SE370 Problem Set #3	Name:
Academic Term 22-2	Hour:

DOCUMENTATION. This problem set is an individual graded assignment. Any assistance received must be documented in line and in detail. Excessive assistance will be penalized (electronic copying assistance is HIGHLY discouraged and will result in significant deductions). Your instructor is your best resource, once you've exhausted google. Their assistance will not be penalized. Document all sources in accordance with the Office of the Dean Pamphlet "Documentation of Academic Work", Appendix E, and course guidance. Documentation must be turned in at the time of submission.

DUE: NLT 1600 25 MARCH 2022

1. This is an individual graded assignment consisting of four problems worth a total of 150 points as shown on the grading summary on Page 2 of this document.

2. Document any assistance received in accordance with the Office of the Dean Pamphlet "Documentation of Academic Work", Appendix E, and course guidance. Present your work in a professional manner to *include a cover sheet with a signed acknowledgement statement.*

3. The deliverable has a digital and hard copy portion.

    a. Digital Copy. Cadets will submit the following work on Teams: a rmarkdown file (.rmd), a knitted HTML file (.html), and a saved PDF file (.pdf). To create the PDF file, knit from rmarkdown to HTML, then save from HTML to PDF (the workflow we covered in class).

    b. **IMPORTANT: Your assignment will not be considered complete until you provide all digital files. You are responsible for making sure your work is submitted correctly. Until submitted correctly, you will lose 5% per 24-hour period.**

4. Name your file "SECTION_LASTNAME_SE370_AY22-2_PS3" followed by the appropriate extension. **Failure to name your files in this format will result in a 5% deduction.**

5. Assignment.

    a. Scenario: The midterm elections occurring in November will play a critical role in shaping the composition of Congress and the legislative agenda for the next two years. Central to the election is the impact of Covid-19 and how the public perceives the impact of the ongoing pandemic. Given poll information, provide your **code** and **visualizations** along with your **analysis** that will provide valuable insights into the public's perception of how the pandemic is being handled.

    b. You will use the "Covid-19 Polls" dataset provided to you on Teams. This dataset consists of 2 files containing poll data on approval ratings of the President's handling of the pandemic and the public's level of concern regarding the pandemic and the economy.

    c. **Questions 1-3** pose a question and show a visualization. This visualization is essentially the answer to the question. Your task is to write code that creates the visualization **exactly as it appears** and provide a correct interpretation of the visualization that answers the question in words.

    d. **Question 4** does not show a visualization, so it is up to you to creatively make your own. As with the previous questions, you must interpret your visualization in words. You **MUST use the Covid Approval Polls** for this question.

    e. Your write-ups will be scored. Poorly communicated results have the potential to seriously damage your grade on this assignment. Simply throwing together a few lines explaining what

visualizations are in general will result in significant deductions. Grammar and spelling are important, and mistakes will be penalized.

Graded Portion	Points
Plot 1 – Summary	40 points
Plot 2 – Pivot/Facet	45 points
Plot 3 – Line	35 points
Plot 4 – Custom	30 points
Total	150

Make the following plots <u>EXACTLY</u> as shown.

