NASA Astronauts

The following R coding assignment uses demographics and space

flight specific information for NASA Astronauts from 1959 - 2013

as a data source. You are to use R, tidyverse, and ggplot coding

to produce correct output for the following questions and

directions.

Please submit this assignment on Canvas by generating an Rmarkdown file and a knitted Word file or an

a knitted Word file or HTML.

library(tidyverse)

# 1 Use and show r code to import the Astronauts csv file.

# 2 Use and show r code to determine the number of Astronauts who are

# in the data table and the number of descriptive column variables.

# 3 Use and show r code to produce the number and the

# names of only the female Astronauts.

# 4 Use and show R coding to produce a table that shows the

# military rank and the military branch of each Female Astronaut.

# 5 Some of the Astronauts in the data table are listed as Active

# and others are not. Use and show r code to determine how many

# Female Astronauts were currently active when this data set was

# constructed.

# 6 Use and show ggplot coding to produce a bar graph that compares

# space walks for Male and Female Astronauts.

# 7 Use and show r code to produce the table below that lists all

# Female Astronauts who have registered one or more Space Walks.

# A tibble: 11 × 4

**Name Gender Space…¹ n**

**<chr> <chr> <dbl> <int>**

**1 Heidemarie M. Stefanyshyn-Pip… Female 2 1**

**2 Kathleen Rubins Female 2 1**

**3 Kathryn C. Thornton Female 3 1**

**4 Kathryn D. Sullivan Female 1 1**

**5 Linda M. Godwin Female 2 1**

**6 Nicole P. Stott Female 1 1**

**7 Peggy A. Whitson Female 7 1**

**8 Sunita L. Williams Female 7 1**

**9 Susan J. Helms Female 1 1**

**10 Tamara E. Jernigan Female 1 1**

**11 Tracy E. Caldwell (Dyson) Female 3 1**

**# … with abbreviated variable name ¹​`Space Walks`**

# 8 Use and show ggplot coding to produce a box plot in order to

# investigate outliers and the overall distribution for Space

# Walks for males and female astronauts combined. Does the boxplot

# indicate that there are outliers? Using the boxplot, estimate the

# IQR for the data.

# 9 Use and show ggplot coding to produce side by side box plots

# in order to investigate outliers and the overall distributions

# for Space Walks for males and female astronauts separately.

# 10 The histogram displayed below shows that the Space Walks data

# is generally skewed right for all Astronauts (males and females).

# Use and show R code that will produce the histogram displayed.

Chart

Description automatically generated

# 11 Use and show R coding to calculate the average(mean) of

# Space Walks for Male and Female Astronauts separately.

# 12 Does a linear relationship exist between Space Flights and

# Space Walks ? Investigate by using and showing ggplot coding to

# produce a scatter plot. Comment on your findings based on the

# configuration of the scatter plot data points.

# 13 Mae C. Jemison was the first African American female Astronaut.

# Use and show R code that will output her Undergraduate Major,

# Graduate Major, and Alma Mater.

# 14 Use and show R code to determine how many female

# Astronauts were members of the US Air Force or retired

# from the US Air Force at the time that the data set was

# generated.