Data StoryCraft

Data Analytics Case Study

Team Name: Alpha

Team Members: Akash Tripathi(DOMS IITK), Ayush Goyal(DOMS IITK)

- Analyze user behavior to uncover trends, patterns, and gaps in e-commerce sessions.
- Identify critical insights to highlight development opportunities

- **Numerical Features**: 9
  Administrative, Information, Product Related, Bounce rate, Exit rate, Page Value)
- **Categorical Features**: 9
  Browser, Visitor Type, Month, OS, Region, Special Day, Traffic Type, Weekend)
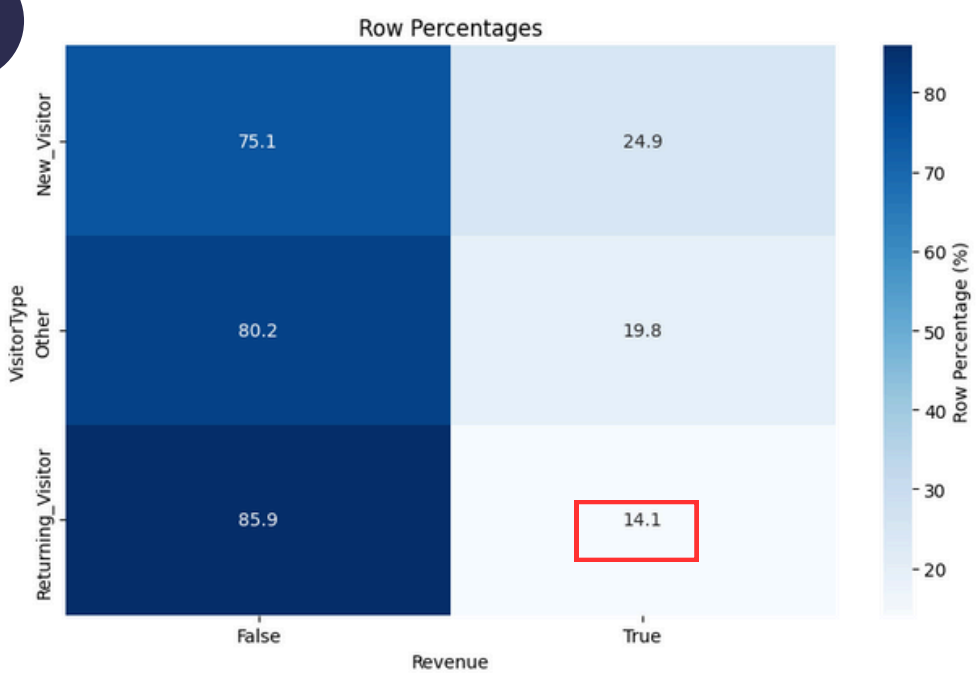- **Class Label:**
  Revenue (1 = Purchase, 0 = No Purchase)

- Conduct exploratory data analysis to uncover trends.
- Focus on meaningful patterns impacting revenue.