Question 1: Public opinion of the President's handling of the COVID-19 pandemic has gone through numerous shifts over the past 2 years. Identify the time frame and key events that led to the changes in approval ratings.
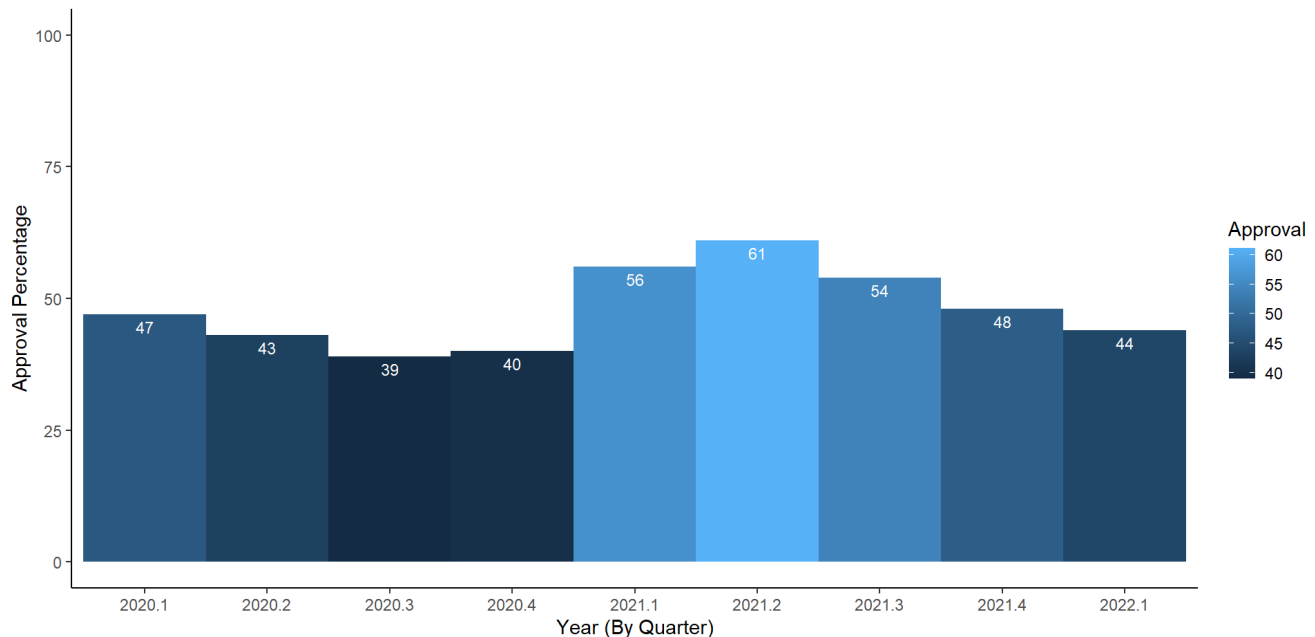
Plot 1:
Hint: You will need to use "all" for party.
Hint: You will need to sort your data by quarter.
Hint: You will need to find the average of your poll approval rating data by quarter.

