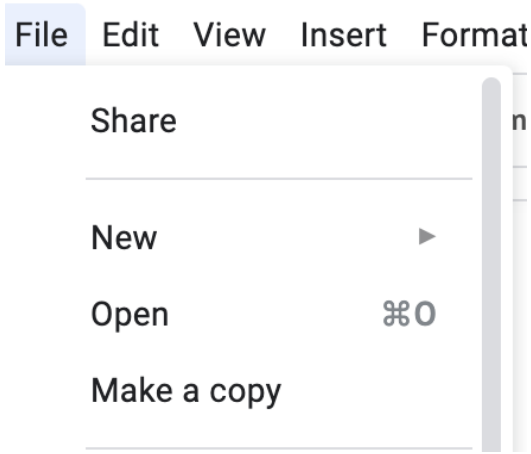
Team #: 4
Your name: Julia Campbell

Instructions:



First, make a copy of this document (go to File then Make a copy).

Name the document “project2 submission [your name here]”

This is an individual assignment. You will be making four graphs in total. Two scatter graphs and two line graphs. You should change one thing about the two scatter graphs and one thing about the two line graphs:

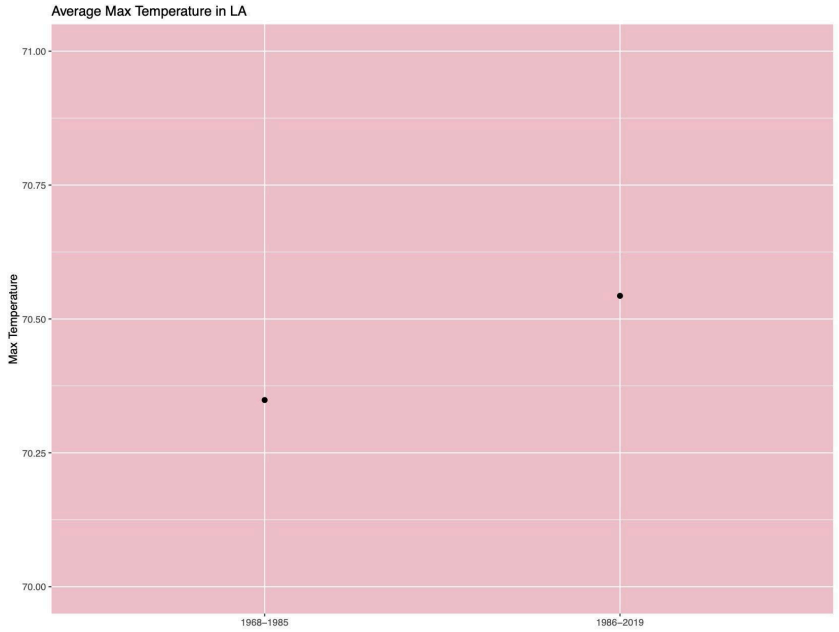
Learning goal: Consider the tradeoffs between the “simple” two-group scatter graph compared to the more descriptive line graph. Also, continuing on with considering the tradeoffs with different graph options.

CCLE: When you are done, upload the link on CCLE.

Please list your team number at the top!

What you changed from scatter graph 1 to graph 2: Added a black outline around graph.

Paste scatter plot graph 1 here



Paste scatter plot graph 2 here (slight modification)

