Problem Statement

Despite strong overall demand for laptops and broad geographic distribution, Croma faces challenges in optimizing customer satisfaction, targeting underperforming markets, and aligning promotional strategies with buyer behavior.

Although certain laptop models, cities, and customer segments drive high revenue, negative reviews, uneven weekday sales, and underutilized demographics indicate missed opportunities in customer engagement, product positioning, and operational efficiency.

To sustain growth and stay competitive, it is critical to analyze transaction trends, demographic behavior, payment preferences, and city-level performance to uncover actionable insights that can:

- Enhance product offerings
- Improve customer experience
- Optimize stock and marketing strategies
- And increase sales consistency across locations and time periods.

Solutions-

1.SQL Analysis

Cities where laptops are sold

City
Hyderabad
Ghaziabad
Bhopal
Rajkot
Visakhapatnam
Faridabad
Ludhiana
Kolkata
Patna
Indore
Agra
Srinagar
Nashik
Chennai
Kalyan
Kanpur
Jaipur
Vasai-Virar
Meerut
Vadodara
Nagpur
Surat
Ahmedabad
Delhi
Pune

- **Market expansion & revenue growth**-Wider geographic reach means access to more customers, leading to higher sales volumes and diversified revenue streams. The company can reach upto Tier 1, 2, and 3 cities captures different customer segments.
- **Stronger brand presence**-Operating in multiple cities enhances brand visibility and recognition also strengthen the position of the company as a trusted and national-level player.

Youngest customer to buy a Laptop

transaction_id	day	month	year	week_name	brand	laptop_model	units_sold	price_per_unit	customer_name	gender	customer_age	City	payment_method	customer_rating
TXN03742	19	December	2024	Thursday	Apple	MacBook Air	4	76874	Mannat Sethi	F	18	Hyderabad	UPI	3

- **Shifting demographics & early brand engagement**-Indicates that younger customers are tech-savvy and willing to invest in premium products which creates an opportunity for early brand loyalty—if a customer starts with Apple young, they're more likely to remain loyal over time.
- **Influence of youth purchasing power**-Shows that Gen Z or even younger consumers have access to disposable income or influence family purchase decisions that also suggests growing acceptance of premium/luxury tech among younger demographics.

People are buying more than one laptop.

Neelofar Sunder	2
Nitara Sundaram	2
Neelofar Bala	2
Kanav Kala	2
Sumer Sami	2
Akarsh Karpe	2
Romil Tella	2
Trisha Wali	2
Prisha Konda	2
Miraan Chahal	2
Ayesha Sangha	2
Parinaaz Kulkarni	2
Aradhya Chowd…	2
Trisha Bala	2

- **Multiple -user households & digital adoption**-Households may need one device per family member for work, school, or entertainment. This reflects growing digital dependence, especially post-pandemic.
- **Corporate or institutional buying**- Could indicate purchases for employees, students, or team members that indicates B2B or B2E (Business to Employee) sales opportunities and long-term contracts.