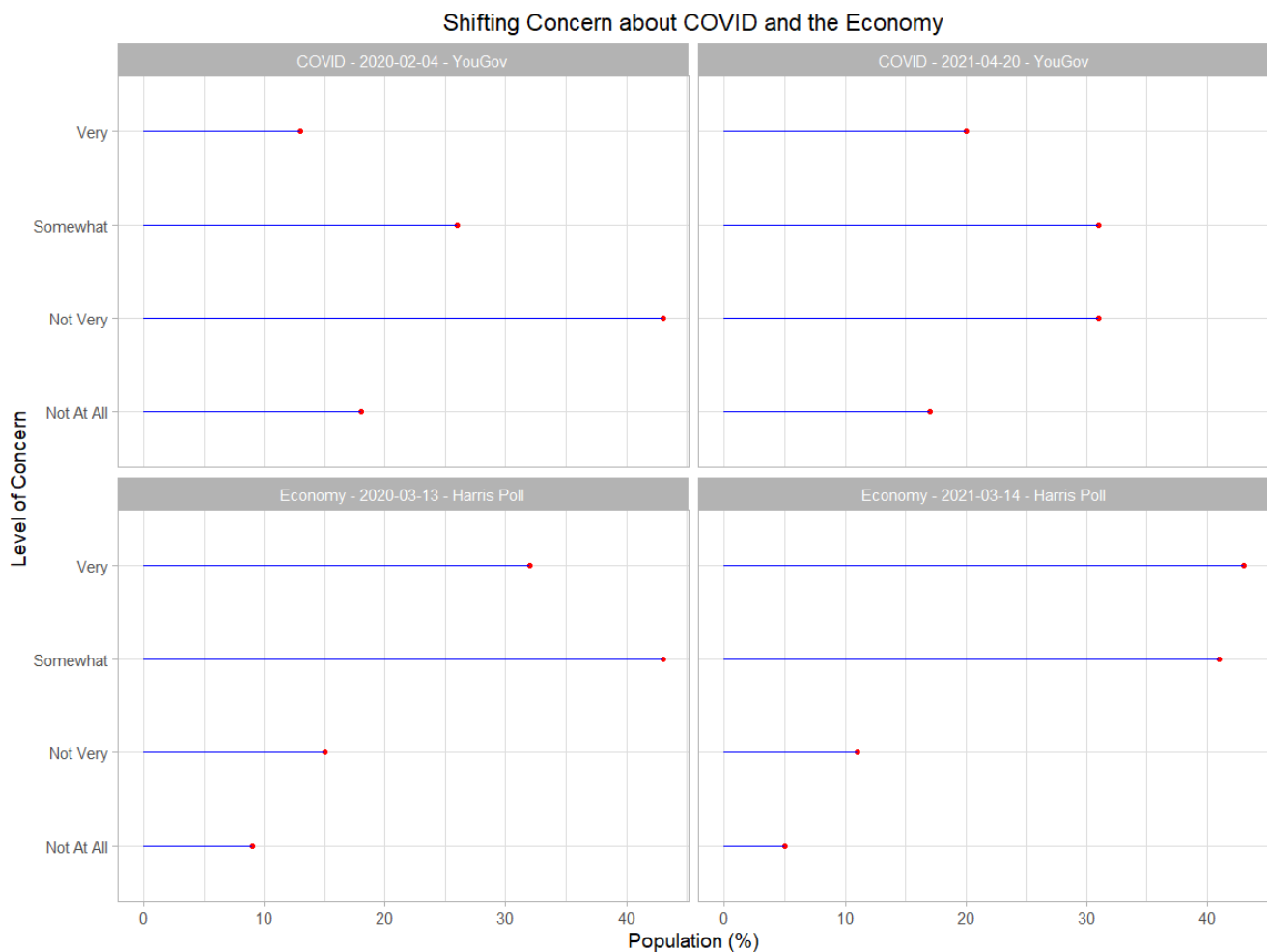Public Opinion of Presidential Handling of COVID-19

Question 2: Looking at poll data that measures public concern about the economy and Covid-19, look at 4 specific poll dates and compare how public concern has shifted over time. Look at Covid-19 concern polls conducted by YouGov with dates of 2020-02-04 and 2021-04-20 and economic concern polls conducted by Harris Poll with dates of 2020-03-13 and 2021-03-14. What happened to public concern about the infection and the economy over time?

Plot 2:
Hint: You will need to convert data types to match what is presented on the graph.
Hint: You will need to flip coordinates.