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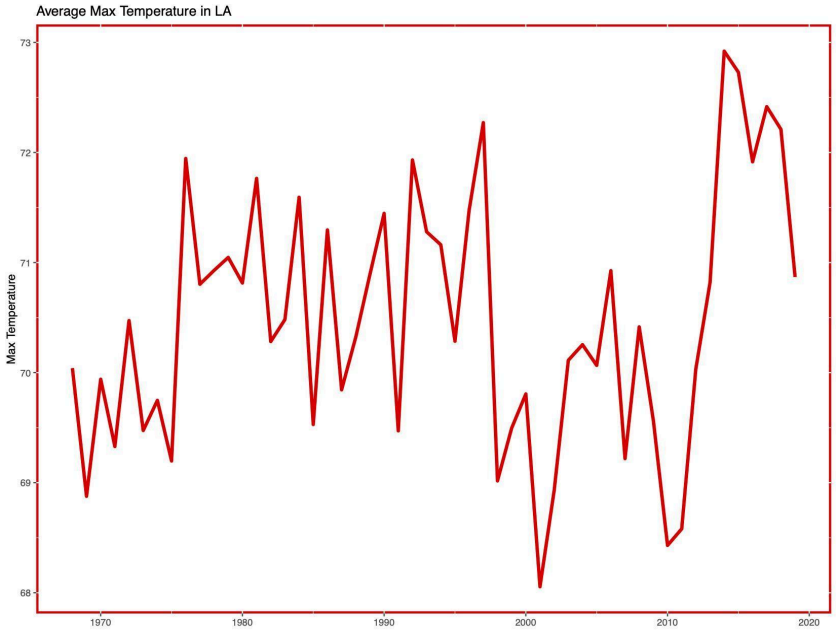
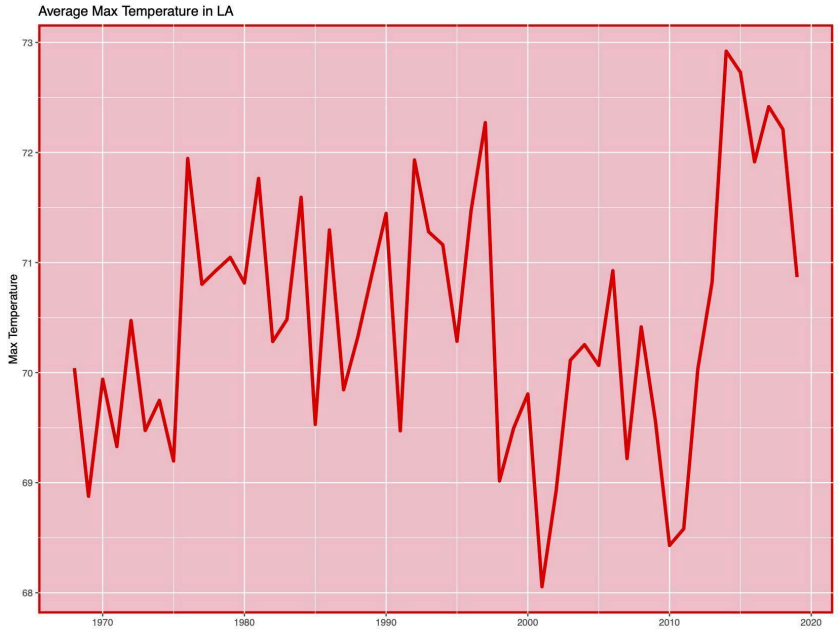
What you changed from LINE graph 1 to graph 2: Added pink fill as background.

Paste line graph 1 here



Paste line graph 2 here (slight modification)



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Copy and paste your R script code here.