1

Distribution of BounceRates by Revenue
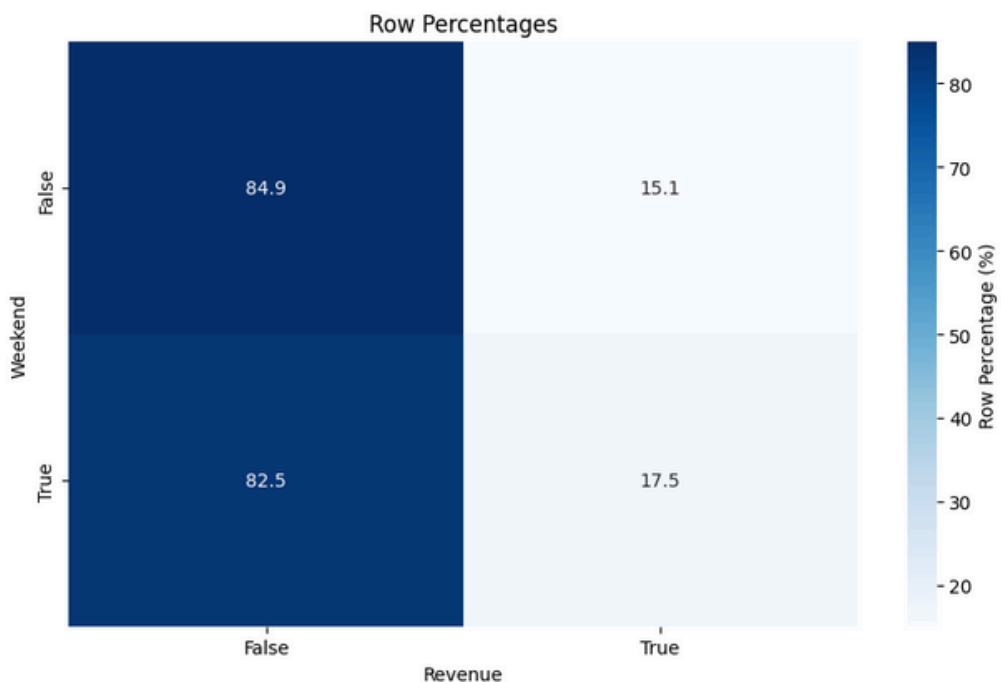

Distribution of ExitRates by Revenue
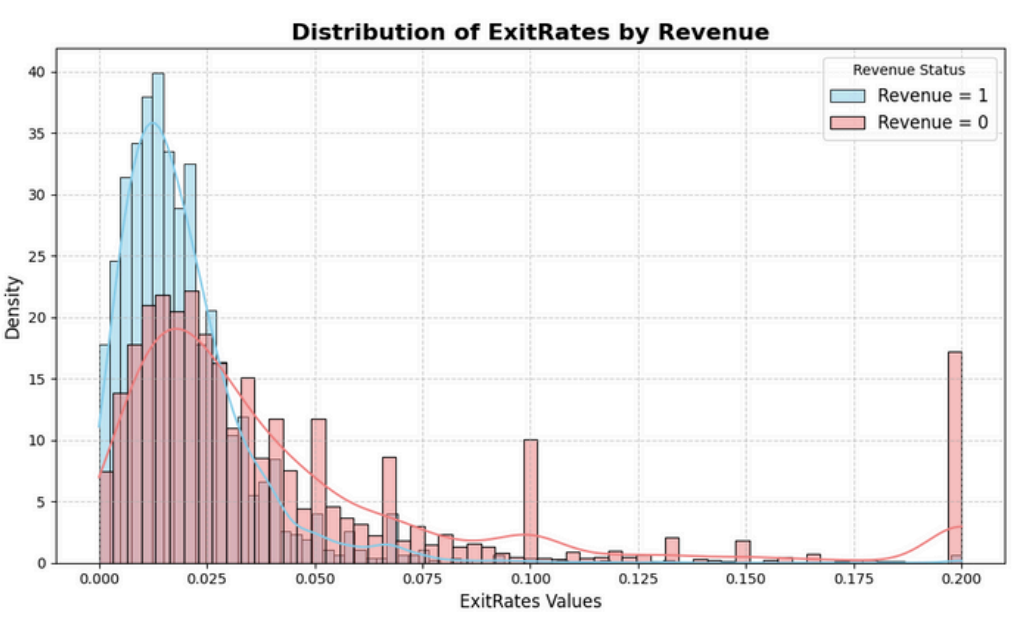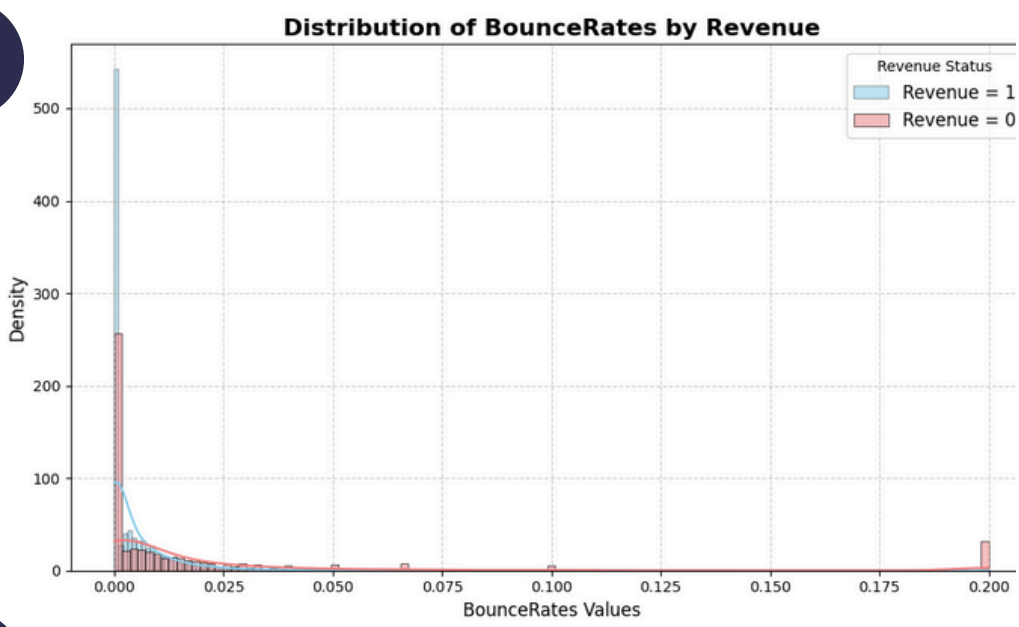