2.Python Analysis

Female customers are more than male customers.
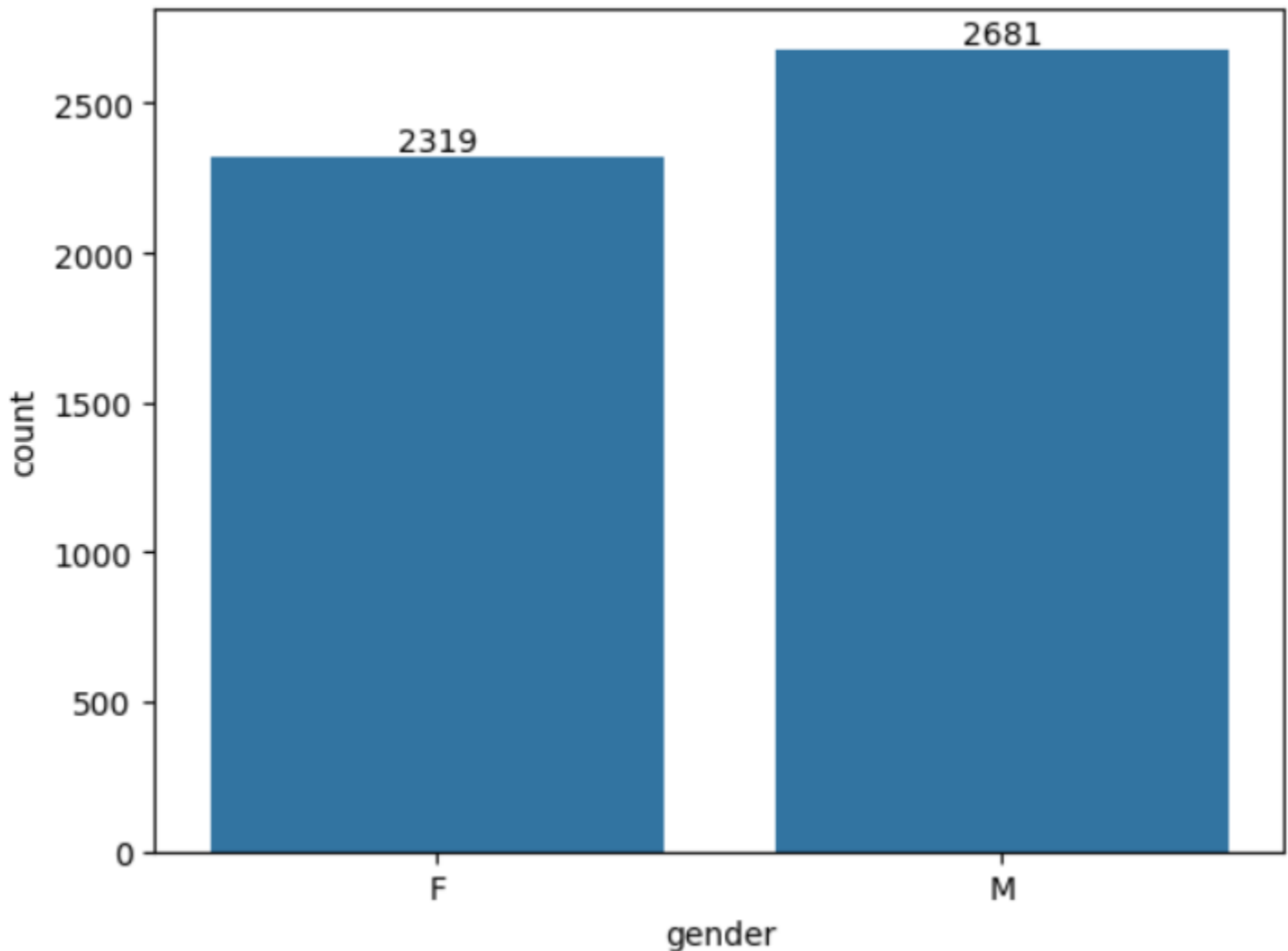
- **Target audience insight-**Women may be a stronger or growing demographic for laptop purchases, so marketing strategies could focus more on their preferences.
- **Customer behaviour-**Suggests a shift or trend in tech consumption habits, possibly reflecting professional, educational, or lifestyle changes.