1st Scatter Plot -

```
# PROJECT 2
# JULIA CAMPBELL
# APRIL 21ST, 2020

# LOAD LIBRARIES
library(ggplot2)
library(dplyr)
library(readr)
library(lubridate)

# READ IN DATA
ghcn_lax_1968 <- read_csv("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_1968.csv")
ghcn_lax_1968_2019 <- ghcn_lax_1968
for (year in 1969:2019){
  # TEMPORARY NAMES
  tempname <- paste0("ghcn_lax_",year)
  csvname <- paste0("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_",year,".csv")
  # IMPORT CODE SETUP TO NAME OBJECTS DIFFERENTLY
  tempdata <- read_csv(csvname)
  assign(tempname, tempdata)
  # BIND DATA
  ghcn_lax_1968_2019 <- bind_rows(ghcn_lax_1968_2019, tempdata)
  # RENAME
  assign(tempname, tempdata)
}

# MAKE COPY OF DATA
ghcn_group <- ghcn_lax_1968_2019
```

```
# ADD THE YEAR VARIABLE
ghcn_group <- mutate(ghcn_group, year=year(date))

# CREATE THE PERIOD VARIABLE
ghcn_group <- mutate(ghcn_group,period=ifelse(year<1986, "1968-1985", "1986-2019"))

# GROUP THE DATA
ghcn_group <- group_by(ghcn_group,period)

# AVERAGE THE TMAX VARIABLE OVER GROUPS (PERIOD)
ghcn_period_avg <- summarise(ghcn_group,tmax=mean(tmax))

# GRAPH
ggplot(ghcn_period_avg, aes(y=tmax, x=period)) +
  geom_point(stat = "identity", size=2) +
  labs(title="Average Max Temperature in LA", y="Max Temperature", x="") +
  ylim(70,71) +
  theme(panel.background=element_rect(fill="pink"))

# SAVE
ggsave("Documents/big_enviro/output/tutorials/scat_tmax_period_lax_1968_2019.pdf")
```

2nd Scatter Plot -

```
# PROJECT 2
# JULIA CAMPBELL
# APRIL 21ST, 2020

# LOAD LIBRARIES
library(ggplot2)
```

```
library(dplyr)
library(readr)
library(lubridate)

# READ IN DATA
ghcn_lax_1968 <- read_csv("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_1968.csv")
ghcn_lax_1968_2019 <- ghcn_lax_1968
for (year in 1969:2019){
  # TEMPORARY NAMES
  tempname <- paste0("ghcn_lax_",year)
  csvname <- paste0("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_",year,".csv")
  # IMPORT CODE SETUP TO NAME OBJECTS DIFFERENTLY
  tempdata <- read_csv(csvname)
  assign(tempname, tempdata)
  # BIND DATA
  ghcn_lax_1968_2019 <- bind_rows(ghcn_lax_1968_2019, tempdata)
  # RENAME
  assign(tempname, tempdata)
}

# MAKE COPY OF DATA
ghcn_group <- ghcn_lax_1968_2019

# ADD THE YEAR VARIABLE
ghcn_group <- mutate(ghcn_group, year=year(date))

# CREATE THE PERIOD VARIABLE
ghcn_group <- mutate(ghcn_group,period=ifelse(year<1986, "1968-1985", "1986-2019"))

# GROUP THE DATA
ghcn_group <- group_by(ghcn_group,period)
```

```
# AVERAGE THE TMAX VARIABLE OVER GROUPS (PERIOD)
ghcn_period_avg <- summarise(ghcn_group,tmax=mean(tmax))

# GRAPH
ggplot(ghcn_period_avg, aes(y=tmax, x=period)) +
  geom_point(stat = "identity", size=2) +
  labs(title="Average Max Temperature in LA", y="Max Temperature", x="") +
  ylim(70,71) +
  theme(panel.background=element_rect(fill="pink", color="black", size=2))

# SAVE
ggsave("Documents/big_enviro/output/tutorials/scat2_tmax_period_lax_1968_2019.pdf")
```

