



flyingwhale. AIRLINE

BUSINESS INTELLIGENCE CASE STUDY

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BACKGROUND

FlyingWhale Airline, a prominent (fictional) international airline, is seeking to enhance its business intelligence capabilities by analyzing Customer Flight Activity and Customer Loyalty History. The airline is committed to optimizing customer experience, understanding travel patterns, and maximizing the effectiveness of its loyalty programs.



OVERVIEW

- Total Data Duration: 2 years (2017 and 2018)
- Total Flights: 2,087,689
- Total Distance Travelled: 490,350,765 miles
- Total Loyalty Members: 16,737
- Current Loyalty Members: 14,670
- Loyalty Program Cancellation Rate: 12.35%
- Total Points Accumulated: 50,172,736.25
- Total Points Redeemed: 12,451,388
- Average Customer Lifetime Value (CLV): \$7,988.90



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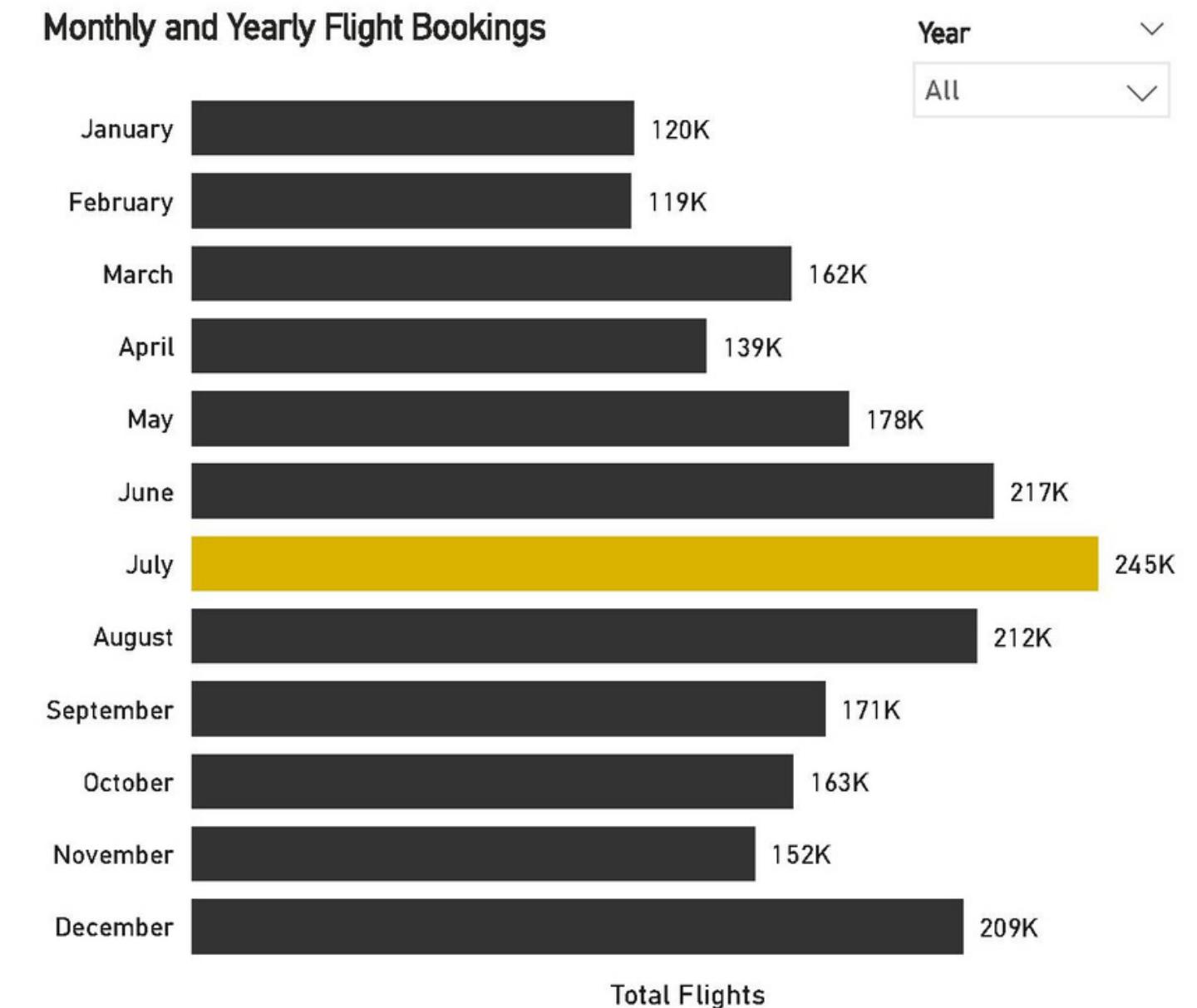
Flight Activity Analysis

