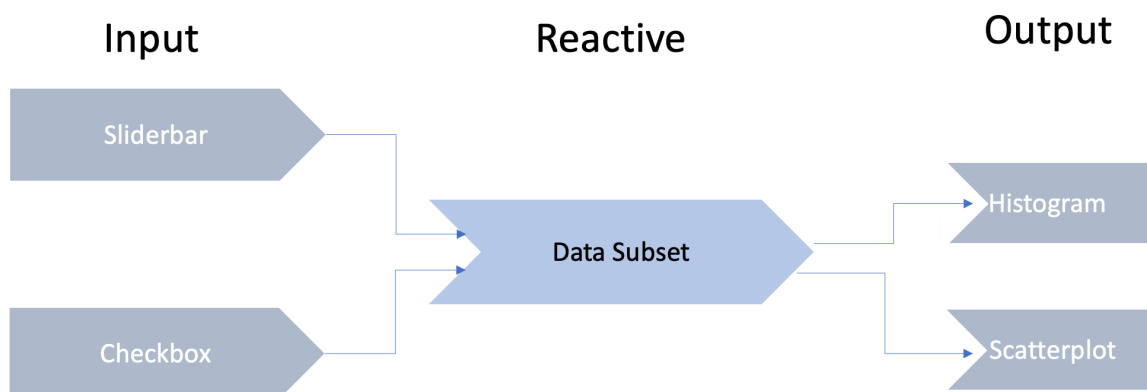


Portfolio 2: World Happiness Report  
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Stat 479

With increasingly fast pace of the society and high suicide rate, mental health has recently come to the center of people's attention, and more and more citizens around the world plan to move permanently to a place with less stress and more happiness to improve their mental conditions. World happiness report is a reliable source of reference in this case, focusing on general happiness and well-being. This report also collects information about economy, health, social support, government policies and so on. This report aims to analyze the world happiness dataset to see which region has the best happiness value and what are the key factors influencing people's well-being. The data used in this report is 2015 world happiness dataset (<https://www.kaggle.com/unsdsn/world-happiness>). The dataset includes data from 153 different countries all over the world.

Data are tidied up before making the visualization. Categorical data are converted to factors in R for convenience. Moreover, column names are changed to be more easily understood by the users. In the shiny app, two dynamic queries are included for users to interactively visualize the dataset. Users are allowed to use a check box to select the regions or use the slider bar to filter the range of the happiness score. The bar plot shows the total number of countries in each region after filtering. Three scatterplots below show the relationship between happiness score and life expectancy, GDP per capita, and government corruption, with the blue line representing the overall trend. Different colors represent different regions, and the color legend is the same as the bar plot above. A reactive graph of the shiny app is shown in the graph below.



From the scatterplot, it's not hard to visualize that sub-Saharan Africa has a low happiness score due to their poor economic condition and relatively low life expectancy. Comparatively, western Europe has the highest happiness score which matches our expectation since countries in Europe such as Denmark are known for their well-beings. In general, the higher life expectancy happens with higher happiness score, probably because people with greater longevity have better health and able to live independently and enjoy their lives. Furthermore, happiness score is also associated with higher GDP per capita since people with

more money in hand are likely to get satisfied by making consumptions. In Middle East and Northern Africa, it is unexpected that countries with high happiness score has great variance in government corruption rate, making it harder to draw conclusion between happiness and government corruption rate. What's more, in Western Europe, there is a positive relationship between happiness score and government corruption rate, indicating that people with better well-beings does not necessarily imply that government officials making right use of their powers.