Detailed Report Of all the 11 Questions

Here's a short analysis for each of the 11 questions:

**1. Missing Values in the Dataset (Heatmap)**

* A heatmap is used to visualize missing values, revealing that there are gaps in the **Revenue** and **Metascore** columns. This step helps in identifying incomplete data, which may require filling or excluding for accurate analysis.

**2. Votes by Year (Barplot)**

* The barplot shows the distribution of votes received by movies each year. It helps in identifying trends in audience engagement, such as whether older or newer movies receive more attention from viewers.

**3. Average Revenue by Year (Barplot)**

* This plot highlights the trend in average movie revenue over the years. You may observe that certain years have higher revenues, indicating successful periods in the film industry or the release of blockbuster movies.

**4. Runtime by Movie Title (Barplot)**

* Here, you compare the runtime of movies by their title. It shows which movies are longer or shorter, which can influence their box office performance or audience preferences.

**5. Number of Movies Per Year (Countplot)**

* This countplot displays the number of movies released each year. It provides an understanding of the industry's production rate, showing whether there’s an increase or decrease in movie production over time.

**6. Rating by Movie Title with Director (Barplot with hue)**

* The barplot shows how movie ratings vary for different movies, categorized by directors. This gives insights into which directors tend to produce higher-rated films, aiding in recognizing top talent in the industry.

**7. Ratings vs. Revenue (Scatterplot)**

* This scatterplot visualizes the relationship between movie ratings and revenue. The analysis might suggest that higher-rated movies tend to earn more, although there could be outliers where lower-rated movies still perform well financially.

**8. Distribution of Genres (Pie Chart)**

* The genre distribution analysis shows which movie genres dominate the dataset. In your case, **Drama** and **Action** appear as the most popular genres, possibly reflecting audience preferences or production trends.

**9. Top 10 Movies by Length (Barplot)**

* The top 10 longest movies are compared in this barplot. This analysis can be used to observe whether longer movies tend to perform better or worse in terms of ratings or revenue.

**10. Metascore Analysis**

* Although not explicitly visualized in the charts, the presence of the **Metascore** column allows analysis of how critical reviews impact the success of movies, potentially influencing audience choices and revenue.

**11. Top Actors and Directors**

* While specific charts for actors and directors were not included, this can be explored to see which actors and directors have the most movies or the highest ratings. This would help identify top contributors to successful films.