Data Science with Python
Ticket Out the Door
Set 2: Data Visualization Basics

Name _____ Period _____
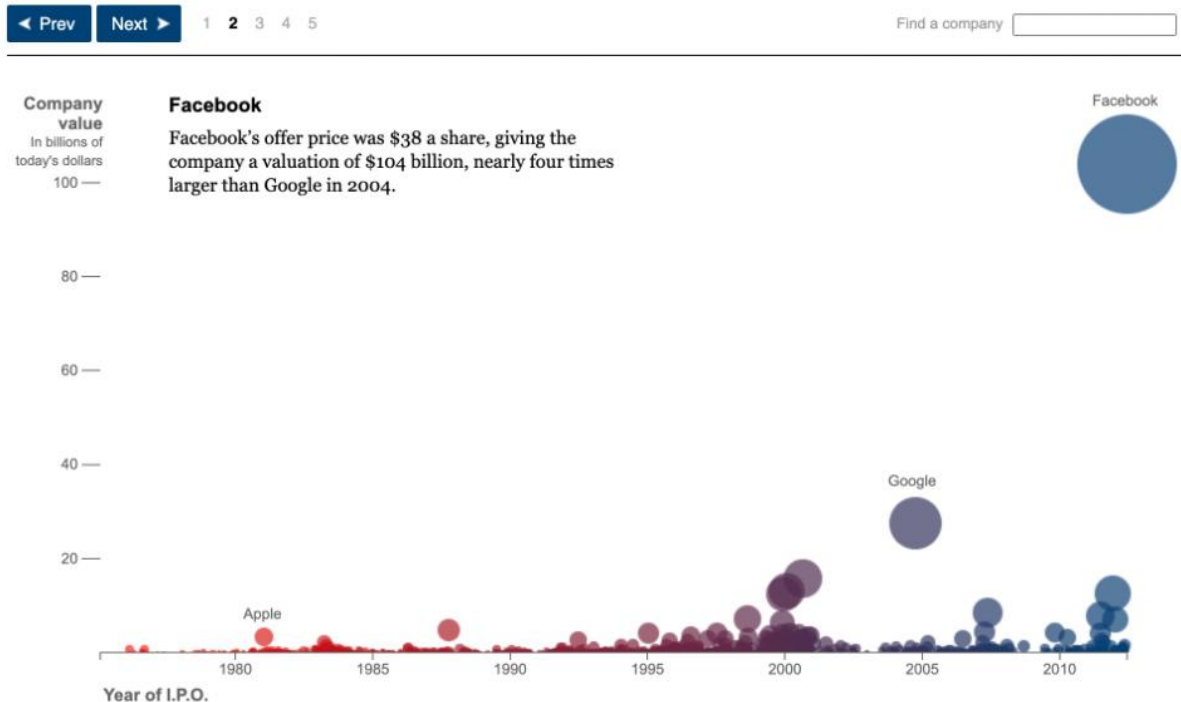
Skill 2.2 Exercise 1	
For each scenario, indicate whether a univariate or bi-variate plot would be most appropriate.	
A basketball coach wants to visualize the distribution of points scored by players on his team	
How does the amount of study time compare to the GPA	
What are the GPAs of students at Timberline	
A basketball coach wants to visualize the points scored by players and the amount of playtime	

Skill 2.3 Exercise 1

Refer to the data vis below,

The Facebook Offering: How It Compares

◄ Prev   Next ►   1 **2** 3 4 5   Find a company [   ]

Company
value
In billions of
today's dollars
100 —

Facebook

Facebook's offer price was $38 a share, giving the
company a valuation of $104 billion, nearly four times
larger than Google in 2004.

Facebook

80 —

60 —

40 —
                                                                Google

20 —

        Apple

        1980   1985   1990   1995   2000   2005   2010

Year of I.P.O.

We already discussed one example of data redundancy in this graph. But there is another, explain.

Name _____ Period _____

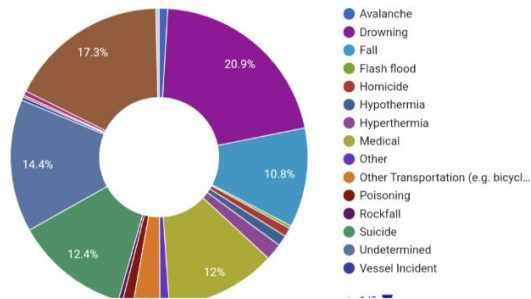| **Skill 2.4 Exercise 1**	
Below are some examples of poor data visualizations. For each, indicate what is wrong, along with how it could be improved using principles of universal design.	

Top messaging apps by country

When Europeans fly nest

Average age at which young people leave the parantel household, 2022

■ below 23 ■ 23-25 ■ 25-27 ■ 27-29 ■ 29-31 ■ over 31

Serial Killers by Country

The US has produced the most known serial killers (3,615) followed distantly by Russia (196.)

