**1. Bar Plot — Titanic Survivors Count**

* **Title:** "Survivors vs non-survivors"
* **Description:** A bar plot showing two bars: one for passengers who did not survive (0) and one for those who survived (1).
* **Interpretation:**
  + The number of non-survivors is significantly higher than survivors.
* **Insight:**
  + Survival was rare; more people died than survived on the Titanic.
  + Survival rate looks roughly ~30-40% at a quick glance.

**2. Histogram — Age Distribution**

* **Title:** "Distribution of Age among Titanic Passengers"
* **Description:** A histogram showing the frequency of passengers in different age ranges.
* **Interpretation:**
  + Most passengers were young adults (20-40 years old).
  + There are smaller peaks for children (under 10 years) and elderly (above 60).
* **Insight:**
  + Titanic carried a wide age range, but middle-aged people were the majority.
  + Few very old passengers were on board.

**3. Bar Plot — Survival by Sex**

* **Title:** "Survival Rate by Gender"
* **Description:** A bar plot showing survival numbers divided by gender (male and female).
* **Interpretation:**
  + Females had a higher survival rate than males.
  + Males had more deaths than survival.
* **Insight:**
  + "Women and children first" policy probably influenced survival rates.
  + Gender played a critical role in survival chances.

**4. Pair Plot — Relationships Between Variables**

* **Title:** "Pair Plot of Age, Fare, Pclass, and Survived"
* **Description:** A matrix of scatter plots comparing multiple features pairwise.
* **Interpretation:**
  + Some clustering by survival status is visible.
  + Higher fare passengers tended to survive more.
  + Lower class passengers (Pclass 3) were less likely to survive.
* **Insight:**
  + Class and ticket fare positively correlate with survival chances.
  + Younger passengers were slightly more likely to survive.

**5. Heatmap — Correlation Matrix**

* **Title:** "Correlation Between Features"
* **Description:** A heatmap showing the strength of correlation between variables like Age, Fare, Survived, and Pclass.
* **Interpretation:**
  + Fare and Pclass are strongly negatively correlated (higher class → higher fare).
  + Pclass is negatively correlated with survival (higher class → higher survival).
* **Insight:**
  + Socioeconomic status (ticket class/fare) influenced survival rates.
  + Age has little correlation with survival.

**6. Bar Plot — Average Age by Sex**

* **Title:** "Average Age by Gender"
* **Description:** A bar plot showing the average age of male and female passengers.
* **Interpretation:**
  + Males and females had similar average ages (with males slightly older).
* **Insight:**
  + No strong age-based gender difference among Titanic passengers.
  + Differences in survival rates were more gender-driven than age-driven.

**7. Histogram — Age Distribution (Alternate)**

* **Title:** "Alternate View: Age Distribution"
* **Description:** A histogram similar to Image 2, possibly with a different style.
* **Interpretation:**
  + Reinforces the conclusion that most passengers were aged between 20 and 40.
* **Insight:**
  + Repetition of the first age distribution — depending on the style, one may be easier to read for presentations.

**8. Histogram — Fare Distribution**

* **Title:** "Distribution of Fare Prices"
* **Description:** A histogram showing how many passengers paid different ticket prices.
* **Interpretation:**
  + Most fares were low (~0-50 units), with a few outliers paying very high fares (>100).
* **Insight:**
  + Titanic had many third-class (economy) passengers.
  + Only a small number could afford the very high-end tickets.

**9. Pie Chart — Survival Percentage**

* **Title:** "Survival Distribution (Pie Chart)"
* **Description:** A pie chart showing proportions of survivor’s vs non-survivors.
* **Interpretation:**
  + Visual confirmation that most passengers did not survive.
* **Insight:**
  + Clear and emotional depiction of the disaster's scale.
  + Good for visual storytelling in reports or presentations.

**📋 Summary Conclusion**

| **Graph Type** | **Strongest For** | **Weakness** |
| --- | --- | --- |
| Bar Plots | Comparing categories (survivors, gender) | Can be basic |
| Histograms | Showing distributions (age, fare) | Overlap, redundancy |
| Pair Plot | Visual exploration of multi-variable relations | Complex for audiences |
| Correlation Heatmap | Identifying numeric relationships | Abstract for beginners |
| Pie Chart | Telling an emotional proportion story | Limited details |