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##########################################
### Data Visaulization Assignement 3.2 ###
#     Connor Harrison, Feb 24, 2019      #
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# Reguire Packages
library(tidyverse)
library(readr)
library(ggthemes)

# Load Data
WPP2017_LifeTable <- read_csv("~/Georgetown Docs/Data/WPP2017_LifeTable.csv")

# Only keep aggregated gender observations
life_table2 <- filter(WPP2017_LifeTable, Sex=="Total")

# Infant Mortality Measure: Keep obs where age range is 0-1
life_table_child <- filter(life_table2, AgeGrp==0)life_table2 <- filter(WPP2017_LifeTable, Sex=="Total")

# Life Table for Highly-affected HIV nations
life_table_hiv <- filter(life_table2, Location=="Lesotho" | Location=="Botswana" |
Location=="Swaziland"
                  | Location=="Zambia" | Location=="Zimbabwe")

# Pull out specific age and range period
life_table_hiv_p <- filter(life_table_hiv, AgeGrp==0 & MidPeriod < 2019)

# Rename Variables Based on Codebook
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life_table_hiv_p <- select(life_table_hiv_p, Region='Location', Year='MidPeriod',
Central_Death_Rate='mx',
                           Prob_Dying='qx', Prob_Surviving='px', Number_Deaths='dx', Survival_Ratio='Sx',
                           Expectation_of_Life='ex')
# Initial Plot
ggplot(data = life_table_hiv_p,
      mapping = aes(x = Year, y = Expectation_of_Life, color = Region)) +
  geom_line()


# Plot
ggplot(data = life_table_hiv_p,
      mapping = aes(x = Year, y = Expectation_of_Life, color = Region)) +
  geom_line(size=1.2, alpha=0.5) +
  scale_x_continuous(breaks = seq(1950, 2020, 5)) +
  scale_y_continuous(breaks = seq(40, 65, 5)) +
  theme_fivethirtyeight() +
  theme(legend.position = 'none', panel.grid.major.x = element_blank(), panel.border = element_blank())
+
  scale_colour_economist() +
  labs(fill="",
      x="", y="",
      title = "The HIV Epidemic",
      subtitle = "Impact of HIV on Life Expectancy in 5 African Nations",
      caption = "Data: UN World Population Prospects 2017")


## Visualization Refined in Illustrator ##
# (somewhat) #
```