- Bounce rates and exit rates have low medians, but their maximum values show potential issues in user retention.
- The revenue conversion rate is less than 20% for existing visitors, indicating potential gaps in retaining or converting repeat users.
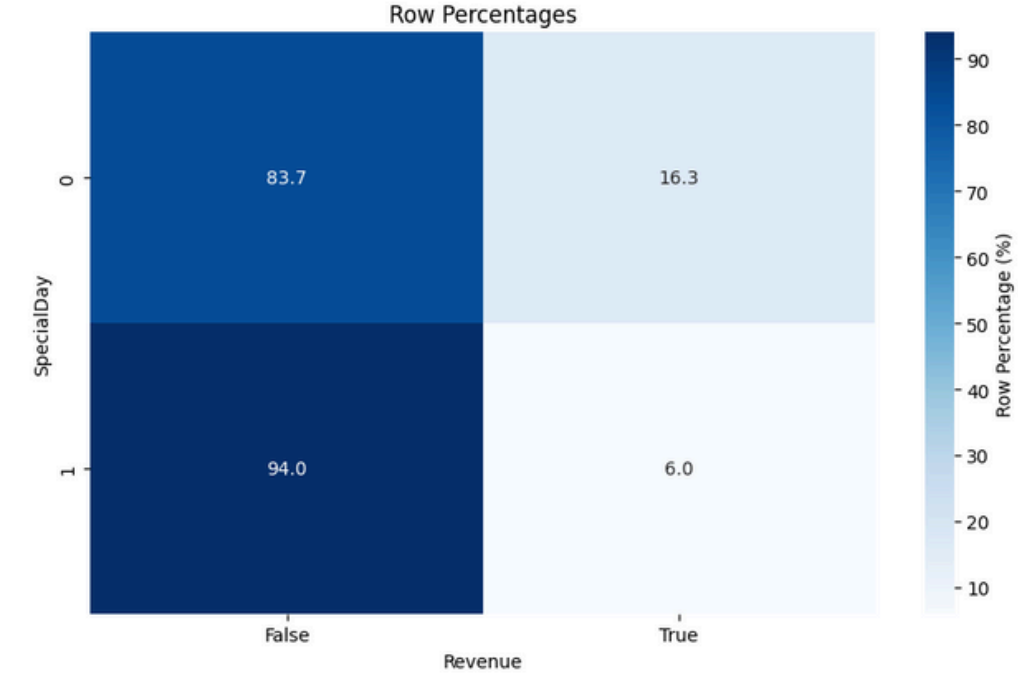- No significant increase in revenue conversions during special days or weekends.