Purchase by age
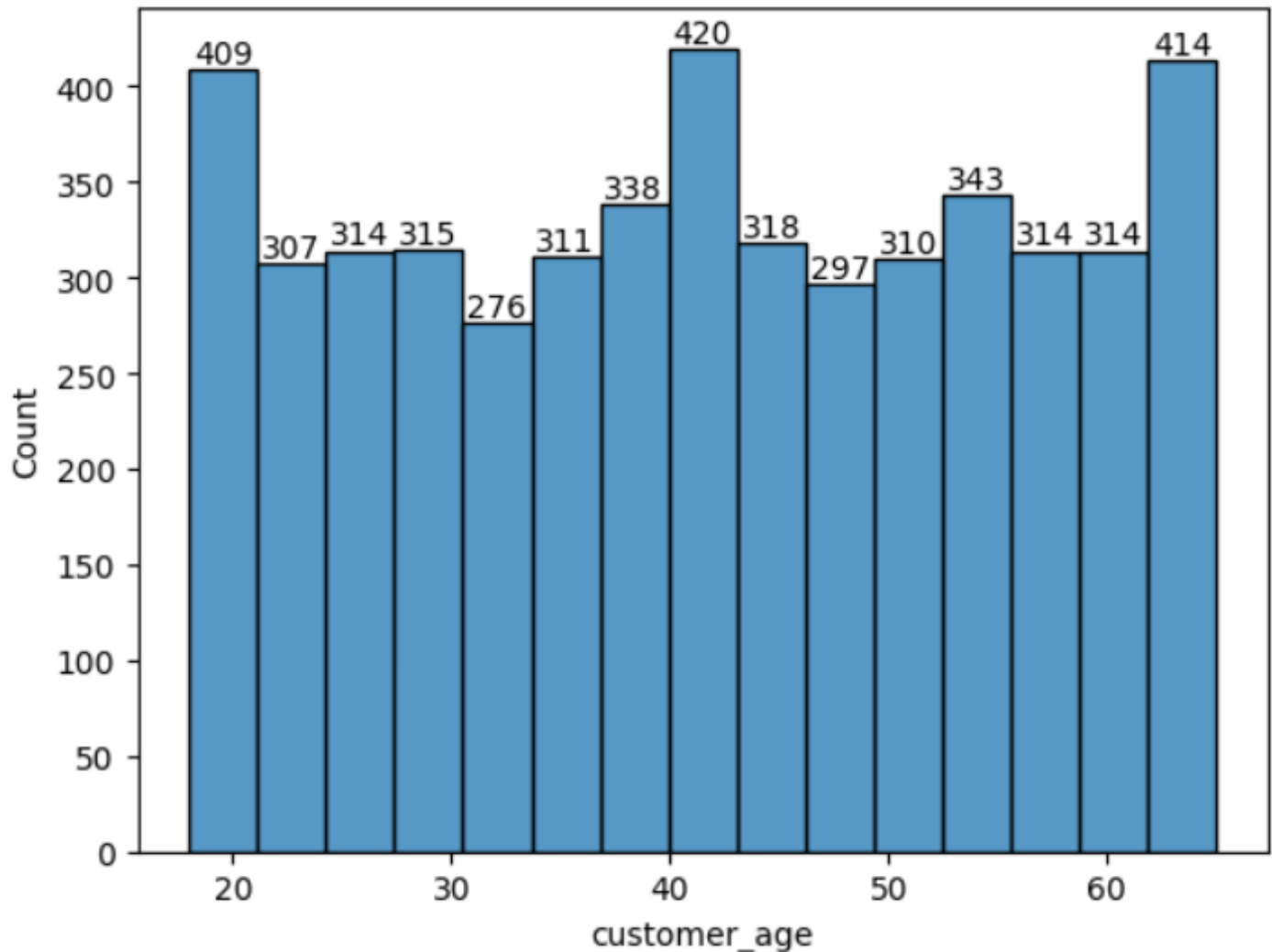
Age of 20,42,65 are mostly buying laptops.

- **Age 20-**Mostly college students or young professionals who are buying laptops for education, gaming or entry-level jobs. They prefer affordable, portable or stylish models.

- **Age 42-**Generally mid-career professionals. They are buying laptops for work, productivity or business use. They tend to prefer performance-focused, reliable laptops, possibly corporate purchases or replacements for outdated devices.

- **Age 65-**Generally older adults/retirees who are buying for personal use, communication, or entertainment. They may prioritize ease of use, screen clarity, or support.

Age of 32 & 47 years are less buyers of laptop.

