1. Visualizing Sales Trends

- **Line Charts**:
    - Plot **Gross Sales**, **Net Sales**, and **Returns** over time (daily, monthly, or weekly).
    - Overlay trendlines or moving averages to smooth fluctuations.
- **Year-on-Year Comparison**:
    - If you have multiple years, compare sales trends across years to observe recurring patterns.

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2. Analyzing Seasonal Patterns

- **Monthly Seasonality**:
    - Aggregate sales by month across all years to identify high and low seasons.
    - Example: January tends to be slow, while November has peaks (e.g., Black Friday).
- **Day-of-Week Analysis**:
    - Summarize sales by weekday to identify the busiest and slowest days.
- **Hour-of-Day Trends**:
    - If your data includes timestamps, analyze hourly sales to spot peak purchasing times.

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3. Returns Analysis

- Calculate the **return rate** (Returns / Gross Sales) over time.
- Determine whether returns are concentrated in certain periods (e.g., post-holiday season).

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4. Anomaly Detection

- Identify any unusually high or low sales days.
    - Plot moving averages with confidence intervals to spot deviations.
- Investigate possible reasons (e.g., promotions, stockouts, external events).

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5. Feature Engineering for Seasonality

Add the following columns to your dataset for deeper insights:

- **Month**: Categorize each sale by month.
- **Week Number**: Group data by week of the year.
- **Day of Week**: Identify sales patterns by day.

- **Season**: Add a categorical variable (e.g., Spring, Summer, Fall, Winter).

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6. Correlation with External Factors

- Check for correlations with external data (if available), such as:
    - Holidays or major events.
    - Marketing campaigns or discounts.
    - Weather conditions (if location-based data is available).

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7. Statistical Testing

- Conduct **Seasonal Decomposition**:
    - Break down sales into **trend**, **seasonal**, and **residual** components.
- Perform **t-tests** or **ANOVA**:
    - Test if sales significantly differ by month, weekday, or other time periods.

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8. Forecasting

- If you identify strong seasonal patterns, you can apply time series models like:
    - ARIMA (Autoregressive Integrated Moving Average).
    - Prophet (for seasonality-aware forecasting).
    - Exponential smoothing (Holt-Winters).

Example Questions to Answer

- Are there any months or days consistently outperforming others?
- Is the return rate higher during certain periods?
- How do sales change before, during, or after holidays?
- Can trends predict sales drops or spikes?

Would you like guidance on implementing any of these steps in Python, Tableau, or Excel?