Shifting Concern about COVID and the Economy

Question 3: The pandemic has become a highly politicized issue with a person's political affiliation playing a large role in how they view Covid-19 response. If a new pandemic similar to Covid - 19 were to occur during the next Presidential transition, what do you predict would happen to the public's opinion based on what happened during the Covid pandemic?
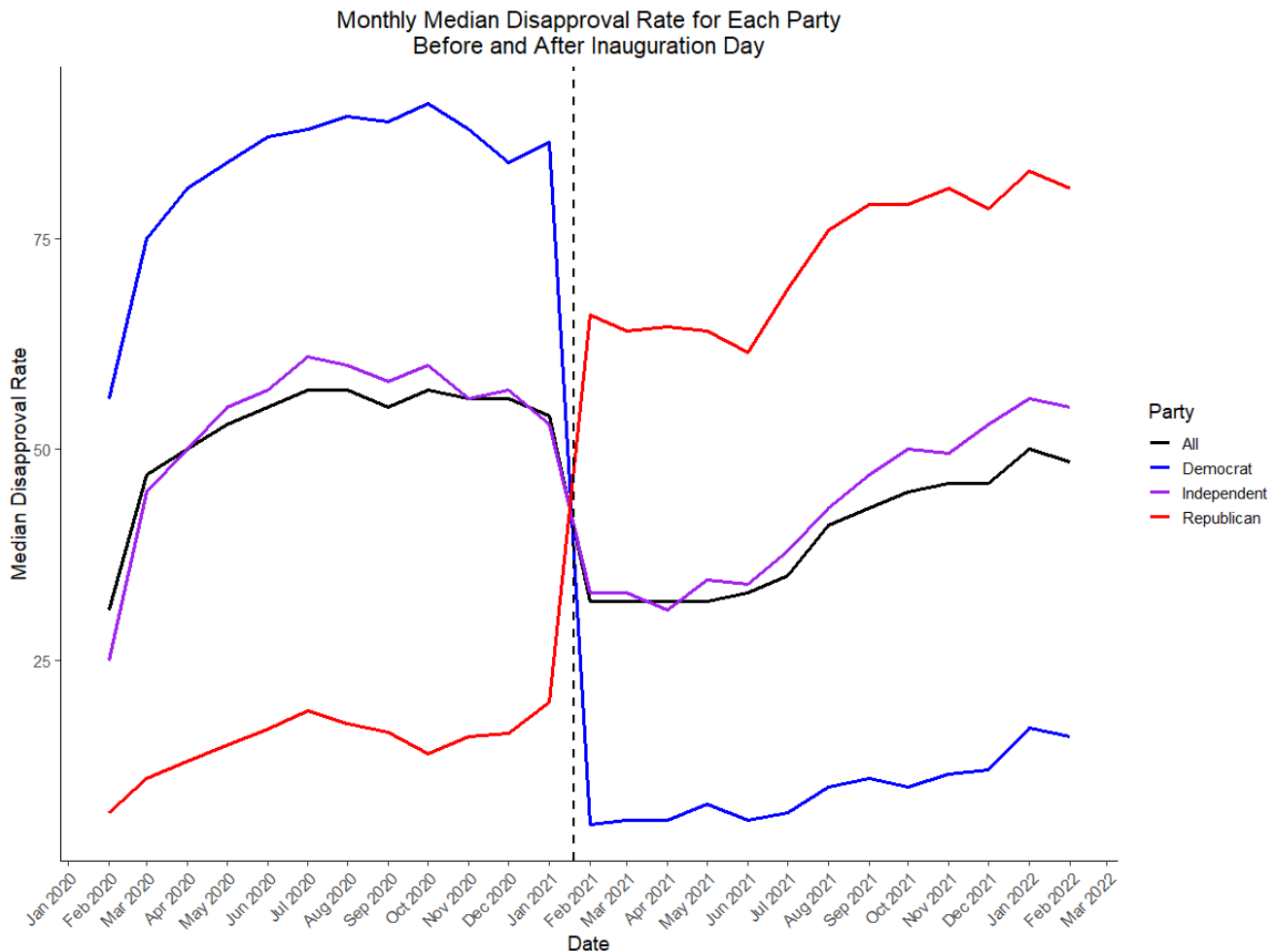
Plot 3:

Hint: You may need to convert dates from characters.
Hint: You will need to find the medial disapproval for each party by month.
Hint: You will need to insert a line representing inauguration day.

Monthly Median Disapproval Rate for Each Party
Before and After Inauguration Day

Question 4: Presidential approval polls are conducted by a range of pollsters and sponsors on both sides of the political spectrum (ie: CNN vs Fox News). Looking at the poll data provided, examine the different poll results to see if there is any difference in the results based on who conducted the poll.

Note 1: Use the Covid Approval Polls data provided.

Note 2: Less obvious answers will receive higher grades.