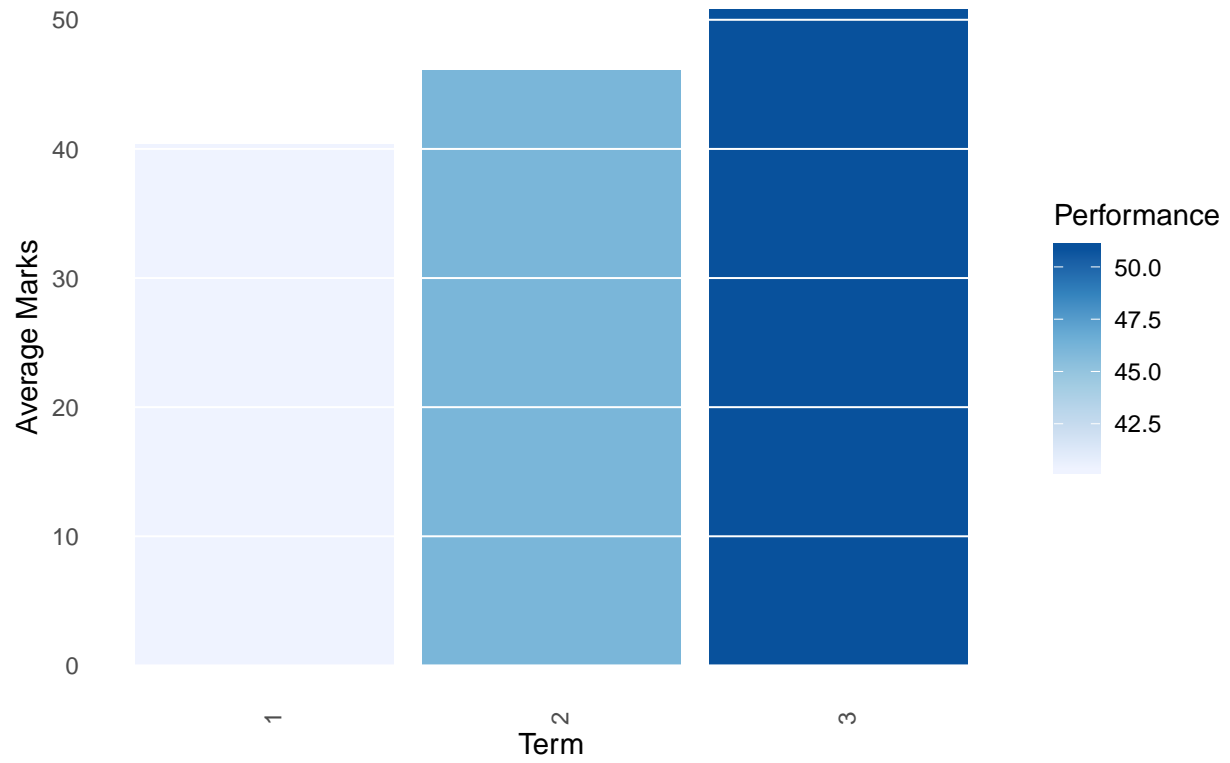
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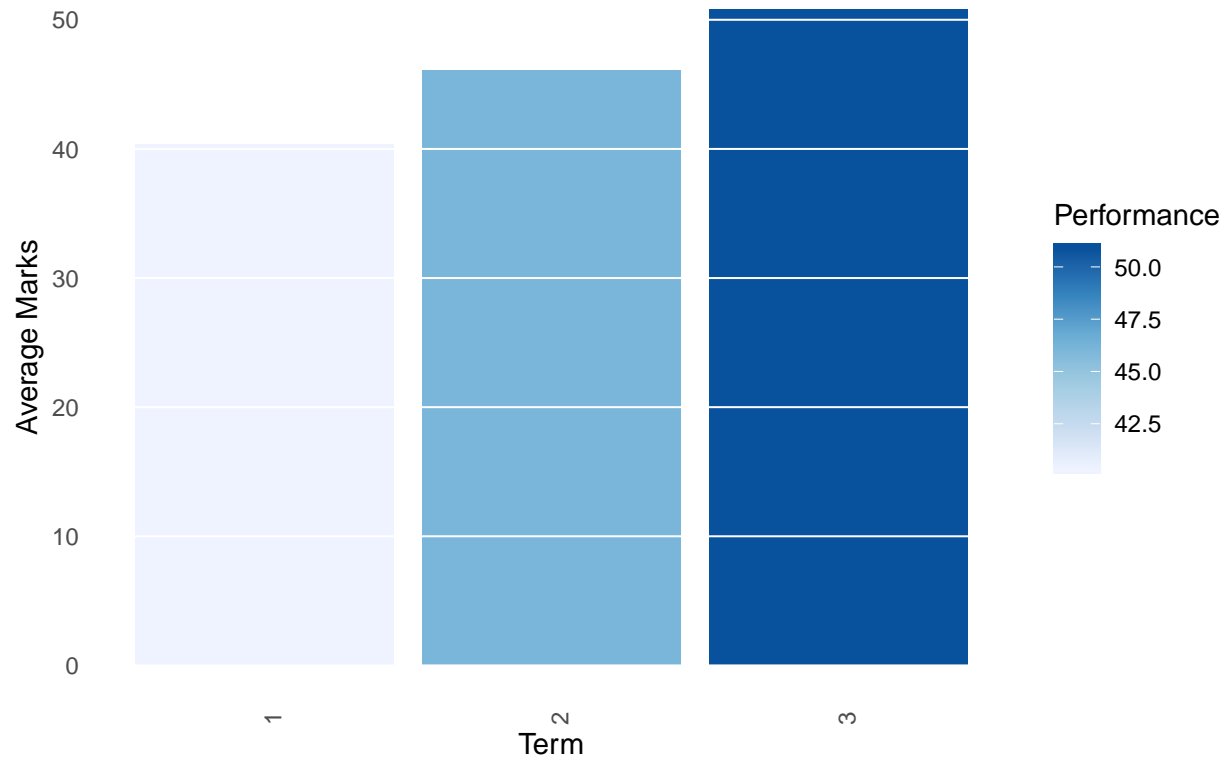
