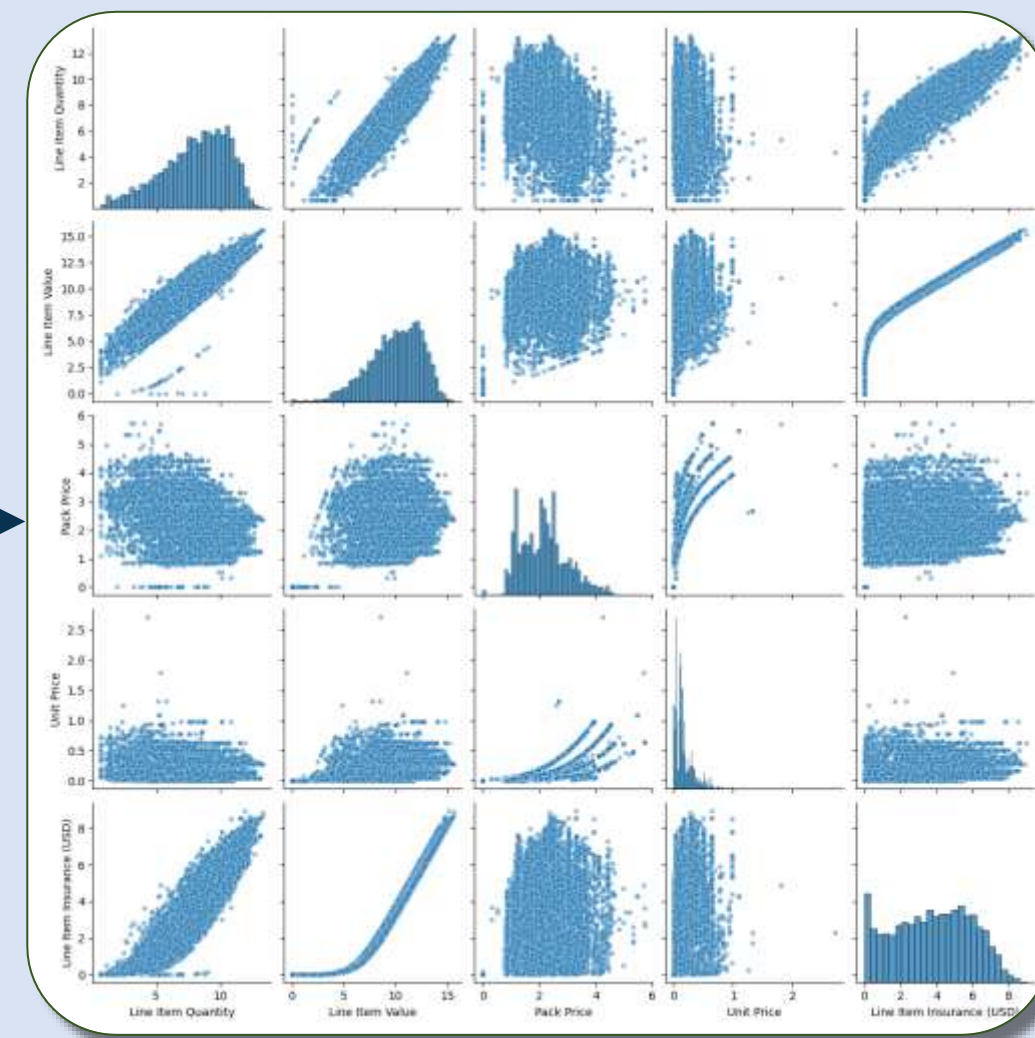
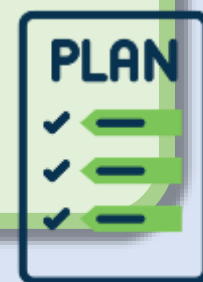