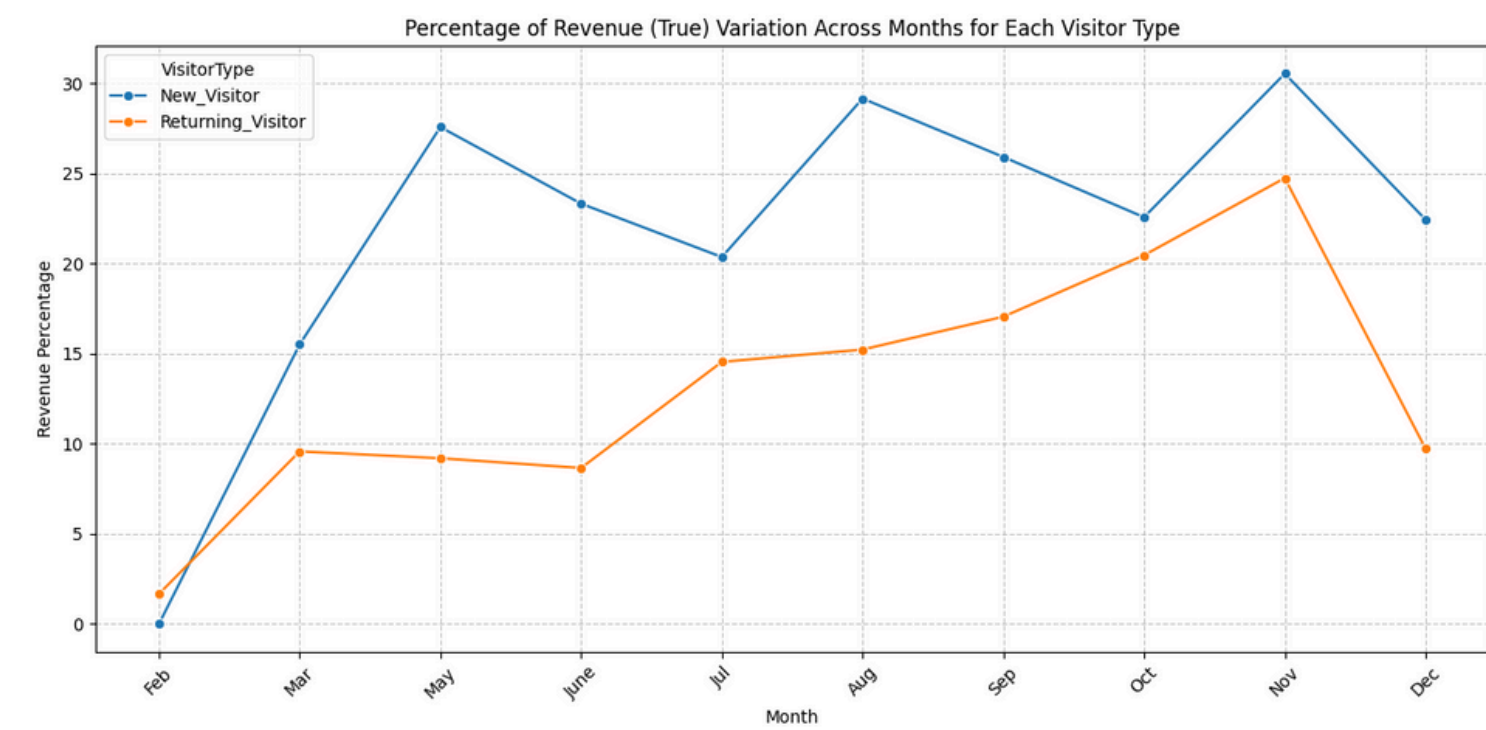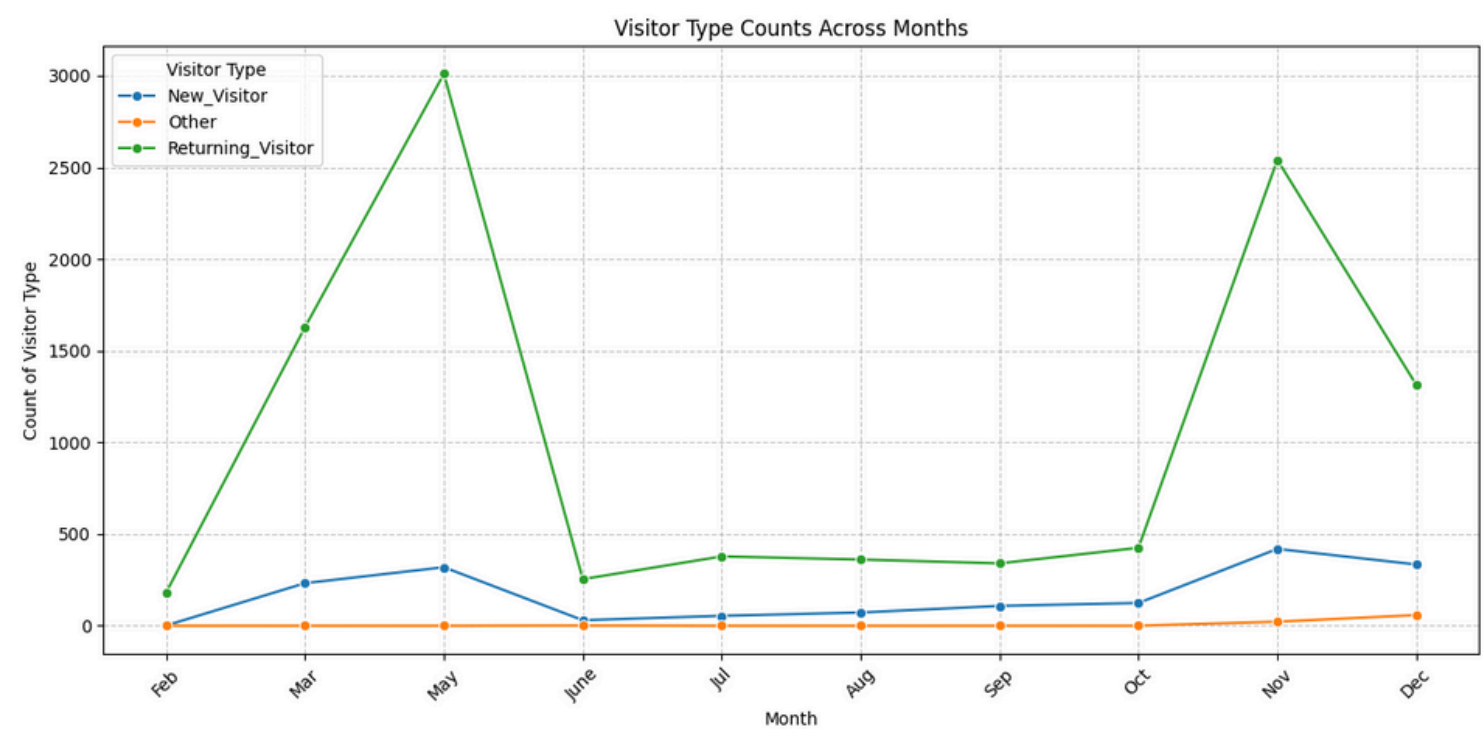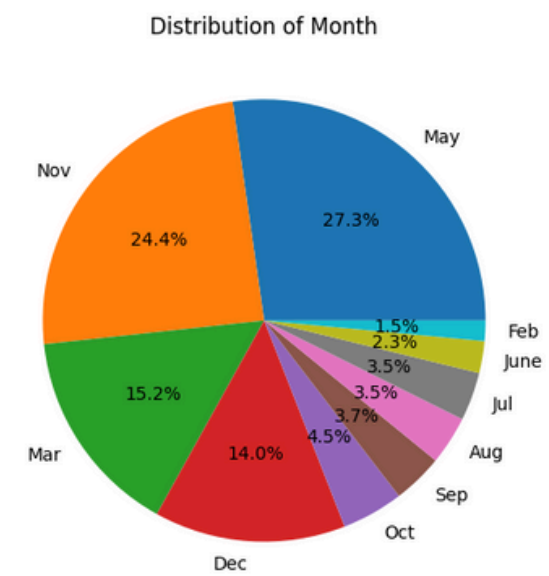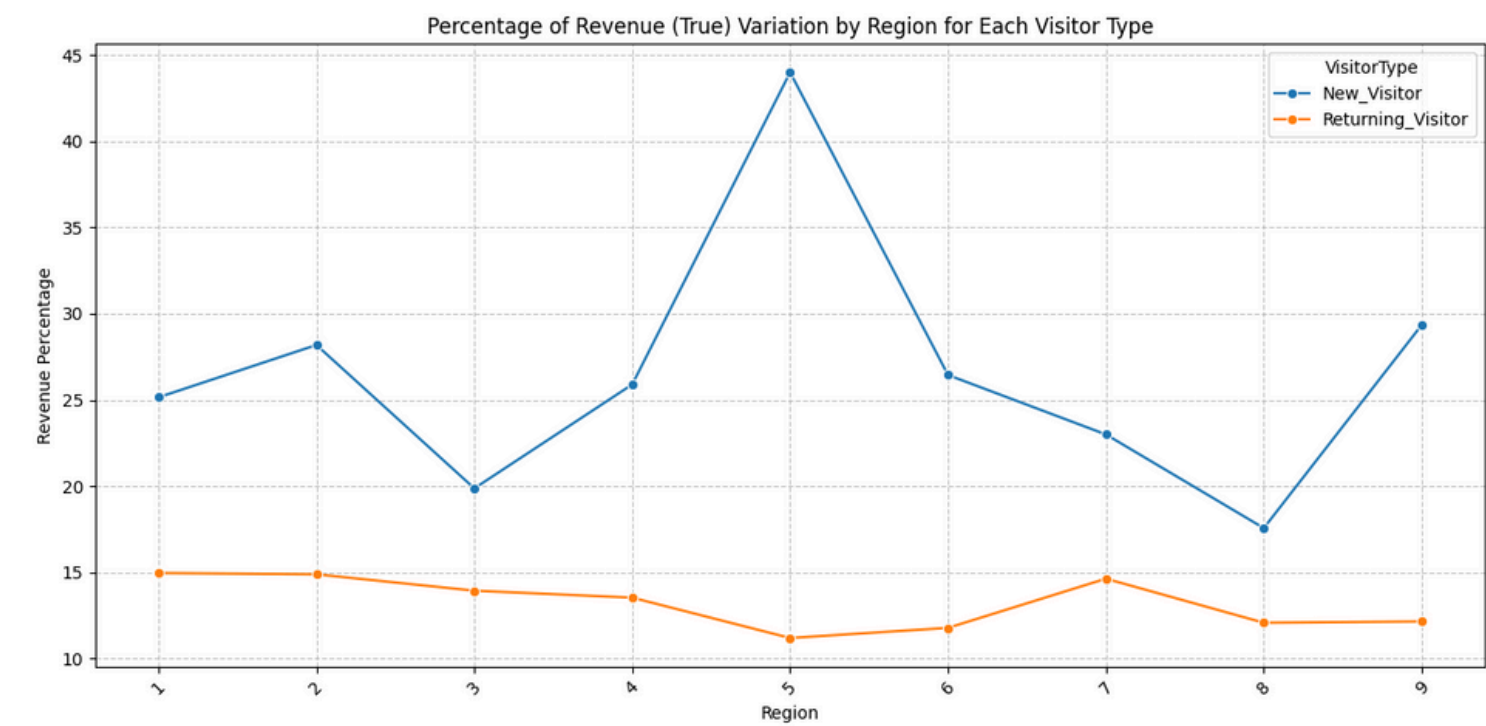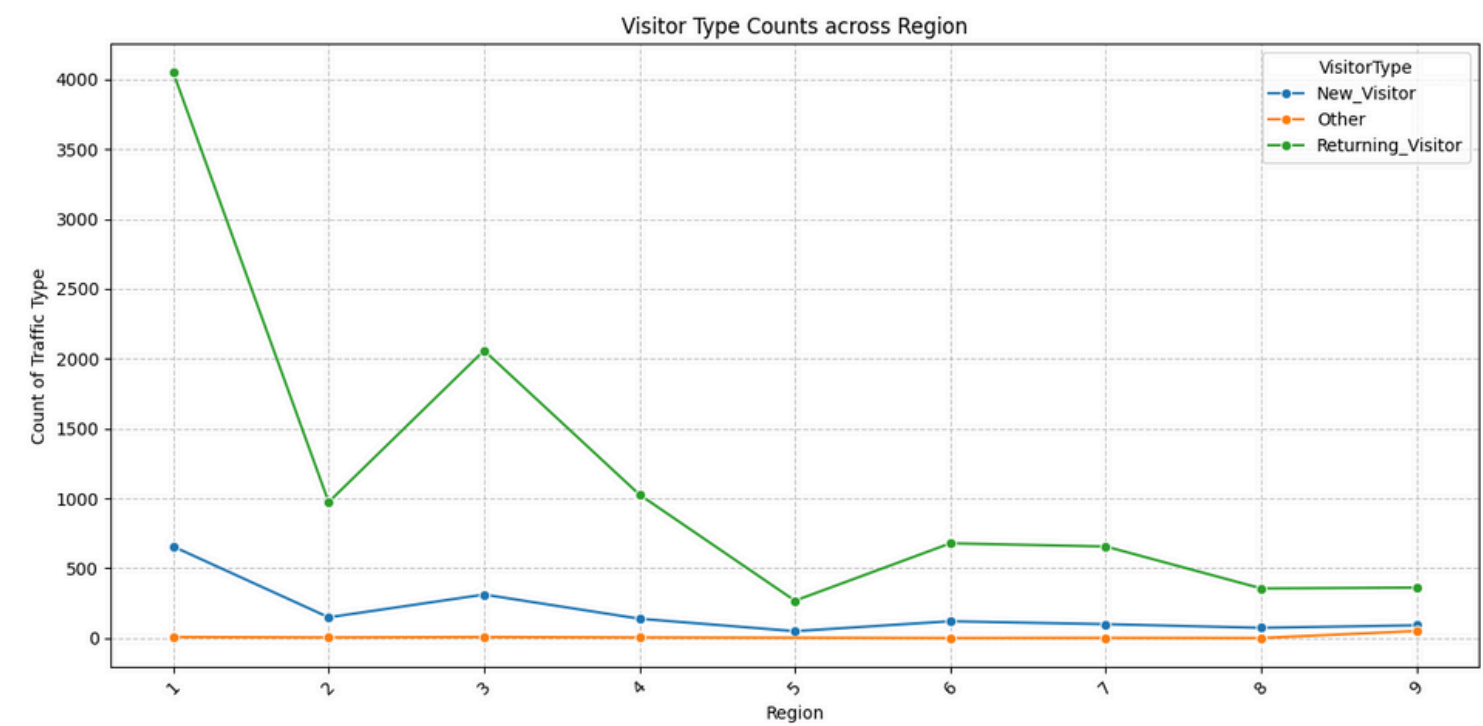
2

