

SALES DATA ANALYSIS REPORT

Executive Summary

- Canon Imageclass 2200 Advanced Copier and Fellowes Pb500 Electric Punch Plastic Comb Binding Machine With Manual Bind account for most of the sales revenue.
- North Dakota underperforms.
- Performance is fluctuating rather than being consistent and steady

Data Cleaning

Steps Taken to clean the Dataset:

- Check for Missing Values
- Filling Missing Values
- Checking for duplicates
- Check data types of the columns
- Turning the order date and ship date to datetime columns
- Turning the necessary columns into categorical dtypes to save on memory.
- String cleaning column names and column values
- Exporting Data

Missing Data: Postal code column had 11 missing values

Data Summarization:

KPIs:

- Total Sales: \$2,261,536.78
- Best Performing categories:

Category	Revenue
Technology	827,455.87
Furniture	728,658.58
Office Supplies	705,422.33

- Total Units Sold: 9,800

Sub-categories Performance:

Rank	Sub-Category	Revenue
1	Phones	\$327,782.45
2	Chairs	\$322,822.73
3	Storage	\$219,343.39
4	Tables	\$202,810.63
5	Binders	\$200,028.78
6	Machines	\$189,238.63
7	Accessories	\$164,186.70
8	Copiers	\$146,248.09
9	Bookcases	\$113,813.20
10	Appliances	\$104,618.40
11	Furnishings	\$89,212.02
12	Paper	\$76,828.30
13	Supplies	\$46,420.31
14	Art	\$26,705.41
15	Envelopes	\$16,128.05

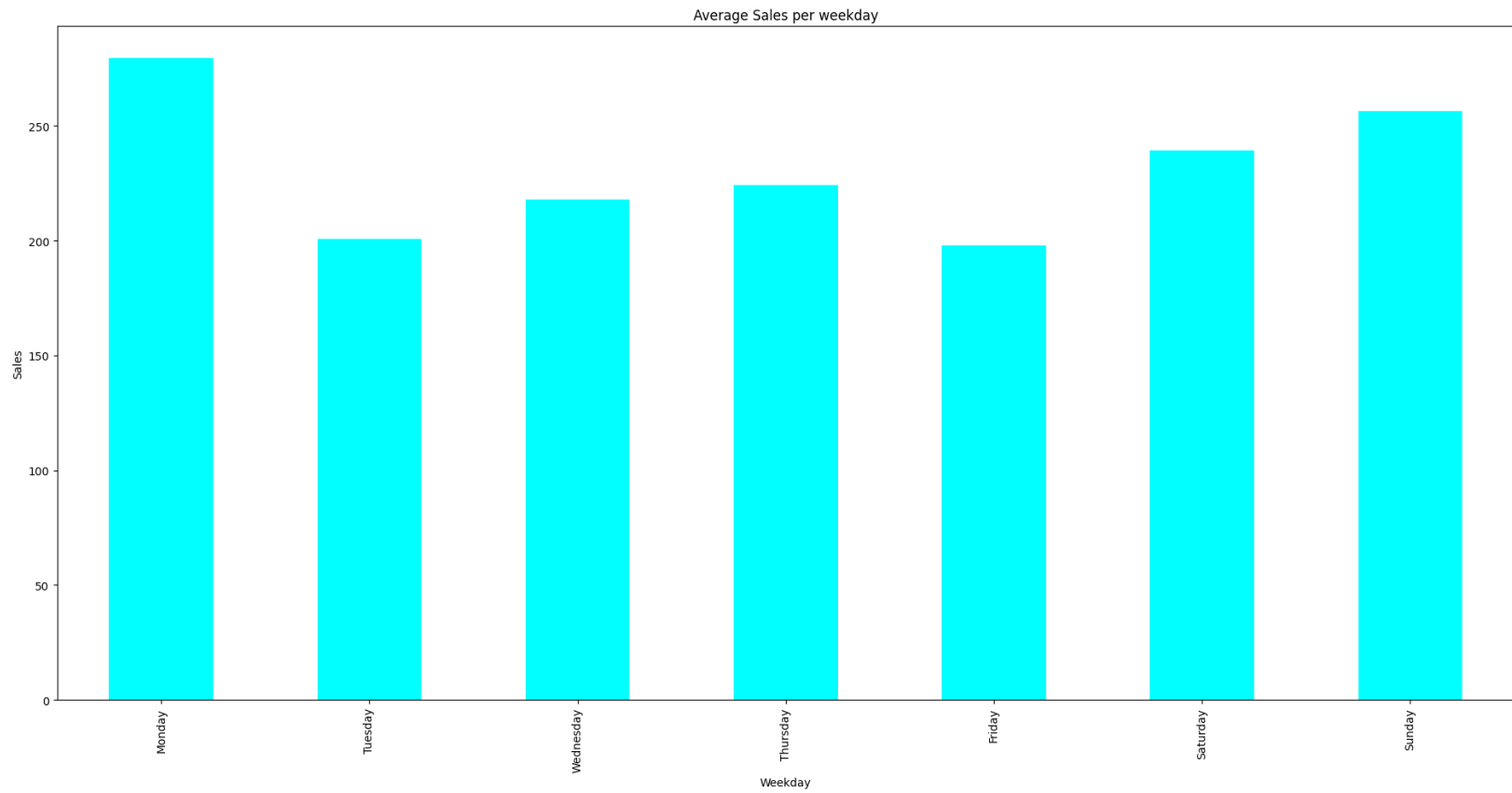
Rank	Sub-Category	Revenue
16	Labels	\$12,347.73
17	Fasteners	\$3,001.96