## A) Exploratory Visual Analysis

**Action:** Generate a pairplot to visualize relationships ....., to identify any potential patterns or outliers

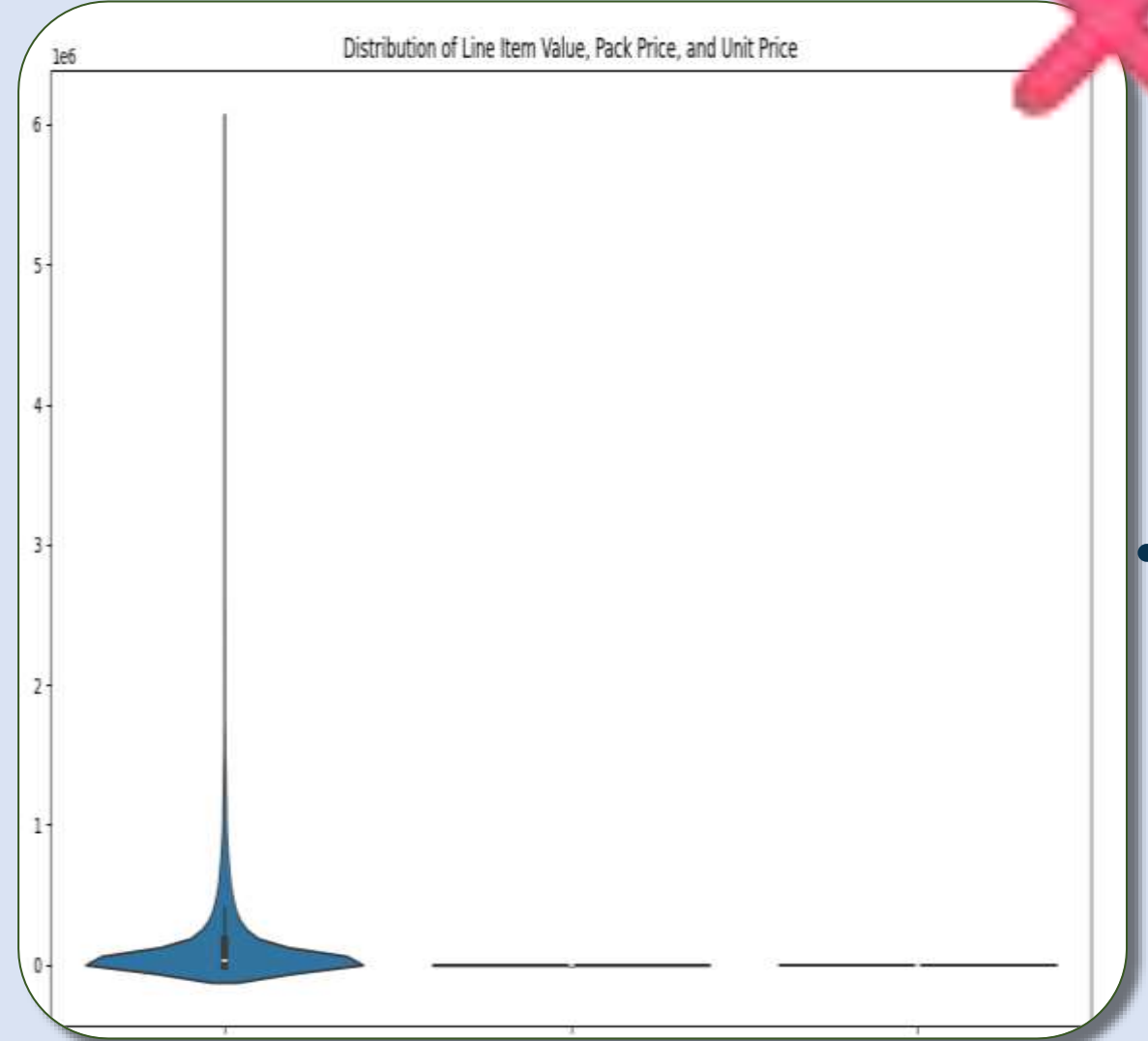


### Insights:

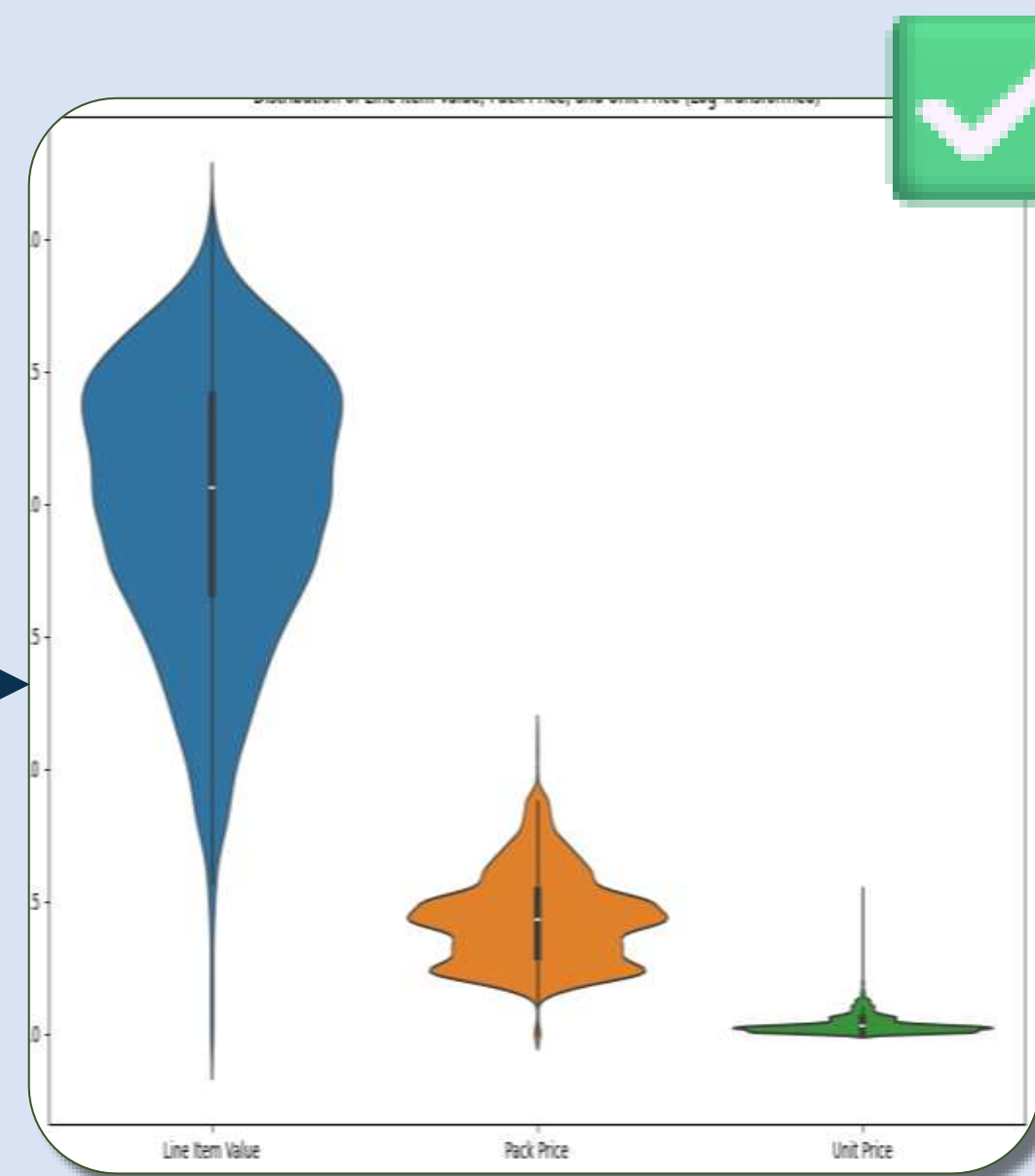
1. There are **strong positive correlations**...
2. 'Pack Price' shows a **right skew**, ...
3. 'Pack Price' and 'Unit Price' show **clusters**, with some extreme **outliers**...
4. Some scatter plots exhibit **non-linear patterns**, suggesting that...



## C) Visual Reflection



**Reflection:** The 'Line Item Value' is very narrow and **concentrated near zero**... the distributions of 'Pack Price' and 'Unit Price' **appear as flat lines**... Maybe the data is not properly scaled... Consider using a **logarithmic scale** to better visualize the data.



## B) Programmatic Reflection

```
import pandas as pd
.....
fare_stats = {
    'min': data['fare_amount'].min(),
    'max': data['fare_amount'].max(),
}
.....
```



### Output:

**min: -7.3**  
max: 130.0  
mean: 11.3  
std: 9.67



**Reflection:** The minimum fare is **negative**, which is **invalid**... Consider **filtering these values** before recalculating.....



```
.....
data = data[data['fare_amount'] > 0]
fare_stats = {
    'min': data['fare_amount'].min(),
    'max': data['fare_amount'].max(),
}
.....
```