Revenue & Visitor Type

3

Revenue & Weekend

4

Revenue & Special Day

Revenue Conversion Rate

Distribution of Month

Visitor Type Counts Across Months

Percentage of Revenue (True) Variation Across Months for Each Visitor Type

- **Seasonal Variation**: Both visitor types exhibit peak activity in March and November, suggesting potential seasonal trends.
- **Stronger customer loyalty**: Existing visitors generally have a higher conversion rate

Distribution of Region

Visitor Type Counts across Region

Percentage of Revenue (True) Variation by Region for Each Visitor Type
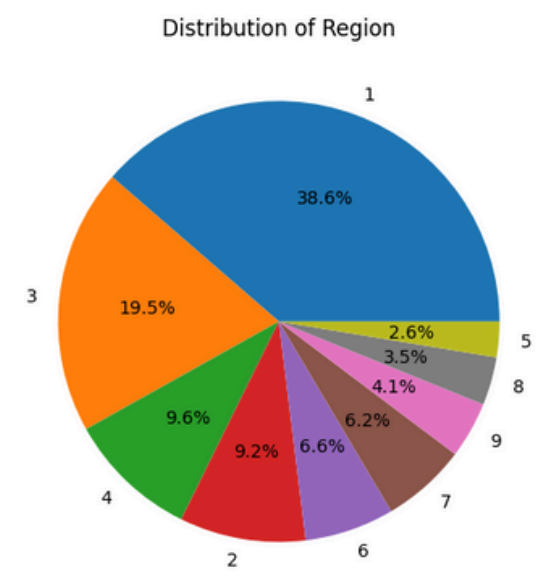
- **Regional Traffic Concentration**: Few regions drive the majority of website traffic.
- **Consistent Conversion Rates**: Conversion rates for both new and existing visitors are relatively consistent across regions, with minor exceptions.
- **Region 5 Anomaly**: Significant spike in new visitor conversion rates is observed in Region 5, despite it contributing only 3% of overall traffic