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What Are the Top Causes of Death in the National Parks?
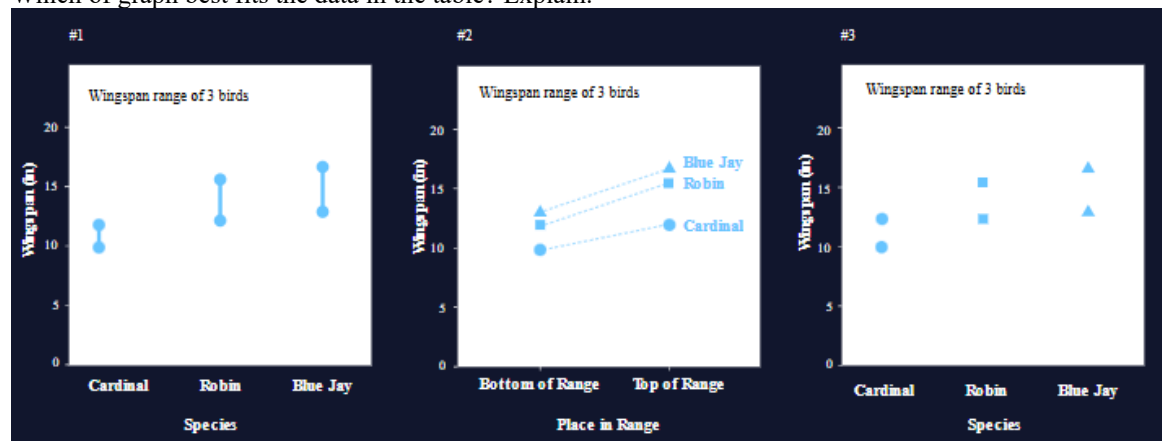
Fatalities in National Parks (2007-2023) by Cause of Death

- Avalanche
- Drowning
- Fall
- Flash flood
- Homicide
- Hypothermia
- Hyperthermia
- Medical
- Other
- Other Transportation (e.g. bicycl...
- Poisoning
- Rockfall
- Suicide
- Undetermined
- Vessel Incident

17.3% 20.9% 14.4% 10.8% 12.4% 12%

Skill 2.5 Exercise 1

You have been tasked with developing a visualization of the wingspans of the three most common backyard birds in Dandelion City: the Northern Cardinal, American Robin, and Blue Jay. With your knowledge of data visualization, your task is to make the most effective visualization of wingspan data to present to the backyard birders of Dandelion City.

Here's the data you are working with:

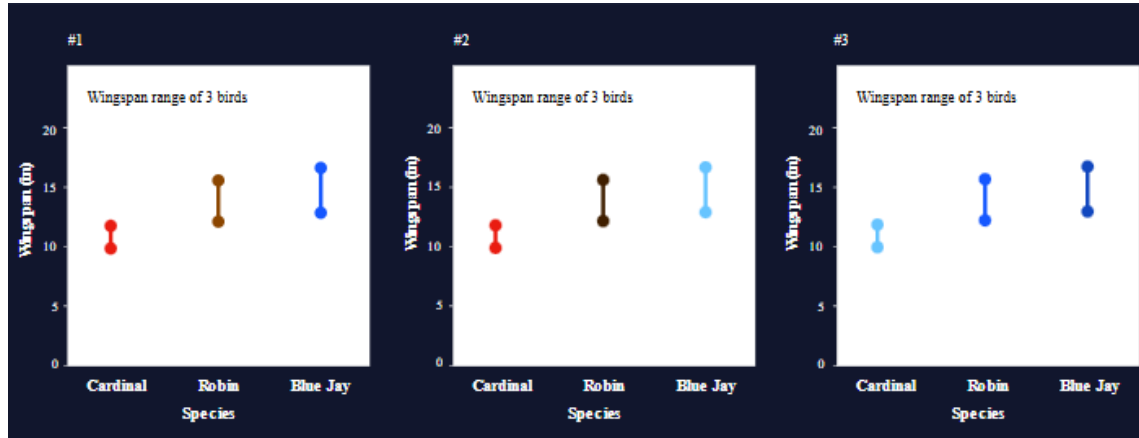| BIRD SPECIES	WINGSPAN RANGE (IN)
Robin	12-16
Cardinal	10-12
Blue Jay	13-17

Which of graph best fits the data in the table? Explain.
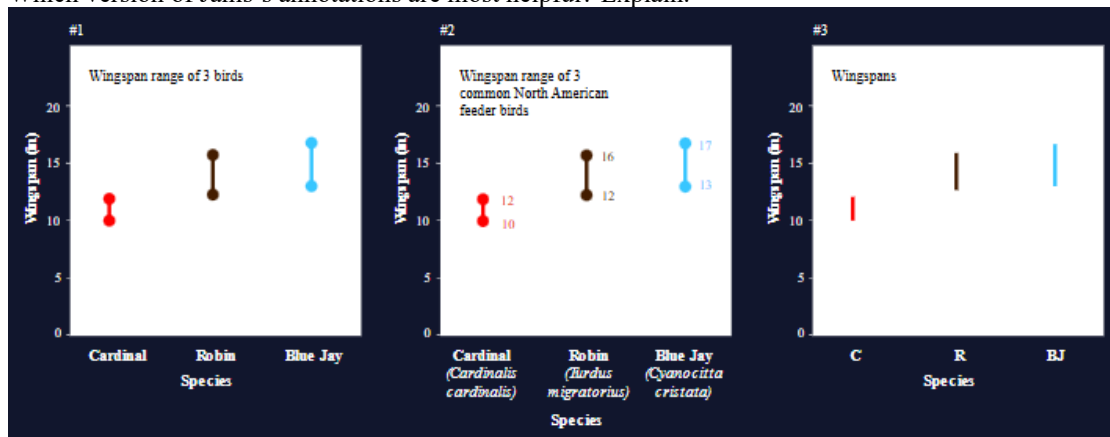
Name _____ Period _____

Now that we've gotten the chart type to align with our data, let's move on to the next important consideration: color.

Which color palette best represents the information in the data table and will be effective for the broadest audience. Explain.

Now let's look at annotations that will help our audience make the most of the final chart.

Which version of Janis's annotations are most helpful? Explain.

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Finally, let's finish up with some design considerations.

Which design helps to communicate information beautifully and effectively. Explain.