### **Result Inference**

#### **Box-Whisker Plot:**

1. **Central Tendency and Spread:**
   * The box in each year represents the interquartile range (IQR) from the 25th percentile (Q1) to the 75th percentile (Q3).
   * The line inside each box indicates the median (50th percentile), giving a sense of the central tendency of the votes.
2. **Outliers:**
   * Red dots outside the whiskers are outliers, defined as values lying beyond 1.5 times the IQR from the quartiles.
   * Outliers indicate candidates with significantly different vote counts compared to the majority.
3. **Whiskers:**
   * Whiskers extend to the smallest and largest values within 1.5 \* IQR from the lower and upper quartiles.
   * They provide a sense of the range of 'normal' vote counts for candidates within each year.
4. **Comparative Analysis:**
   * The plot enables a year-by-year comparison of the distribution and spread of votes.
   * Years with wider boxes and longer whiskers indicate higher variability in vote counts.
   * Changes in the median line across years indicate shifts in central tendencies.

#### **Violin Plot:**

1. **Density Estimation:**
   * Each 'violin' shows the distribution of votes for a given year, with the width indicating the density of data points at different vote levels.
   * The violin plot combines elements of a box plot and a kernel density plot to provide a more detailed view of the data distribution.
2. **Quartile Lines:**
   * Lines inside each violin represent the quartiles (Q1, median, Q3), similar to a box plot.
   * These lines provide insight into the spread and central tendency of votes.
3. **Visual Comparison:**
   * The shape of each violin makes it easy to compare the distributions across different years.
   * Thicker areas of the violin indicate more candidates received votes in that range.
   * The overall shape and width of each violin provide a clear visual summary of vote distribution.
4. **Additional Insights:**
   * The violin plot can reveal multimodal distributions, where there are multiple peaks in vote counts within a year.
   * It also shows how votes are clustered around certain values, indicating the popularity of certain candidates.

### **Conclusion**

The Box-Whisker plot provides a straightforward summary of the central tendency, spread, and outliers for candidate votes across different election years. It highlights the variability and identifies extreme values. The Violin plot, on the other hand, offers a richer, more detailed view of the data distribution, showing density and clustering of votes. Together, these plots provide a comprehensive understanding of the vote distribution patterns and variability over the years.