Revenue Conversion Rate
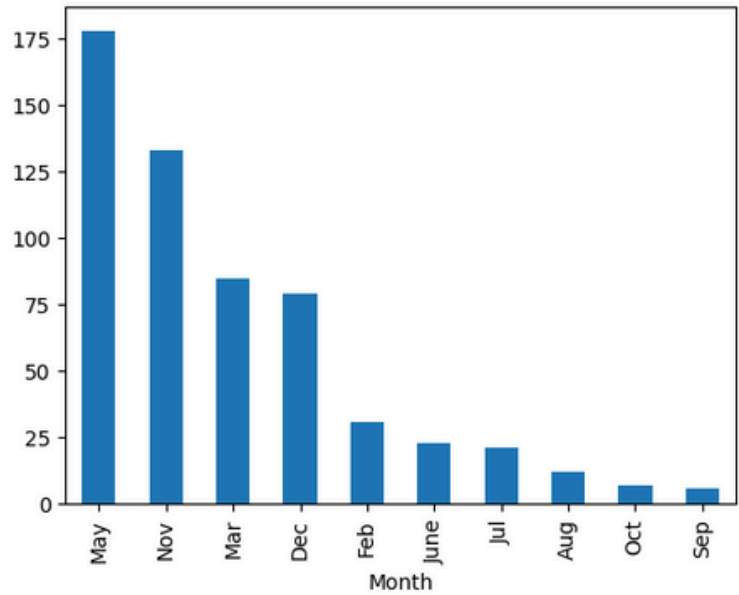

Distribution of TrafficType

Visitor Type Counts by Traffic Type

Percentage of Revenue (True) Variation by Traffictype for Each Visitor Type
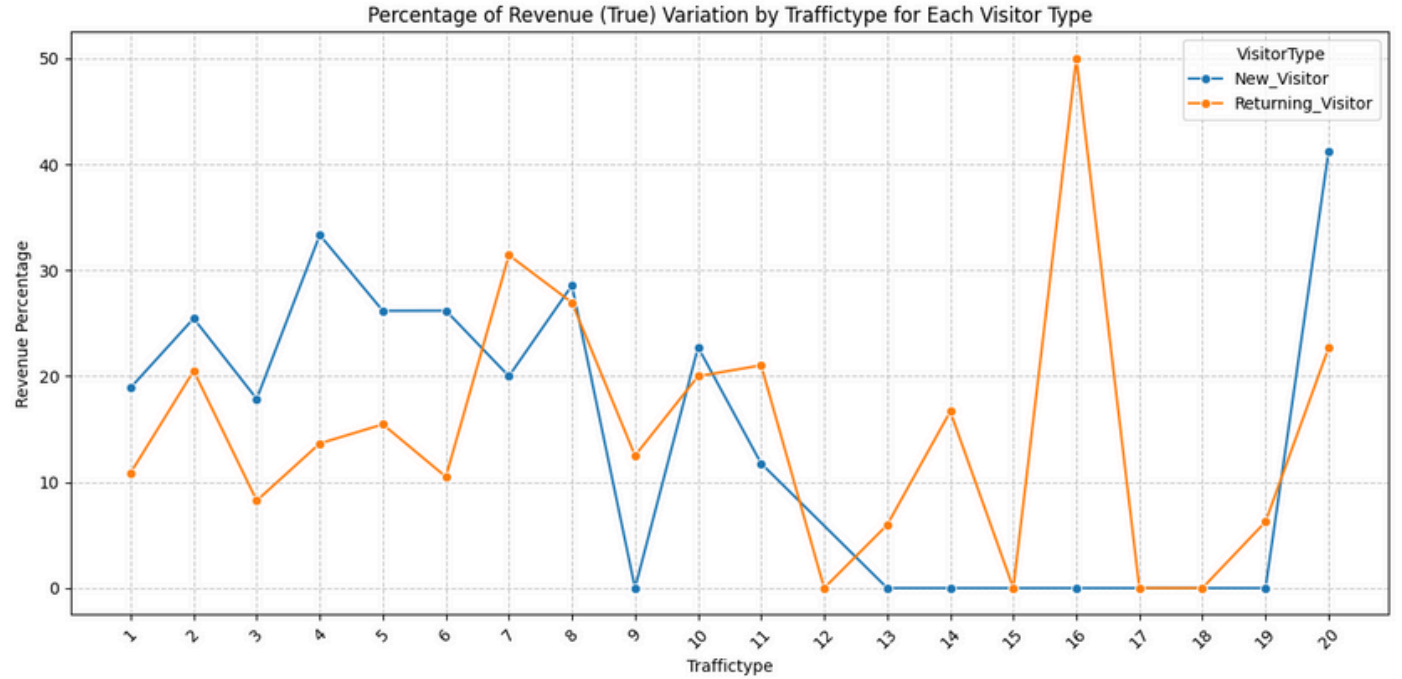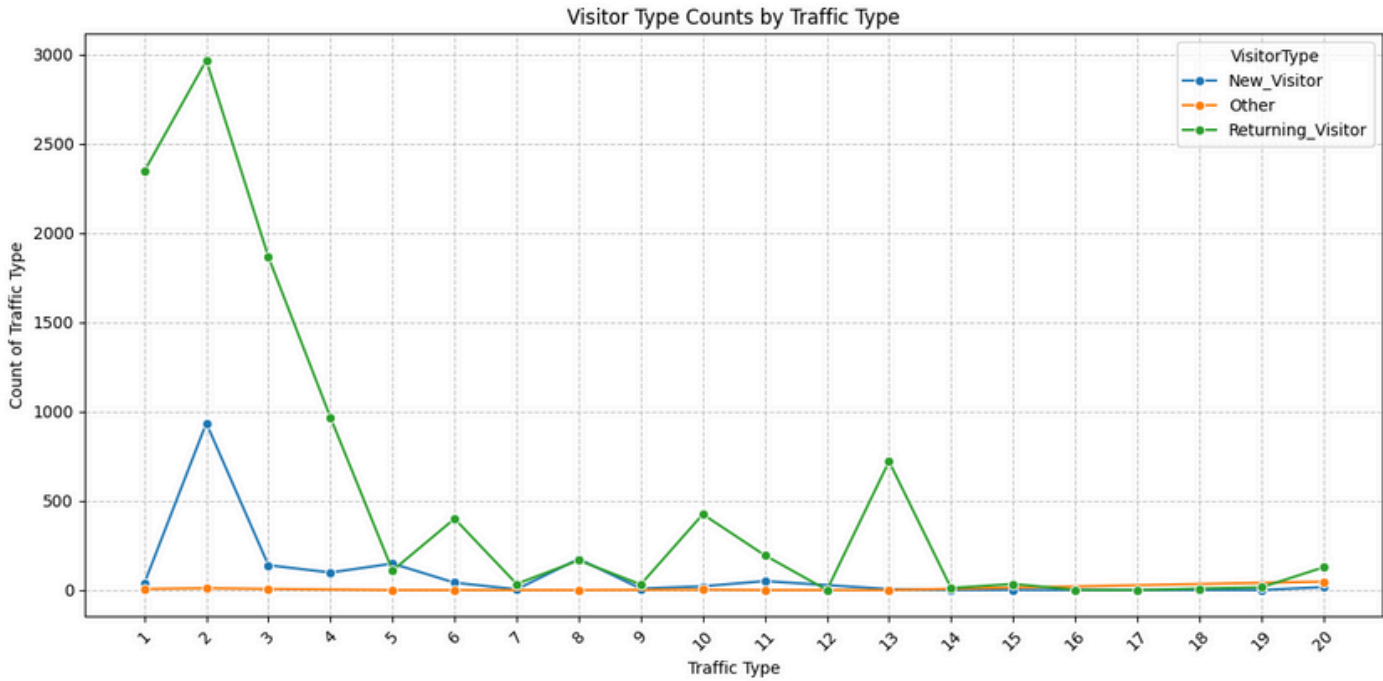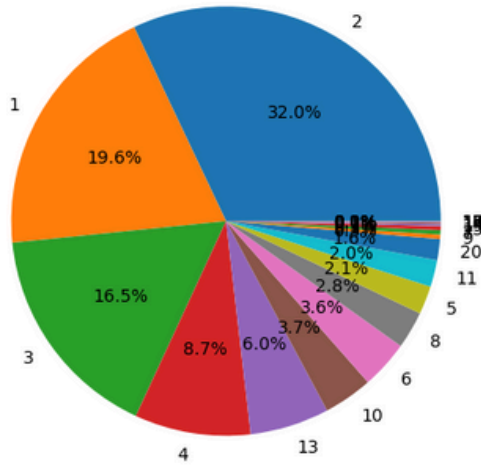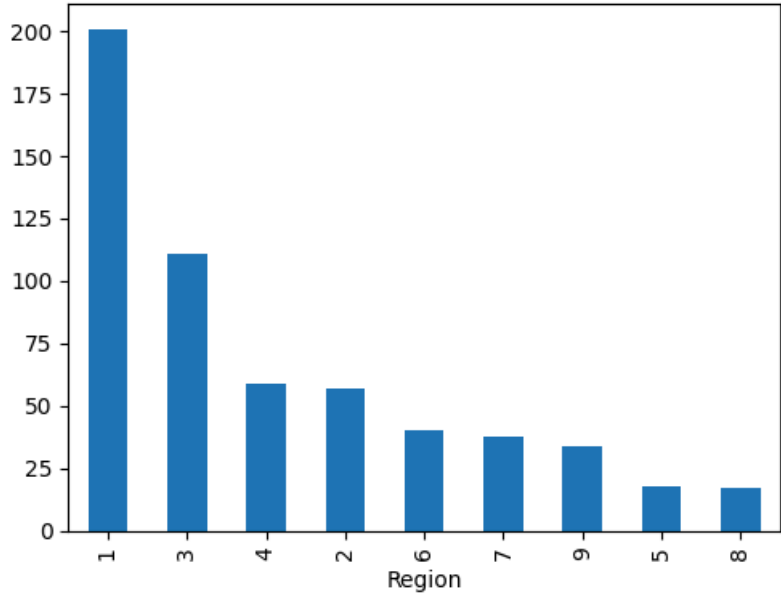
- **Traffic Dominance**: Certain traffic sources drive the majority of website traffic
- **Consistent Conversion Rates**: Conversion rates for both new and existing visitors remain relatively stable across these dominant traffic sources.