1st Line Graph -

```
# PROJECT 2
# JULIA CAMPBELL
# APRIL 21ST, 2020

# LOAD LIBRARIES
library(ggplot2)
library(dplyr)
library(readr)
library(lubridate)

# READ IN DATA
ghcn_lax_1968 <- read_csv("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_1968.csv")
ghcn_lax_1968_2019 <- ghcn_lax_1968
for (year in 1969:2019){
  # TEMPORARY NAMES
  tempname <- paste0("ghcn_lax_",year)
  csvname <- paste0("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_",year,".csv")
```

```
  # IMPORT CODE SETUP TO NAME OBJECTS DIFFERENTLY
  tempdata <- read_csv(csvname)
  assign(tempname, tempdata)
  # BIND DATA
  ghcn_lax_1968_2019 <- bind_rows(ghcn_lax_1968_2019, tempdata)
  # RENAME
  assign(tempname, tempdata)
}

# MAKE COPY OF DATA
ghcn_group <- ghcn_lax_1968_2019

# ADD THE YEAR VARIABLE
ghcn_group <- mutate(ghcn_group, year=year(date))

# CREATE THE PERIOD VARIABLE
ghcn_group <- mutate(ghcn_group,period=ifelse(year<1986, "1968-1985", "1986-2019"))

# GROUP THE DATA
ghcn_group <- group_by(ghcn_group,period)

# AVERAGE THE TMAX VARIABLE OVER GROUPS (PERIOD)
ghcn_period_avg <- summarise(ghcn_group,tmax=mean(tmax))

# UNGROUP
ungroup(ghcn_group)

######## REPEAT FOR YEAR ########

# GROUP THE DATA BY YEAR
ghcn_group <- group_by(ghcn_group,year)
```

```
# AVERAGE THE TMAX VARIABLE OVER GROUPS (YEAR)
ghcn_year_avg <- summarise(ghcn_group, tmax=mean(tmax))

# UNGROUP
ungroup(ghcn_group)

# GRAPH
ggplot(ghcn_year_avg, aes(y=tmax, x=year)) +
  geom_line(color="red", size=1.5) +
  labs(title="Average Max Temperature in LA", y="Max Temperature", x="") +
  theme(panel.background = element_rect(fill="white", color="red", size=2))

# SAVE
ggsave("Documents/big_enviro/output/tutorials/line_tmax_period_lax_1968_2019.pdf")
```

2nd Line Graph -

```
# PROJECT 2
# JULIA CAMPBELL
# APRIL 21ST, 2020

# LOAD LIBRARIES
library(ggplot2)
library(dplyr)
library(readr)
library(lubridate)

# READ IN DATA
ghcn_lax_1968 <- read_csv("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_1968.csv")
ghcn_lax_1968_2019 <- ghcn_lax_1968
for (year in 1969:2019){
  # TEMPORARY NAMES
```

```
  tempname <- paste0("ghcn_lax_",year)
  csvname <- paste0("Documents/big_enviro/data/ghcn/ghcn_lax_1968_2019/ghcn_lax_",year,".csv")
  # IMPORT CODE SETUP TO NAME OBJECTS DIFFERENTLY
  tempdata <- read_csv(csvname)
  assign(tempname, tempdata)
  # BIND DATA
  ghcn_lax_1968_2019 <- bind_rows(ghcn_lax_1968_2019, tempdata)
  # RENAME
  assign(tempname, tempdata)
}

# MAKE COPY OF DATA
ghcn_group <- ghcn_lax_1968_2019

# ADD THE YEAR VARIABLE
ghcn_group <- mutate(ghcn_group, year=year(date))

# CREATE THE PERIOD VARIABLE
ghcn_group <- mutate(ghcn_group,period=ifelse(year<1986, "1968-1985", "1986-2019"))

# GROUP THE DATA
ghcn_group <- group_by(ghcn_group,period)

# AVERAGE THE TMAX VARIABLE OVER GROUPS (PERIOD)
ghcn_period_avg <- summarise(ghcn_group,tmax=mean(tmax))

# UNGROUP
ungroup(ghcn_group)

######## REPEAT FOR YEAR ########

# GROUP THE DATA BY YEAR
```

```
ghcn_group <- group_by(ghcn_group,year)

# AVERAGE THE TMAX VARIABLE OVER GROUPS (YEAR)
ghcn_year_avg <- summarise(ghcn_group, tmax=mean(tmax))

# UNGROUP
ungroup(ghcn_group)

# GRAPH
ggplot(ghcn_year_avg, aes(y=tmax, x=year)) +
  geom_line(color="red", size=1.5) +
  labs(title="Average Max Temperature in LA", y="Max Temperature", x="") +
  theme(panel.background = element_rect(fill="pink", color="red", size=2))

# SAVE
ggsave("Documents/big_enviro/output/tutorials/line2_tmax_period_lax_1968_2019.pdf")
```