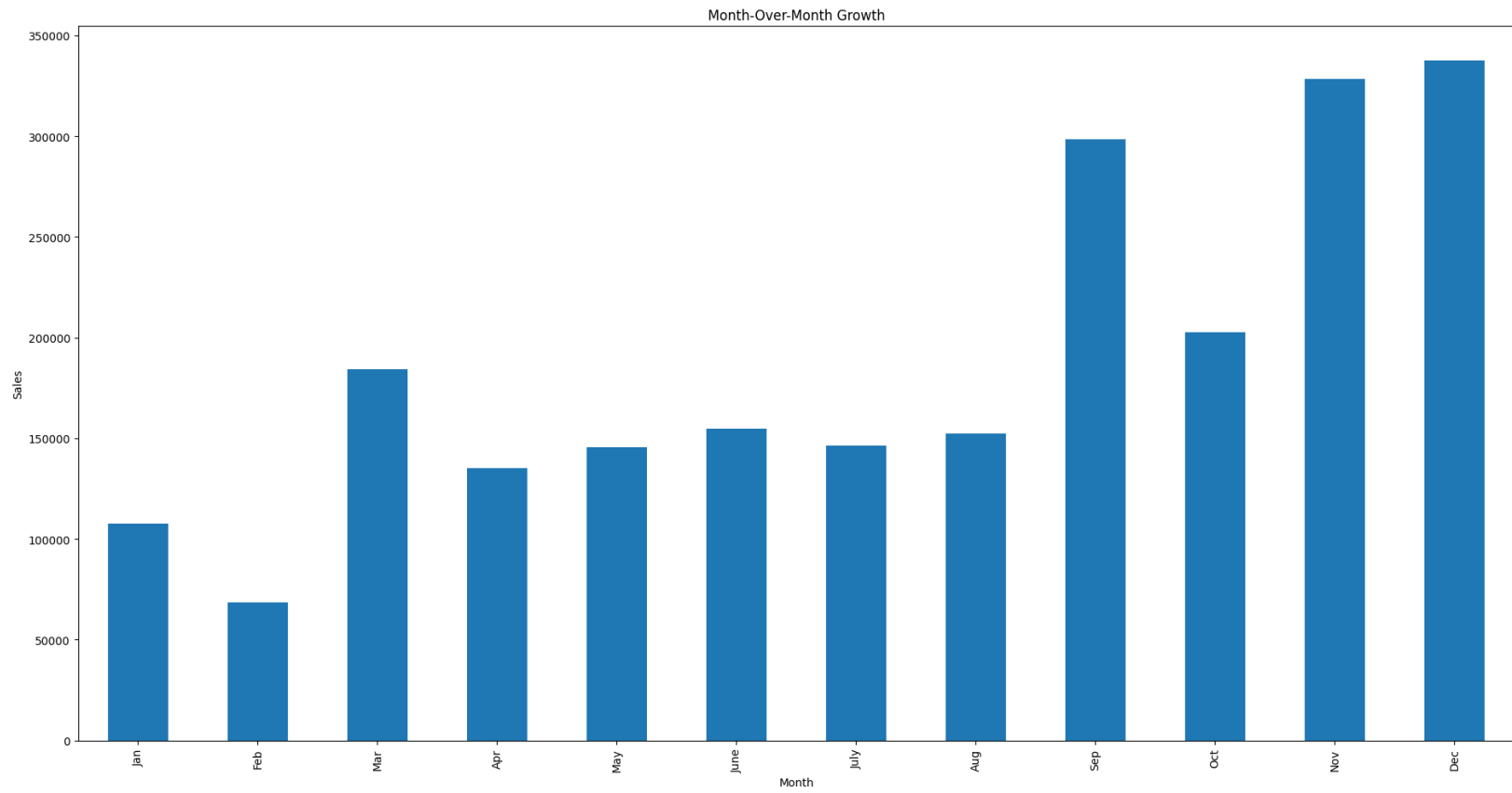
- Number of unique products: 1,849
- Region with highest revenue:

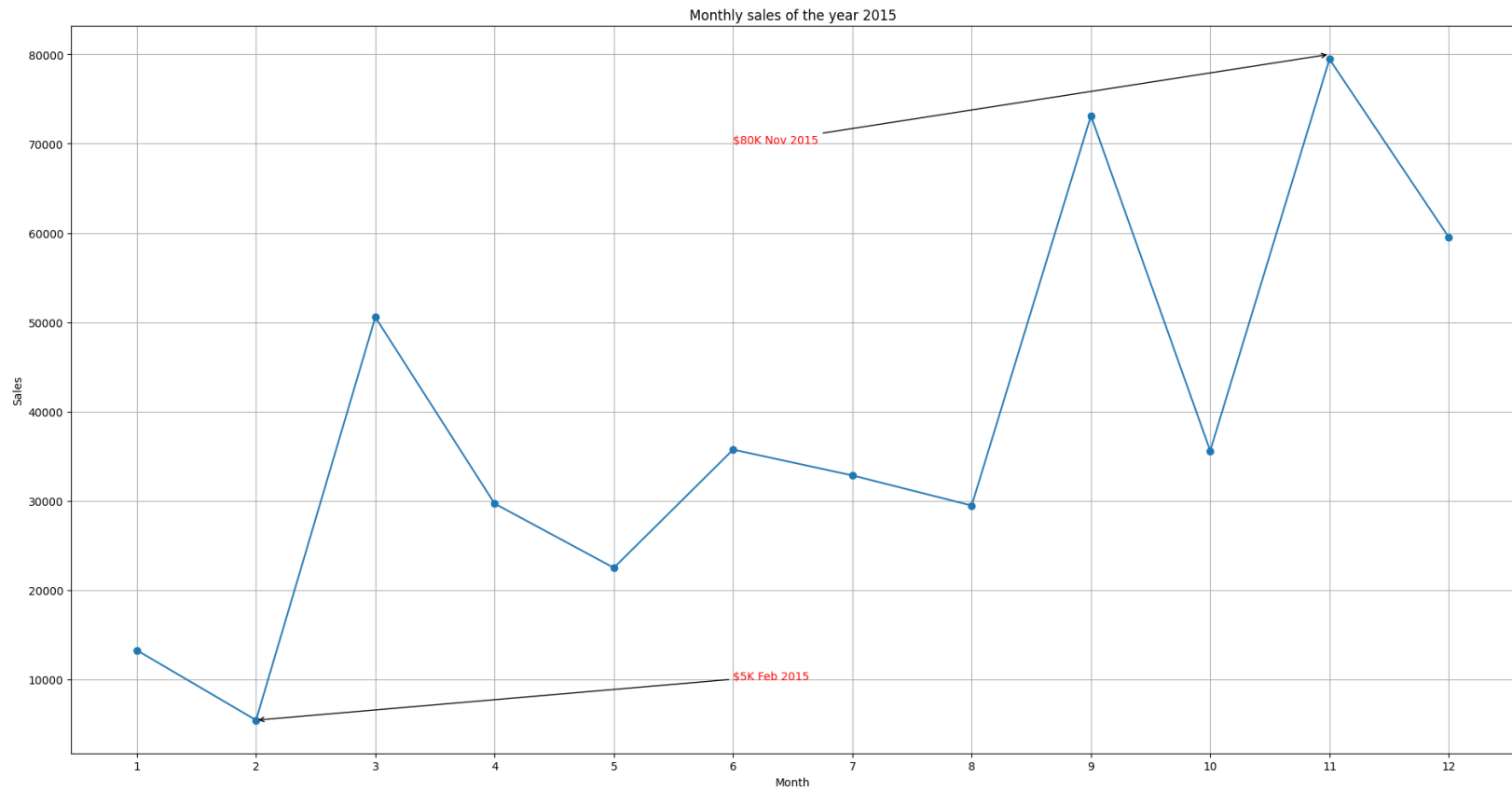
Region	Revenue
Central	\$492,646.91
East	\$669,518.73
South	\$389,151.46
West	\$710,219.68