Analysis of Monthly and Yearly Flight Booking Patterns

In overall analysis, **July** emerged as the peak month with the highest number of total flights, totaling **245,298**, representing **11.75%** of total flights. This figure stood **106.39%** higher than **February**, which recorded the lowest number of total flights at **118,849**.

Looking into yearly trends, it was observed that in **2017**, **July** also held the top position with **113,277** total flights, showcasing an **89.55%** increase over February's **59,760** flights. Similarly, in **2018**, **July** maintained its dominance with **132,021** total flights, demonstrating a robust **123.43%** increase over February's **59,089** flights.

Monthly and Yearly Flight Bookings



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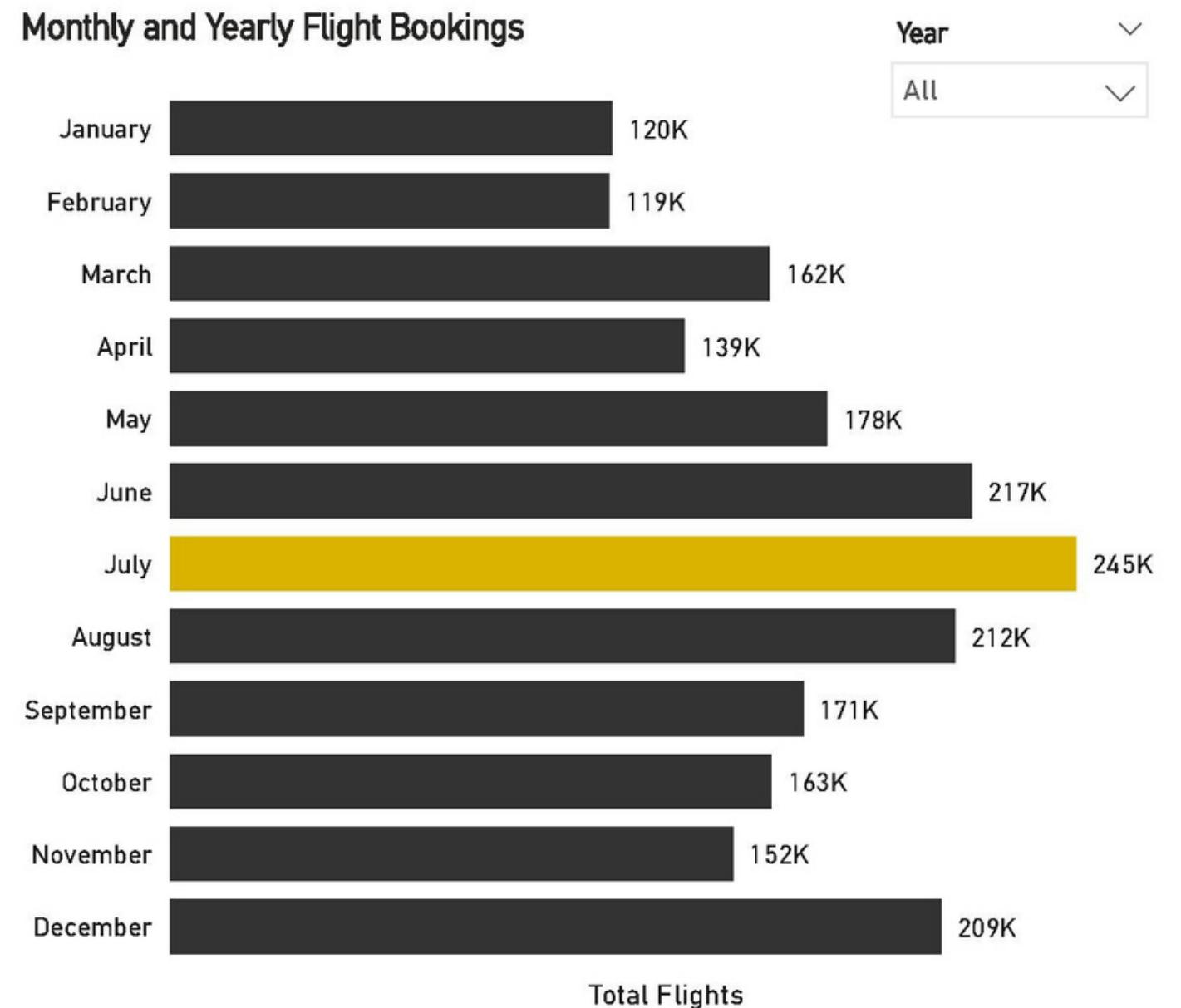
Flight Activity Analysis