- **Age 32**-Many are already settled in careers, may already own a laptop. They are less likely to upgrade unless there's a strong need. Their focus might be on family expenses, housing, or mobility over tech upgrades.
- **Age 47**-Often in mid-senior roles where work devices are company-provided. Also they are less involved in tech purchases unless for family. They may prefer tablets or shared devices at home.

City wise analysis
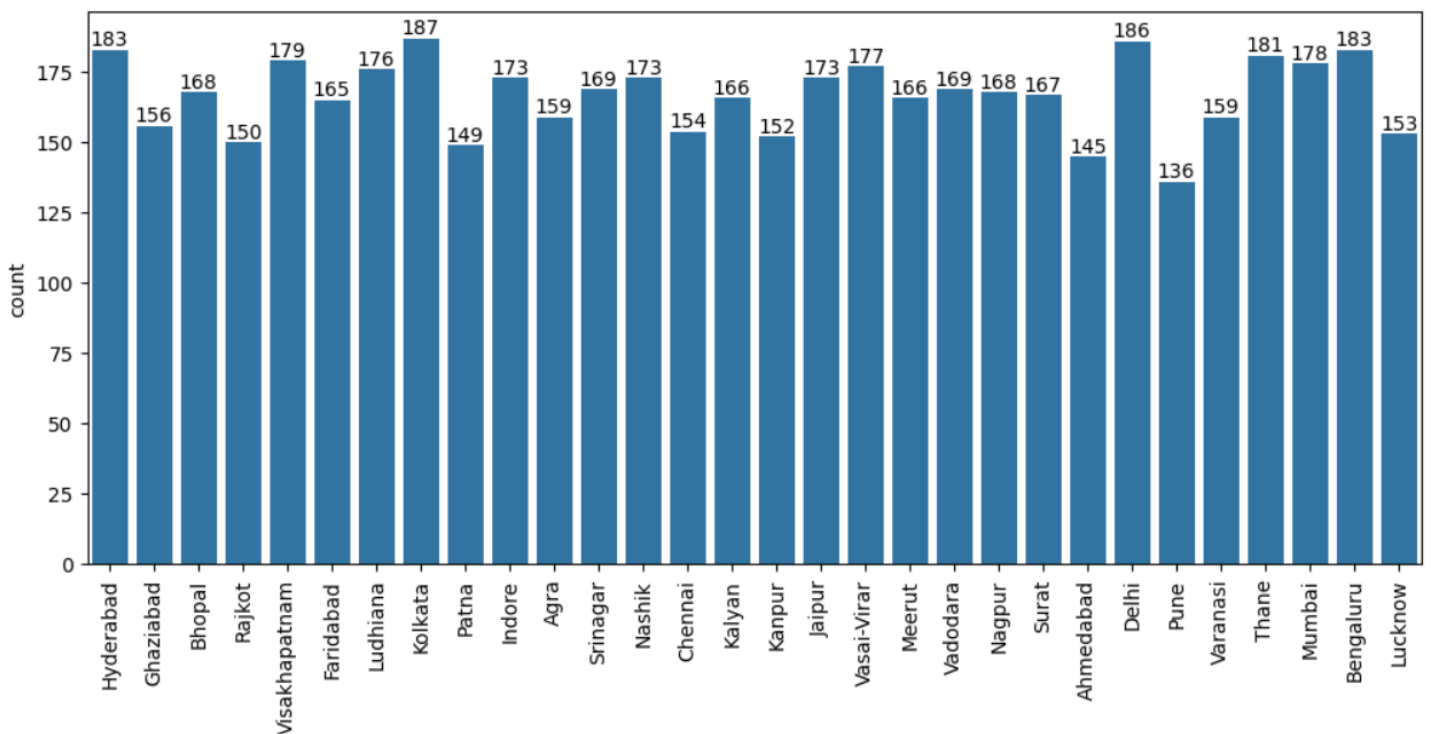
**Hyderabad, Kolkata, Delhi, Bengaluru has more customers.**

- These are major metropolitan cities with large populations and high digital adoption.
- People in these cities are more likely to use laptops for work, education, or entertainment.
- Bengaluru and Hyderabad: Known as IT and startup hubs → high demand for laptops among tech professionals.