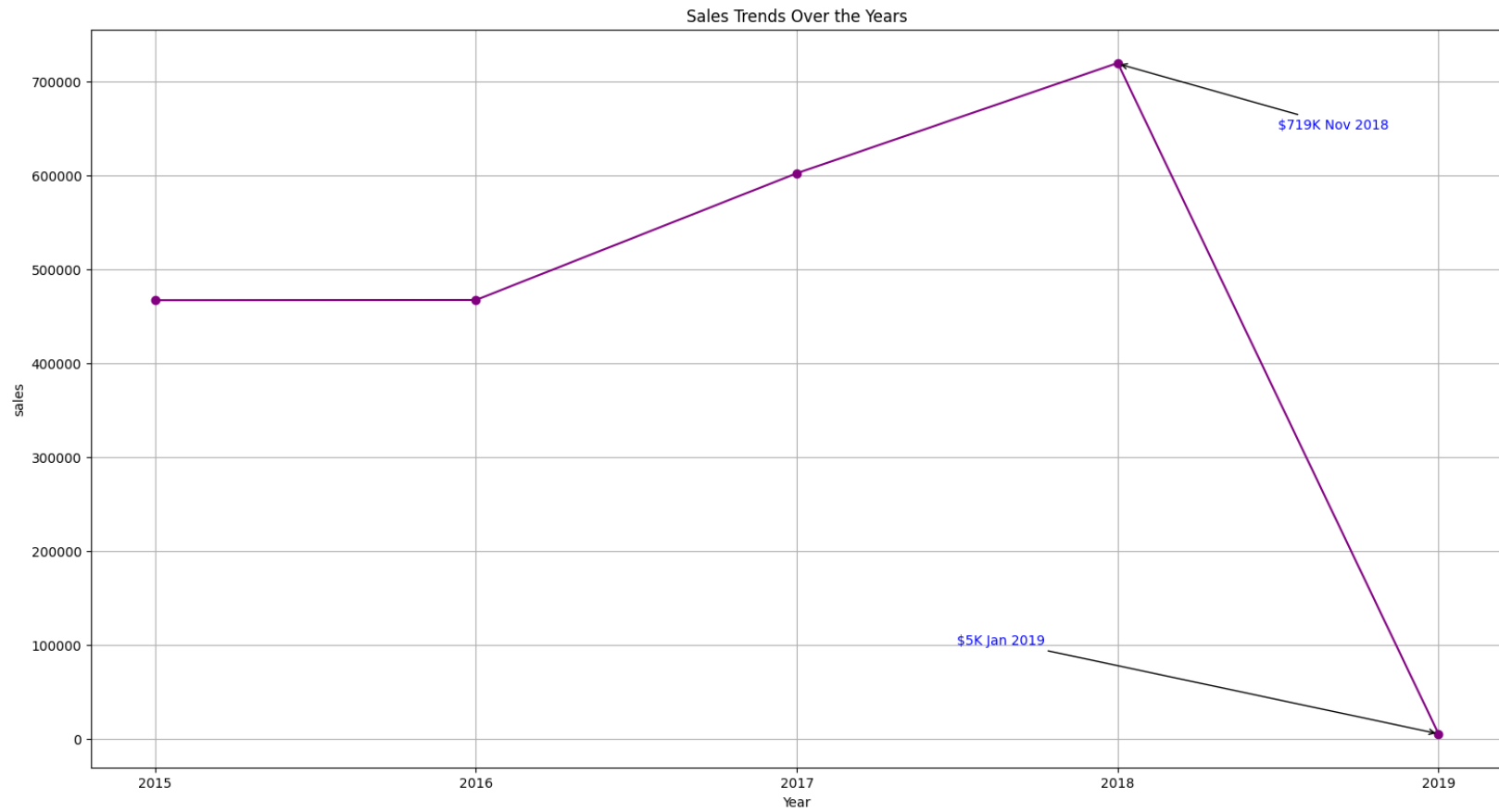
- Average Monthly Revenue: \$188,461.4

Trend and Pattern Analysis

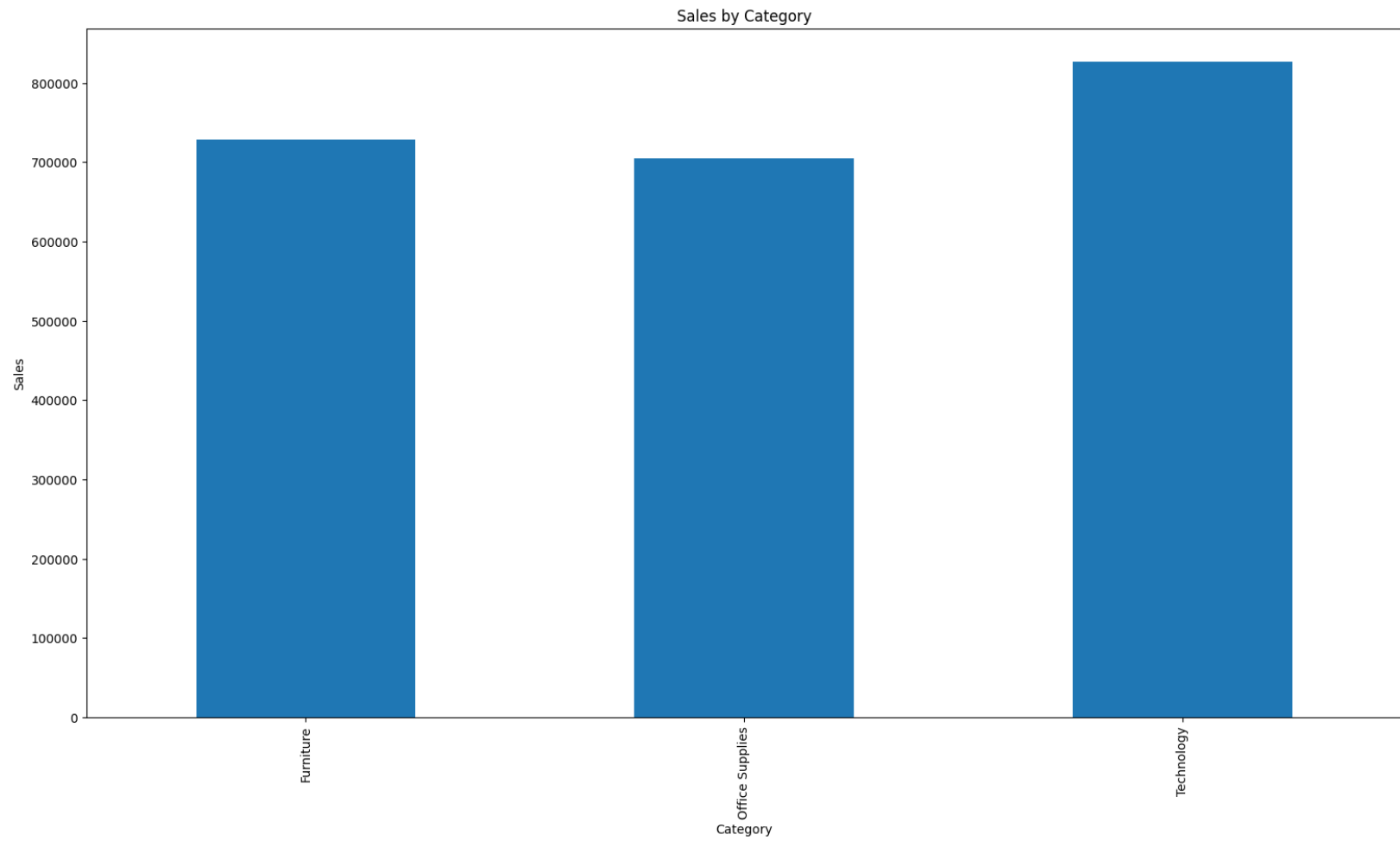


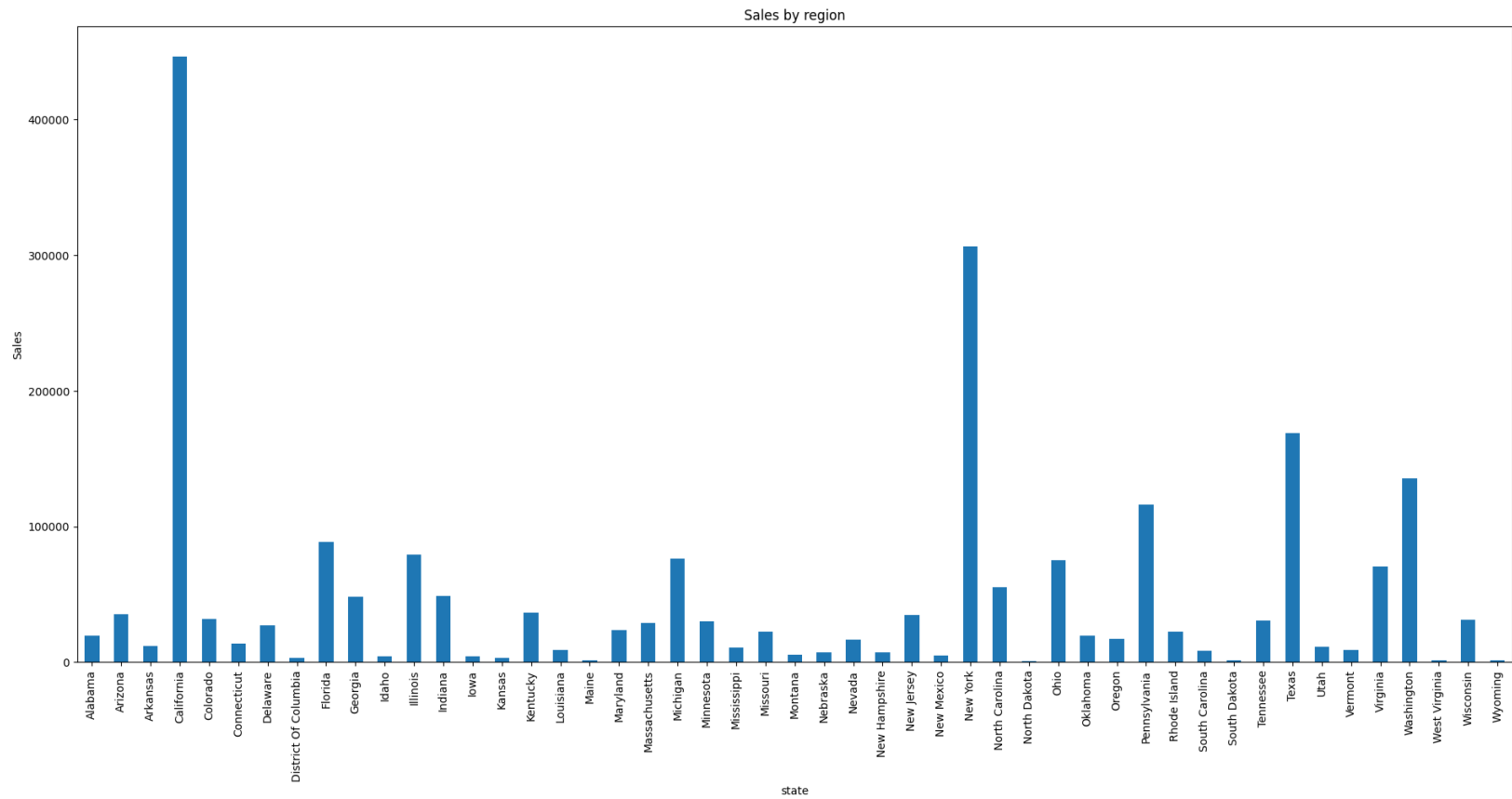






Segmentation Insights





Anomaly Detection

date	product	revenue	notes	action
18 Mar 2015	Cisco Telepresence System Ex90 Videoconferencing Unit	\$22,638.48	11x more than daily average	keep
16 Mar 2016	Fellowes Pb500 Electric Punch Plastic Comb Binding Machine With Manual Bind	\$6,354.95	12x more than daily average	keep
2 Oct 2017	Canon Imageclass 2200 Advanced Copier	\$17,499.95	18x more than daily average	keep
23 Mar 2018	Canon Imageclass 2200 Advanced Copier	\$13,999.96	28x more than daily average	keep