Analysis of Monthly and Yearly Flight Booking Patterns

This tells us that July emerges as the peak month for flight bookings across both years analyzed, possibly due to factors such as summer vacations, holidays, or favorable weather conditions. February stands out as the month with the lowest sum of total flights across both years. This suggests that February experiences lower travel demand compared to other months.

FlyingWhale Airline can leverage these insights to adjust its scheduling, capacity planning, and marketing strategies accordingly. For instance, during peak months, the airline may consider increasing flight frequencies or offering promotions to capitalize on high demand, while during off-peak months, it may focus on cost-saving measures or targeted marketing campaigns to stimulate demand.

Monthly and Yearly Flight Bookings



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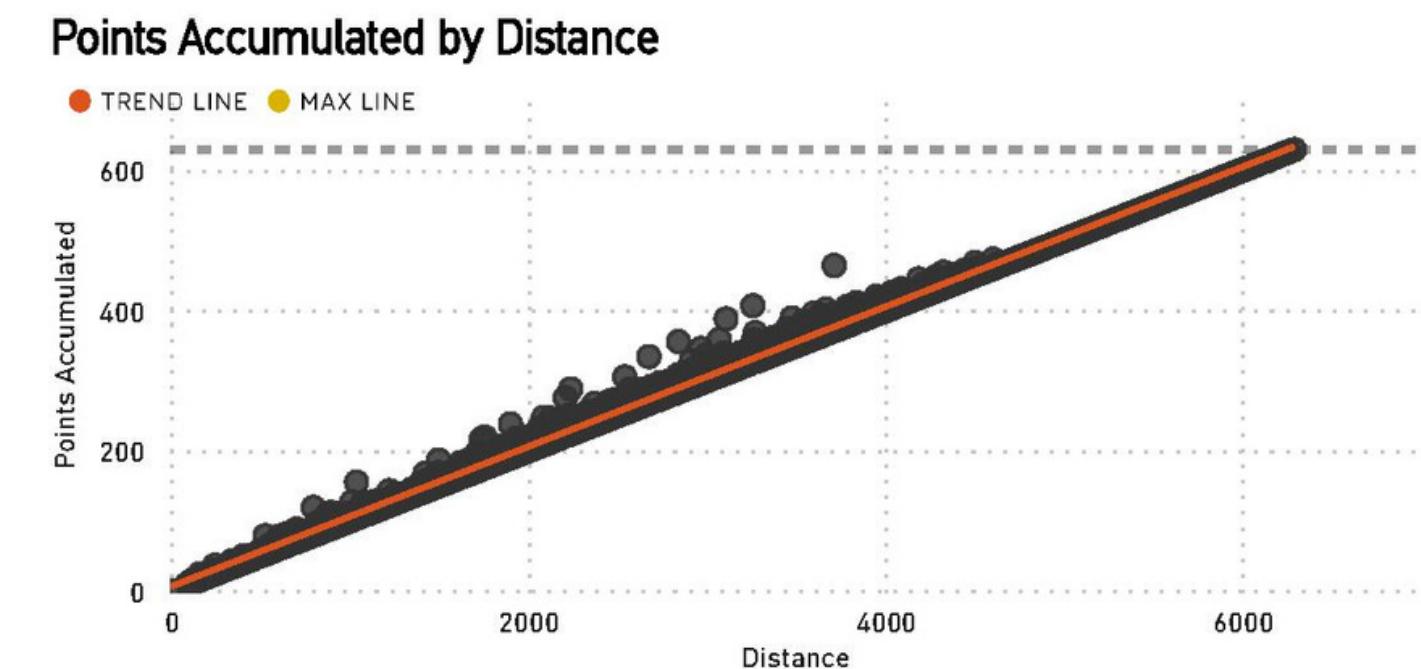
Flight Activity Analysis