- Delhi and Kolkata: Have large numbers of students, office workers, and business users.
- You might need to ensure higher stock levels and faster delivery options in these cities.

Pune, Ahmedabad, Patna, Rajkot, Lucknow has lower sales rates.

- Residents may prioritize mobile devices over laptops, especially in smaller cities.

- Tech adoption or digital education might be slower or less emphasized.
- Could represent untapped potential if barriers (pricing, accessibility, language, etc.) are addressed.

Month wise sales analysis.
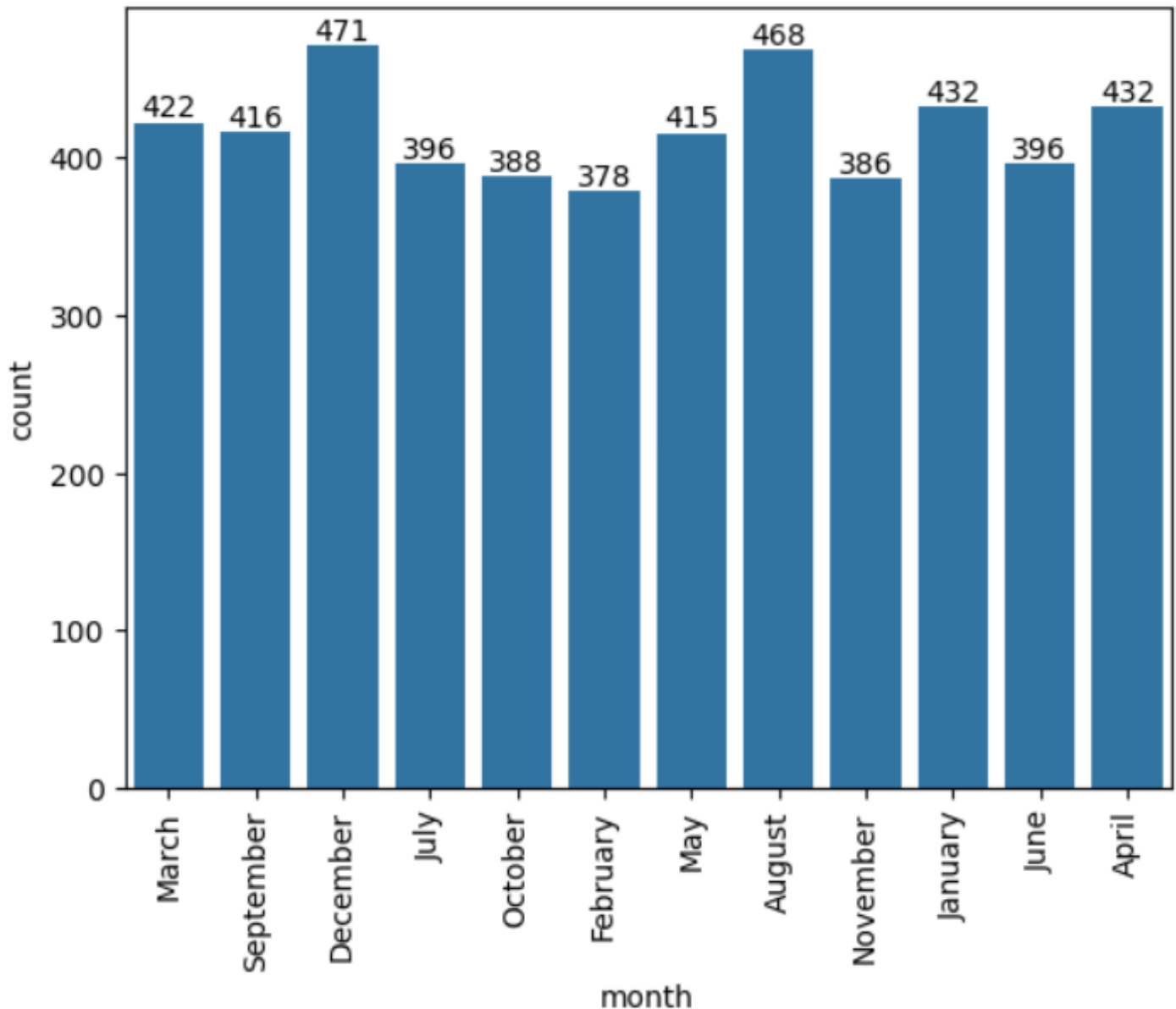
Maximization of sales is seen in August & December.

