Start coding or generate with AI.

```
# 📦 Import libraries
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# 📥 Load the data
df = pd.read_csv('listings.csv')

# 🔍 Preview the data
print(df.head())
print(df.info())

# 🧼 Data Cleaning
df['price'] = df['price'].replace('[\$,]', '', regex=True).astype(float)
df['last_review'] = pd.to_datetime(df['last_review'], errors='coerce')

# 🔎 Subset important columns for EDA
columns_needed = ['id', 'name', 'host_id', 'neighbourhood_group', 'neighbourhood',
                  'latitude', 'longitude', 'room_type', 'price', 'minimum_nights',
                  'number_of_reviews', 'reviews_per_month', 'availability_365']
df = df[columns_needed]

# 📊 Basic Stats
print("Average Price:", df['price'].mean())
print("Most Common Room Type:", df['room_type'].mode()[0])
print("Top Neighbourhoods:\n", df['neighbourhood'].value_counts().head())

# 📈 Visualizations
sns.set(style="whitegrid")

# 🔹 Price distribution
plt.figure(figsize=(10, 5))
sns.histplot(df['price'], bins=50, kde=True)
plt.title('Price Distribution')
plt.xlim(0, 500)
plt.xlabel('Price')
plt.ylabel('Number of Listings')
plt.show()

# 🔹 Room type count
plt.figure(figsize=(8, 4))
sns.countplot(data=df, x='room_type', palette='Set2')
plt.title('Room Type Distribution')
plt.ylabel('Count')
plt.show()

# 🔹 Listings per Neighbourhood (Top 10)
plt.figure(figsize=(12, 5))
top_neigh = df['neighbourhood'].value_counts().nlargest(10)
sns.barplot(x=top_neigh.index, y=top_neigh.values, palette='coolwarm')
plt.xticks(rotation=45)
plt.title('Top 10 Neighbourhoods by Listings')
plt.ylabel('Number of Listings')
plt.show()
```

```
# 🔹 Availability vs Price
plt.figure(figsize=(10, 5))
sns.scatterplot(data=df, x='availability_365', y='price', hue='room_type', alpha=0.6)
plt.title('Availability vs Price by Room Type')
plt.xlabel('Availability (days/year)')
plt.ylabel('Price')
plt.show()
```

```
      id                                              name  host_id  \
0  27886  Romantic, stylish B&B houseboat in canal district    97647
1  28871                            Comfortable double room   124245
2  29051                     Comfortable single / double room   124245
3  44391    Quiet 2-bedroom Amsterdam city centre apartment   194779
4  47061                     Charming apartment in old centre   211696

  host_name  neighbourhood_group           neighbourhood  latitude  longitude  \
0      Flip                  NaN            Centrum-West  52.38761    4.89188
1     Edwin                  NaN            Centrum-West  52.36775    4.89092
2     Edwin                  NaN            Centrum-Oost  52.36584    4.89111
3       Jan                  NaN            Centrum-Oost  52.37168    4.91471
4      Ivar                  NaN  De Baarsjes - Oud-West  52.36786    4.87458

         room_type  price  minimum_nights  number_of_reviews last_review  \
0     Private room  132.0               3                302  2025-06-11
1     Private room   78.0               2                710  2025-06-16
2     Private room   70.0               2                822  2025-06-14
3  Entire home/apt    NaN               3                 42  2022-08-20
4  Entire home/apt  120.0               2                203  2025-05-29

   reviews_per_month  calculated_host_listings_count  availability_365  \
0               1.85                               1                53
1               3.93                               2               130
2               4.74                               2               121
3               0.23                               1                 0
4               1.13                               1                66

   number_of_reviews_ltm                   license
0                     28  0363 974D 4986 7411 88D8
1                     93  0363 607B EA74 0BD8 2F6F
2                     86  0363 607B EA74 0BD8 2F6F
3                      0  0363 E76E F06A C1DD 172C
4                      5  0363 1266 8C04 4133 E6AC
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10168 entries, 0 to 10167
Data columns (total 18 columns):
 #   Column                          Non-Null Count  Dtype
---  ------                          --------------  -----
 0   id                              10168 non-null  int64
 1   name                            10168 non-null  object
 2   host_id                         10168 non-null  int64
 3   host_name                       10164 non-null  object
 4   neighbourhood_group             0 non-null      float64
 5   neighbourhood                   10168 non-null  object
 6   latitude                        10168 non-null  float64
 7   longitude                       10168 non-null  float64
 8   room_type                       10168 non-null  object
 9   price                           6321 non-null   float64
 10  minimum_nights                  10168 non-null  int64
 11  number_of_reviews               10168 non-null  int64
 12  last_review                     9198 non-null   object
 13  reviews_per_month               9198 non-null   float64
 14  calculated_host_listings_count  10168 non-null  int64
 15  availability_365                10168 non-null  int64
 16  number_of_reviews_ltm           10168 non-null  int64
 17  license                         10062 non-null  object
dtypes: float64(5), int64(7), object(6)
memory usage: 1.4+ MB
None
Average Price: 364.92216421452304
Most Common Room Type: Entire home/apt
Top Neighbourhoods:
 neighbourhood
De Baarsjes - Oud-West     1763
```