Correlation Between Flight Distances and Loyalty Points Accumulated

In exploring the relationship between flight distances and loyalty points accumulated, a **positive correlation** was observed. As the distance traveled increases, there is a corresponding increase in the average points accumulated by customers. Notably, the highest average points accumulation was observed at a distance of **6,293 miles**, where an average of **629 points** was accumulated per flight.

This finding suggests that customers tend to accumulate more loyalty points for longer-distance flights. FlyingWhale can use this findings to identify customers who frequently book long-distance flights and offer them personalized offers or discounts tailored to their travel preferences.

This personalized approach can enhance customer satisfaction and loyalty.



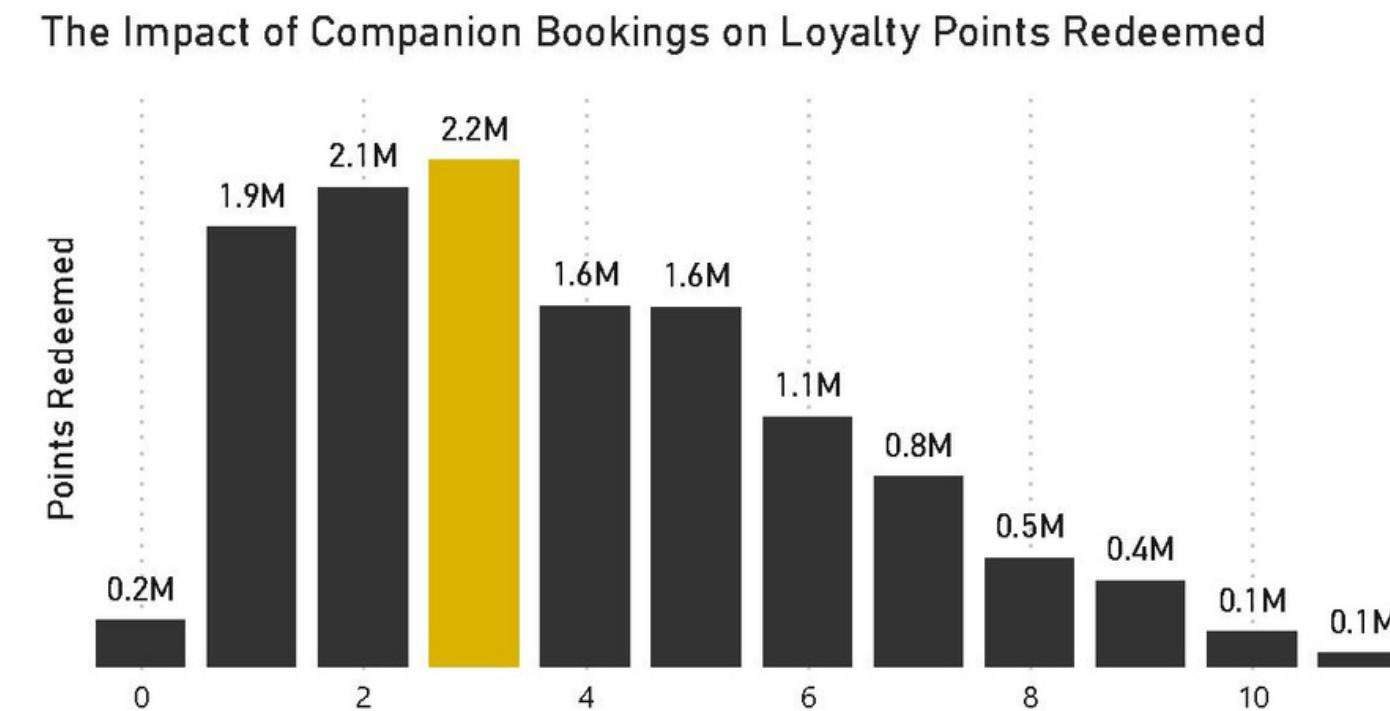
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Flight Activity Analysis

