Data Visualization Assignment

### **Problem Statement:**

Sam has successfully completed the data manipulation phase. Now, he has to represent the data pictorially to get a better understanding.

Sam will start off by making some bar plots by using the geom\_bar() function from the ggplot2 package

## Questions on geom\_bar():

1. Build a bar-plot for the ‘PhoneService’ column
   1. Assign the fill color to be ‘pink’
   2. Assign the boundary color to be ‘peru’
2. Build a bar-plot for the ’InternetService’ column
   1. Assign ‘InternetService’ to the fill aesthetic
   2. Assign ‘Contract’ to the fill aesthetic
   3. Change the position of bars to ‘identity’
3. Build a bar-plot for ‘TechSupport’ column
   1. Assign ‘Churn’ to the fill aesthetic

Now, Sam will go ahead & make some histograms by using the geom\_histogram() function

## Questions on geom\_histogram():

1. Build a histogram for the ‘tenure’ column
   1. Assign the fill color to be ‘mediumspringgreen’
   2. Assign the boundary color to be ‘azure’
   3. Change the number of bins to be 100
2. Build histogram for the ‘MonthlyCharges’ column
   1. Assign ‘PaymentMethod’ to the fill aesthetic
   2. Assign ‘OnlineBackup’ to the fill aesthetic
3. Build histogram for the ‘TotalCharges’ column
   1. Assign ‘gender’ to the fill aesthetic
   2. Assign ‘InternetService’ to the fill aesthetic

Now, Sam decides to make some scatter-plots on the data by using geom\_point() function

## Questions on geom\_point():

1. Build a scatter-plot between ‘TotalCharges’ & ‘tenure’. Map ‘TotalCharges’ to the y-axis & ‘tenure’ to the ‘x-axis’
   1. Assign it the color ‘wheat3’
   2. Use ‘col’ as an aesthetic and Map ‘PaymentMethod’ to col
   3. Use ‘col’ as an aesthetic and Map ‘gender’ to col
   4. Map ‘Dependents’ to both ‘col’ & ‘shape’ aesthetics
2. Build a scatter-plot between ‘tenure’ & ‘MonthlyCharges’. Map ‘tenure’ to the y-axis & ‘MonthlyCharges’ to the ‘x-axis’
   1. Assign it the color ‘yellowgreen’
   2. Use ‘col’ as an aesthetic and Map ‘InternetService’ to col
   3. Use ‘col’ as an aesthetic and Map ‘Contract’ to col

Now, Sam has to make some box-plots using the geom\_boxplot() function

## Questions on geom\_boxplot:

1. Build a box-plot between ‘tenure’ & ‘Partner’. Map ‘tenure’ to the y-axis & ‘Partner’ to the ‘x-axis’
   1. Assign it a fill color of ‘violet’
   2. Assign it a boundary color of ‘snow3’
2. Build a box-plot between ‘tenure’ & ‘MultipleLines’. Map ‘tenure’ to the y-axis & ‘MultipleLines’ to the ‘x-axis’
   1. Assign ‘Partner’ to the fill aesthetic
   2. Assign ‘PhoneService’ to the fill aesthetic
3. Build a box-plot between ‘tenure’ & ‘Contract’
   1. Assign ‘InternetService’ to the fill aesthetic
   2. Assign ‘PaymentMethod’ to the fill aesthetic

Now, Sam will go ahead and facet the data

## Questions on facet\_grid():

1. Build a box-plot between ‘tenure’ & ‘MultipleLines’. Map ‘tenure’ on the y-axis & ‘MultipleLines’ on the x-axis. Map ‘InternetService’ to the fill aesthetic
   1. Facet the plot w.r.t ‘InternetService’ column
2. Build a scatter-plot between ‘TotalCharges’ & ‘tenure’. Map ‘TotalCharges’ on the y-axis & ‘tenure’ on the x-axis. Map ‘Contract’ onto col aesthetic
   1. Facet the plot w.r.t ‘Contract’ column
3. Build a histogram for the ‘MonthlyCharges’ column. Map ‘PaymentMethod’ onto fill aesthetic.
   1. Facet the plot w.r.t ‘PaymentMethod’ column

Finally, Sam will add some themes to the plot with the theme() layer

## Questions on theme() layer:

1. Build a bar-plot for the ‘gender’ column. Give it a fill color of ‘blue4’
   1. Give the panel a background color of ‘chartreuse4’
   2. Give the plot a background color of ‘cornsilk4’
2. Build a scatter-plot between ‘tenure’ & ‘MonthlyCharges’. Map ‘tenure’ on the y-axis & ‘MonthlyCharges’ on the x-axis. Assign a color of ‘yellowgreen’ to the points.
   1. Add a title to the plot ‘Tenure vs Monthly Charges’
   2. Give the panel a background color of ‘coral2’
   3. Give the plot a background color of ‘beige’
   4. Center align the title & make the color of the title to be red