- **August**-Universities and colleges reopen → high demand from students.
- **December**-Year-end holidays and festive sales (like Christmas, New Year, or local festivals).So,people buy laptops as gifts or personal upgrades.

Sales reduce in February & November.

- **February**-Consumers often cut back on spending after heavy expenses in December–January & also no major festivals, school/college admissions or sale events.

- **November**-In some years, major Indian festivals (like Diwali) fall in October, so buying shifts earlier.After Diwali/Dussehra sales, demand drops off.

3. Microsoft Power Bi analysis.

Majority of the revenue generated by UPI payment method.
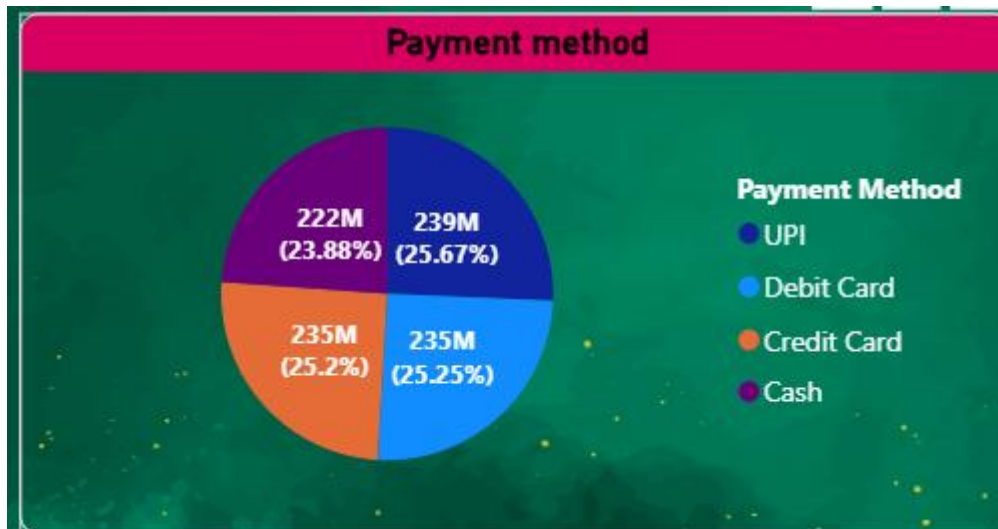
- **High digital adoption among customers-**Shows that your customer base is digitally savvy and prefers cashless, fast transactions, indicates a shift toward modern, convenient payment behavior.

- **Faster payments settlements-** UPI provides instant settlements, improving cash flow and liquidity for the business. Also reduces waiting time compared to traditional banking or card payments.