The Impact Of Companion Bookings On Loyalty Points

The analysis examined the relationship between companion bookings and loyalty points redeemed, uncovering notable trends. Customers traveling with **3 companions** redeemed the highest sum of points, totaling **219,508**, marking a substantial **3,679.16%** increase compared to customers with **11 companions**, who redeemed the lowest sum of points at **58,084**. This finding indicates a clear inverse correlation between companion size and points redeemed, with larger companion groups redeeming fewer points. Using these insights, FlyingWhale Airline could offer bonus points or exclusive benefits to customers who book flights with 1-3 number of companions, thereby incentivizing group travel and increasing points redemption.



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Loyalty Segmentation

Segment Customers Based on Loyalty Card Status

The majority of flights were taken by customers in the **Star** tier, totaling **950,040** flights, followed by the **Nova** tier with **706,167** flights and the **Aurora** tier with **431,482** flights. The distribution of flights across loyalty cards varied within each month, highlighting differential preferences among customers based on their loyalty card tier. These insights into the distribution of flights by loyalty card tier across months provide valuable information for targeted marketing strategies and potential enhancements to the loyalty program.

Month Name	Aurora	Nova	Star	Total
February	24359	40094	54396	118849
January	24701	40737	54201	119639
April	28647	47282	63349	139278
November	31163	51710	69419	152292
March	33233	54978	74048	162259
October	33870	55389	73565	162824
September	35983	57210	78121	171314
May	37044	60401	80358	177803
December	43481	70461	94752	208694
August	43202	72349	96912	212463
June	44492	73784	98700	216976
July	51307	81772	112219	245298
Total	431482	706167	950040	2087689

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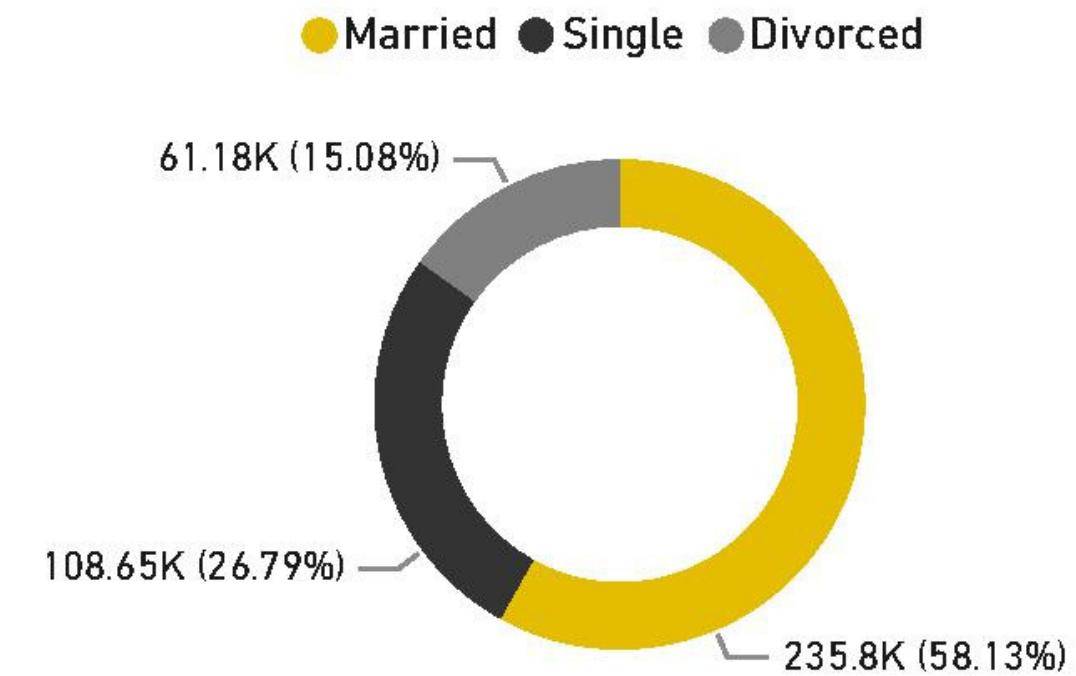