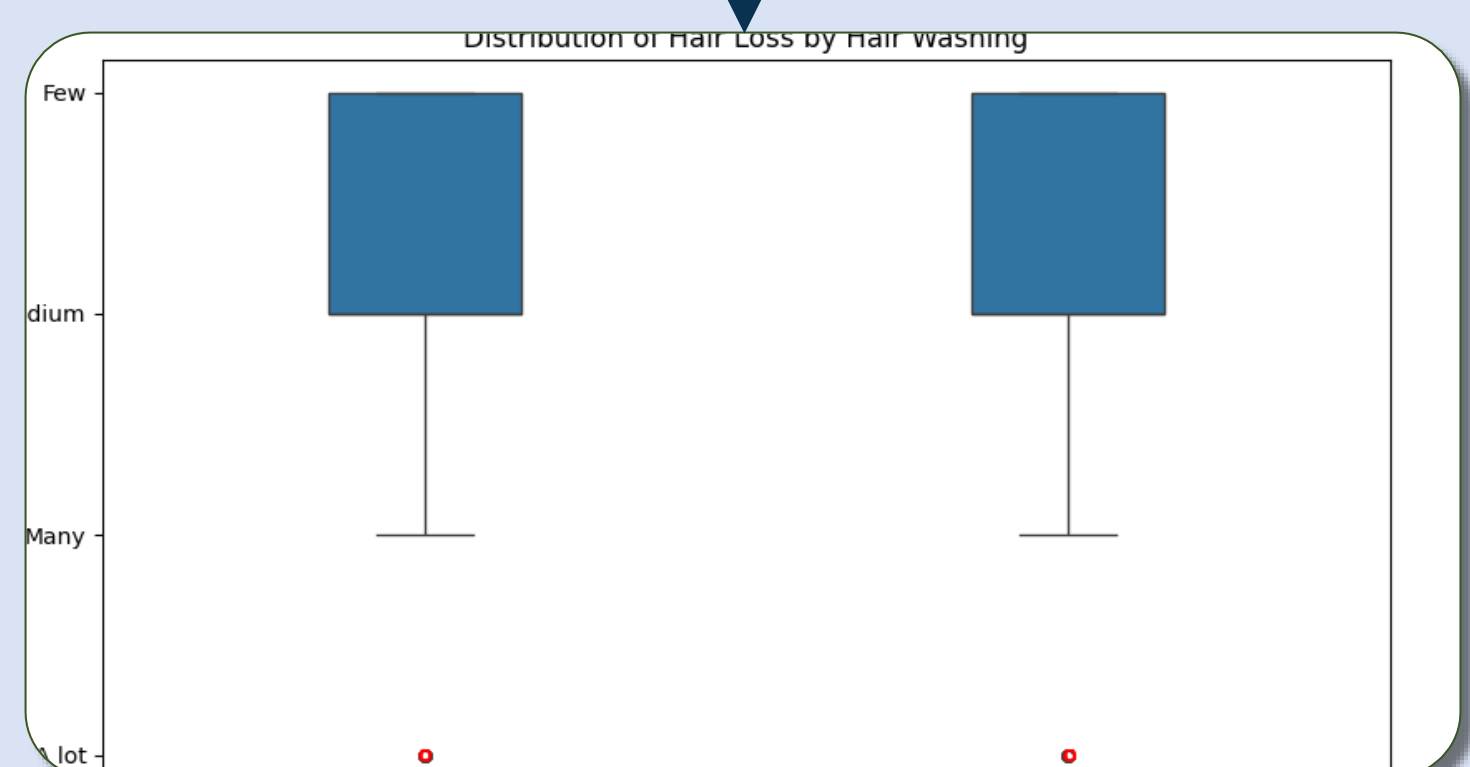
### Output:

**min: 2.5**  
max: 130.0  
mean: 11.3  
std: 9.67



## D) Cross-Modal Validation

**Action-Visual Team:**  
Generate a box plot to visualize the distribution of 'hair\_loss' for different values of 'hair\_washing'

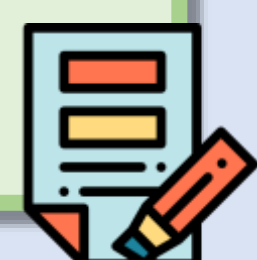


**Action-Program Team:**  
Perform a chi-squared test of independence between 'hair\_washing' and 'hair\_loss' to determine....



**χ<sup>2</sup> Stats:** 1.48959250  
**P-value:** 0.68467444  
**Degrees of Freedom:** 3  
**Expected frequencies:**  
[[ 11.44444444.....

The boxplot shows a **similar distribution**... Finally, there is a **weak association** between 'hair\_washing' and 'hair\_loss'.



## E) Data Report

**Task:** I want to analyze user behavior to identify potential partnership opportunities with.....

### Findings:

1. The dating app primarily attracts a **young demographic**, with an average user age of 23 years and a substantial user base of 3,973 individuals.....
2. Users exhibit **high levels of engagement**, receiving an average of 172.55 kisses and 3,420.41 profile visits, suggesting that while interactions are abundant, they tend to favor profile browsing over the expression of affection.....
3. Average engagement statistics **vary by city**, with significant disparity between profile visits and kisses, suggesting cultural differences in user behavior. The top cities for profile visits.....

### Suggestions:

1. Strategic Partnerships: Given the youthful demographic, seek partnerships **with brands that target Gen Z and younger Millennials**, such as fashion and tech companies.....
2. Enhanced Engagement Initiatives: Develop **features that encourage users to express affection more visibly**, such as gamified interactions or collaborative events that tie into.....
3. City-Specific Marketing: Create **tailored marketing strategies for cities with high engagement metrics but low affection exchanges**; this could involve localized.....