Review Trend

A lot of people are giving bad review after purchasing laptop. Below are the solutions-

- Always acknowledge the customer's concern publicly. Apologize and offer to resolve the issue privately (email or phone)
- Ensure your product pages have accurate specs, images, warranty info and delivery timelines. Avoid overpromising or vague claims.
- Ensure your staff handles queries with empathy, product knowledge and accountability. Empower them to offer fast replacements or refunds where justified.
- Reach out to satisfied customers and ask them to share their experience. Consider offering a small incentive (e.g., discount on next purchase) for genuine reviews.
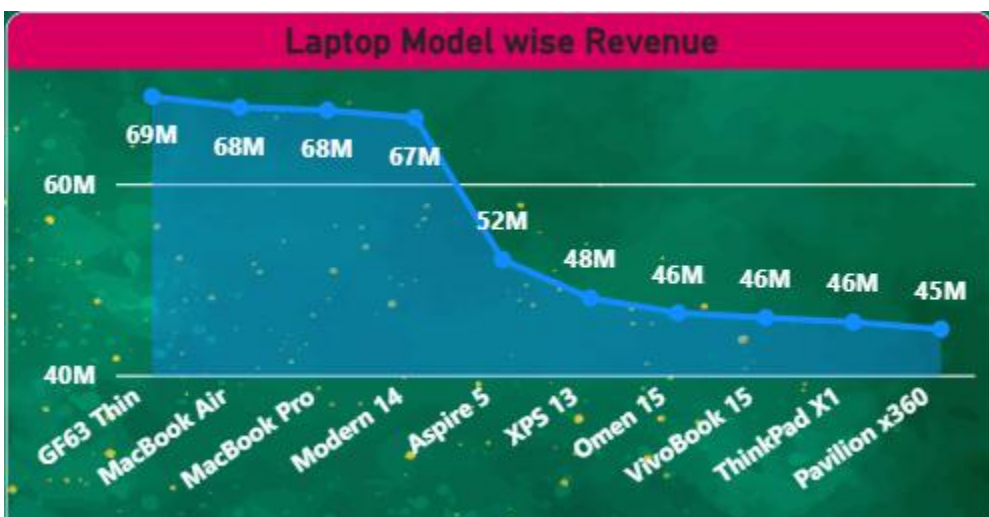
Weekday wise revenue-

Monday shows large sells but Tuesday shows less sells.

- Tuesday may be a slow day, revealing a gap or weak engagement. This is a chance to target customers with mid-week promotions or flash sales.
- Boost ads and campaigns on Mondays to capitalize on momentum. Create "Tuesday-only" offers to pull traffic on slower days.

Laptop model wise revenue.

GF63Thin,MacBook Air, Macbook Pro, Modern 14,Aspire 5 are best selling laptops.

- These models are meeting customer needs in terms of performance, price, design, or brand value. This indicates your current inventory and product lineup is aligned with market demand.
- These models should be prioritized for stock replenishment, bulk ordering or early restocking, special bundling or promotional offers
- Popular products = chances to increase revenue via: Accessories (bags, mice, cooling pads),Extended warranties, Software (MS Office, antivirus, cloud services).

Key Recommendation-

- Double down on Tier 1 cities (Hyderabad, Bengaluru, Delhi, Kolkata) with faster logistics, high-demand inventory, and local promotions & explore potential in underperforming Tier 2/3 cities (Pune, Rajkot, Patna) with price-sensitive offers, regional ads, and offline marketing to boost reach.
- Younger buyers (age 20) and female customers are growing segments — tailor youth-oriented, lifestyle-driven campaigns and female-focused ads (portability, design, affordability). Consider special "Student Laptop Plans" or youth loyalty programs with discounts, EMI, or accessories.
- Launch or strengthen a B2B/B2E program for businesses, schools, and startups — provide volume-based discounts and after-sales support. Highlight "multi-device" family bundles for households purchasing 2+ laptops
- August & December should have major marketing pushes — Back-to-School and Year-End campaigns with flash sales and combo offers. Use Tuesdays for targeted engagement (e.g., "Tech Tuesday Deals"). Plan inventory, ads, and manpower around these monthly and weekly patterns.
- Highlight UPI as a preferred payment method at checkout also can partner with UPI apps for exclusive cashback or discount offers.
- Establish a customer experience team to monitor, respond, and resolve negative feedback within 24–48 hours. Ensure product descriptions, warranties, and delivery timelines are accurate and clear. Introduce a post-purchase review incentive to increase positive feedback and boost brand trust.