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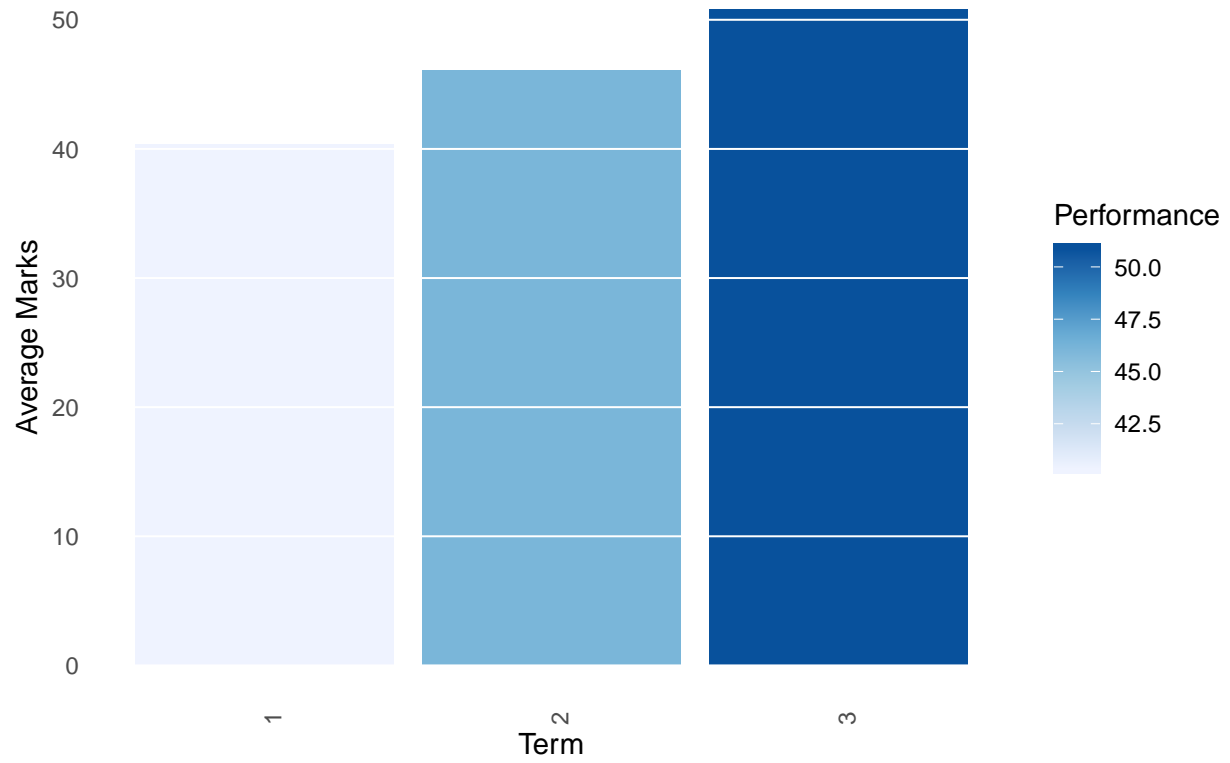
