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### Data Visaulization Assignement 3.1 ###
#    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)


# Drop Projections
life_table_child_p <- filter(life_table_child, MidPeriod<2019)


# Keep only region aggregated variables
life_table_child_region_p <- filter(life_table_child_p, Location=="Africa" | Location=="Asia" |
Location=="Caribbean"
                    | Location=="Central America" | Location=="Central Asia" | Location=="Eastern
Africa"
                    | Location=="Eastern Asia" | Location=="Eastern Europe" | Location=="Europe" |
                     Location=="High Income Countries" | Location=="Latin America and the
Caribbean"
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| Location=="Least developed countries" | Location=="Less developed regions" |

Location=="Less developed regions, excluding China" | Location=="Low-income countries"

| Location=="Lower-middle-income countries" | Location=="Middle Africa" |

Location=="Middle-income countries" | Location=="Northern Africa" | Location=="Northern America"

| Location=="South America" | Location=="South-Central Asia" | Location=="South-Eastern Asia"

| Location=="Sub-Saharan Africa" | Location=="Upper-middle-income countries" |

Location=="Western Europe" | Location=="World" | Location=="Oceania" | Location=="Southern Asia")

Refine life tables to selected regions and income categories

life_table_child_region2 <- filter(life_table_child_region_p, Location=="Central Asia" | Location=="Southern Asia" | Location=="South-Eastern Asia" |

Location=="Northern Africa" | Location=="Sub-Saharan Africa" | Location=="Western Europe" |

Location=="Eastern Europe" | Location=="Northern America" | Location=="Latin America and the Caribbean" |

Location=="Oceania")

Rename Variables Based on Codebook

life_table_child_region2 <- select(life_table_child_region2, Region='Location', Year='MidPeriod', Central_Death_Rate='mx',

Prob_Dying='qx', Prob_Surviving='px', Number_Deaths='dx', Survival_Ratio='Sx',

Expectation_of_Life='ex')

Tile Plot

ggplot(data = life_table_child_region2,

  mapping = aes(x = Year, y = Region)) +

  geom_tile(aes(fill = Expectation_of_Life)) +

 ggthemes::scale_fill_continuous_tableau() +

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  theme(plot.title = element_text(face = "bold")) +

 labs(fill="Life Expectancy at Birth",

    x="", y="",

    title = "An Ageing World",

    subtitle = "Since 1950, average life expectancy has steadily increased across\nthe world. However, significant disparities between regions remain.",

    caption = "Data: UN World Population Prospects 2017")
```