Bounce/Exit rate

Distribution of Month

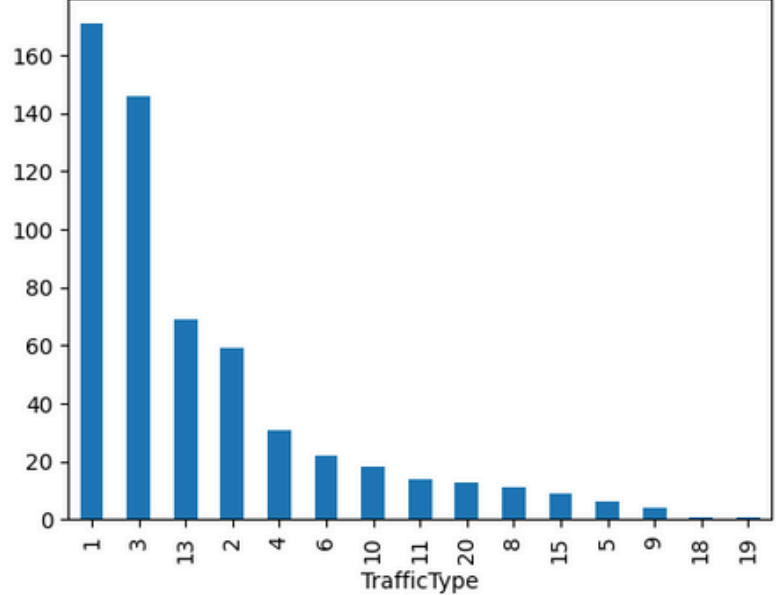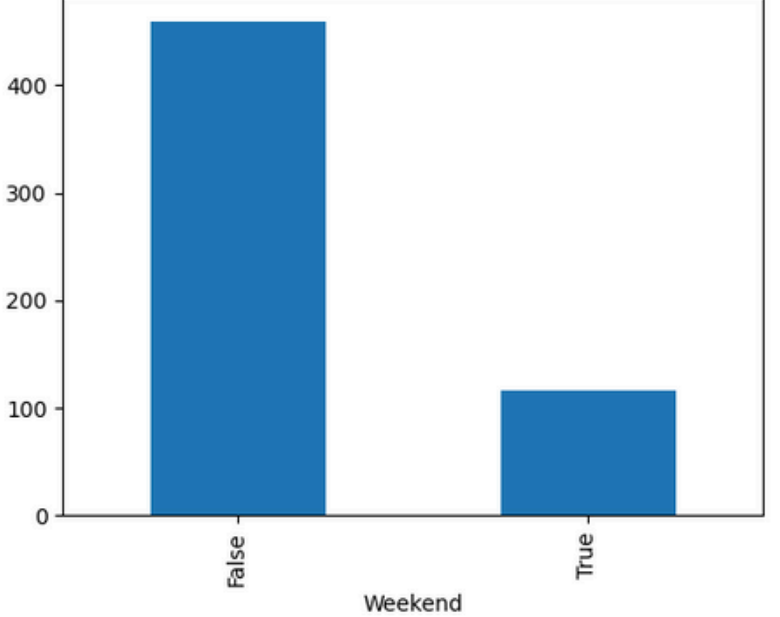Distribution of Region

Distribution of TrafficType

Distribution of Weekend

- Issue isn't tied to specific months or regions, the problem likely lies with:
  - **Page-Level Issues**: Irrelevant or Poor-Quality Content, Technical Issues
  - **Campaign-Level Issues**: the page content may not align with the messaging or promises made in the ad or promotional materials., targeting the wrong audience

Recommendations

Revenue Conversion

1. **For existing visitor:**
   - Personalize Retargeting
   - Implement a VIP/Loyalty Program
   - Analyze Website Behavior

2. **Capitalize on Seasonal Peaks:** to maximize sales during these peak periods
   - Targeted marketing campaigns
   - Inventory adjustments

3. **Region-Specific Marketing**: Tailor marketing efforts to the regions with the highest traffic volume to maximize ROI.

4. **Deep Dive into Region 5**: Analysis of Region 5 to understand the factors driving the higher conversion rates and explore opportunities to replicate these successes in other regions.

Special Days/Weekends

1. **Hyper-Targeted Weekend & Holiday Campaigns:**
   - User Persona
   - Personalized Messages: Highlight the urgency and exclusivity of weekend/holiday offers.

2. **Leverage Urgency and Scarcity**
   - Limited-Time Offers
   - Exclusive Deals
   - Inventory Scarcity

3. **A/B Testing**

Bounce/Exit rate

1. **Analyze Affected Pages**
   - Improve Page Content: Ensure content is relevant, engaging, and well-written. Use clear headlines, subheadings, and bullet points to improve readability.
   - Fix Technical Issues: Address any slow loading times, broken links, or other technical problems.

2. **Review Campaigns**
   - Ensure campaigns are targeting the right audience and that the messaging aligns with the page content.

Thank You!