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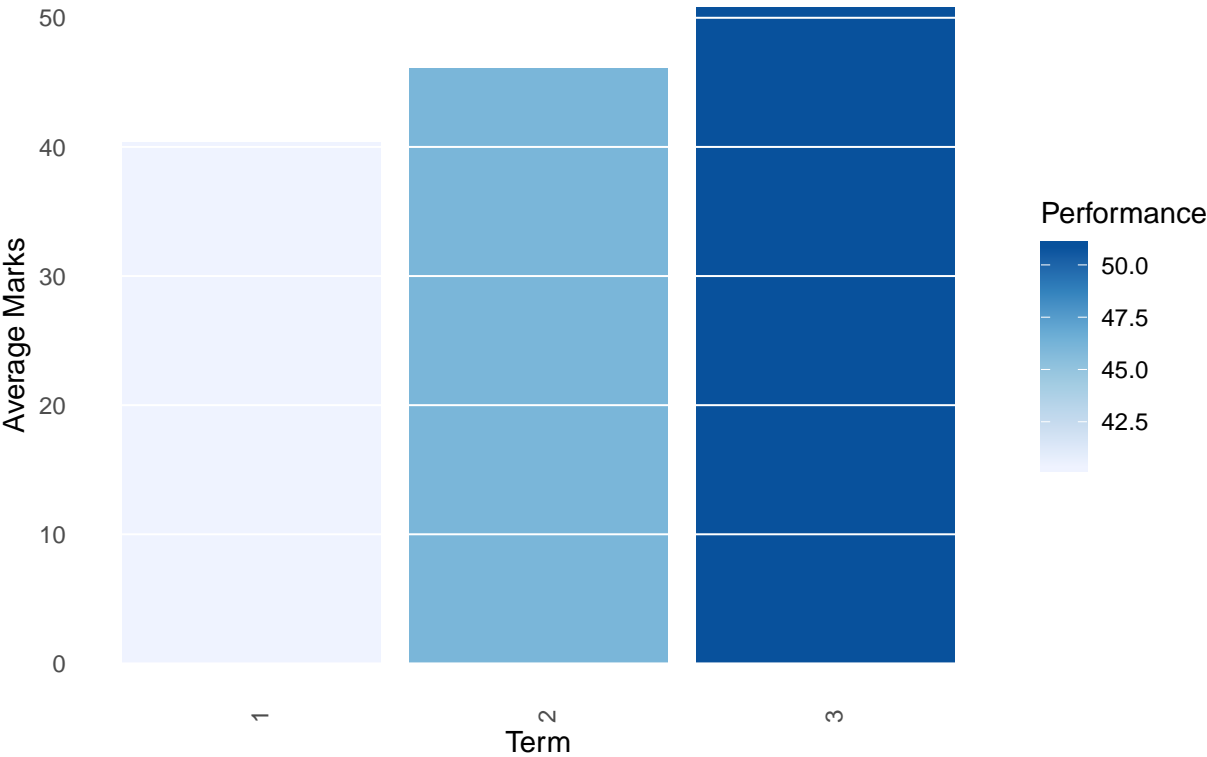
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