date		product	revenue	notes	action
29 Dec 2018		Dmi Arturo Collection Mission-Style Design Wood Chair	\$1,207.84	24x more than daily average; likely due to holiday discounts	keep, mark as promo driven

Business Questions and Recommendations

Q1: What products should we restock more often?

- Answer: Canon Imageclass 2200 Advanced Copier and Fellowes Pb500 Electric Punch Plastic Comb Binding Machine With Manual Bind are consistently top-selling by revenue across multiple months.
- Recommendation: Increase inventory frequency for these products and monitor stockout risk monthly.

Q2: Which region or branch is underperforming?

- Answer: Southern part of the US has the lowest total revenue and consistently ranks below others in monthly performance.
Recommendation:
- Investigate local factors (staffing, competition, marketing) and consider support campaigns for the South.

Q3: Are we growing consistently?

- Answer: Monthly revenue exhibits volatile growth with alternating spikes and dips, indicating fluctuating performance rather than steady, consistent growth.

Recommendations:

- Use customer surveys, sales team feedback, and CRM data to pinpoint causes.
- Run targeted promotions during typical dip months (e.g., "Mid-Year Blowout" in Month 2 or 4).

Q4: What categories are driving most of the revenue?

Answer: Technology generate 37% of all revenue.

Recommendation:

- Negotiate bulk discounts with suppliers to improve margins.

- Offer "buy now, pay later" (BNPL) options to ease large purchases.
- Lead with Technology, scale Furniture strategically, and streamline Office Supplies for retention.

Q5: Are we losing money from returns or data errors?

- Answer: No indication of possible returns or data errors.

Recommendations:

- Sales data shows consistent positivity, suggesting healthy demand. To sustain this, we recommend nurturing existing buyers (e.g., email follow-ups, exclusive offers) to maintain 100% non-negative sales.
- While no refunds are recorded, implementing "flash sales" or loyalty promotions to reactivate dormant customers will safeguard against future revenue loss.