Loyalty Segmentation

Marital Status of Loyalty Members

Married individuals emerged as the largest group in terms of total flights, accounting for **235,800** flights, followed by **single** individuals with **108,648** flights and **divorced** individuals with **61,176** flights. Among loyalty program members, married individuals constituted the largest proportion at **58.13%**, followed by single members at **26.79%**, and divorced members at **15.08%**. Using these insights, FlyingWhale Airline could create promotional offers or advertisements that resonate with the preferences and needs of married individuals, such as family travel packages or couple discounts. Similarly, customized campaigns can be designed for single and divorced individuals to appeal to their unique travel preferences and interests.

Total Flights by Marital Status



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Loyalty Segmentation

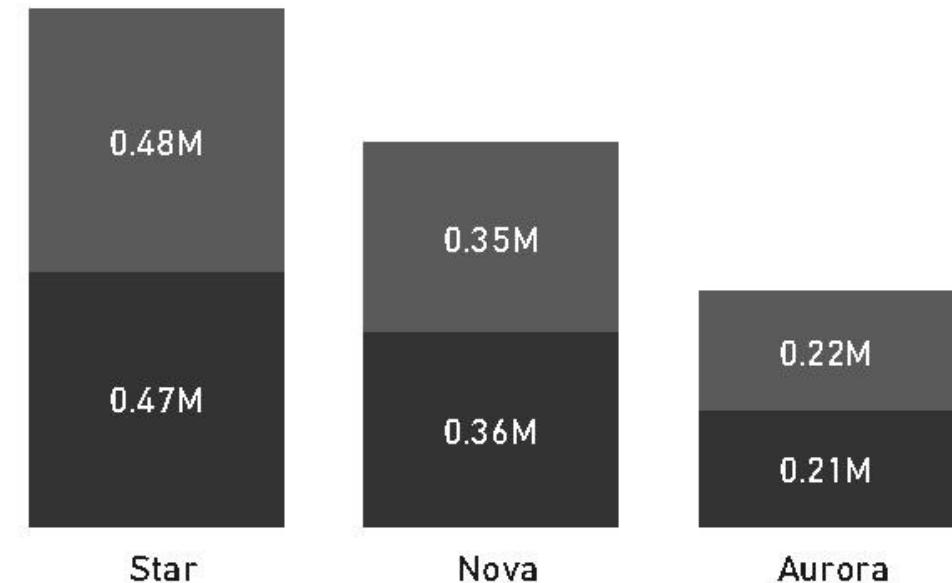
Flights Booking by Loyalty Card And Gender

Overall, the total number of flights booked by males exceeded those booked by females, with males booking a total of **1,045,764** flights compared to **1,041,925** flights booked by females. Within the Star loyalty card tier, males accounted for **22.99%** of the total flights booked, indicating a slightly higher representation compared to females. On average, males booked a higher sum of total flights, with an average of **348,588** flights, compared to an average of **347,308** flights booked by females.

Using these findings, FlyingWhale can customize loyalty program benefits and rewards to better align with the needs and preferences of male and female members. This could involve offering gender-specific incentives or perks within the loyalty program, such as exclusive discounts or bonus points for certain types of travel experiences.

Total Flights by Loyalty Card and Gender

● Female ● Male



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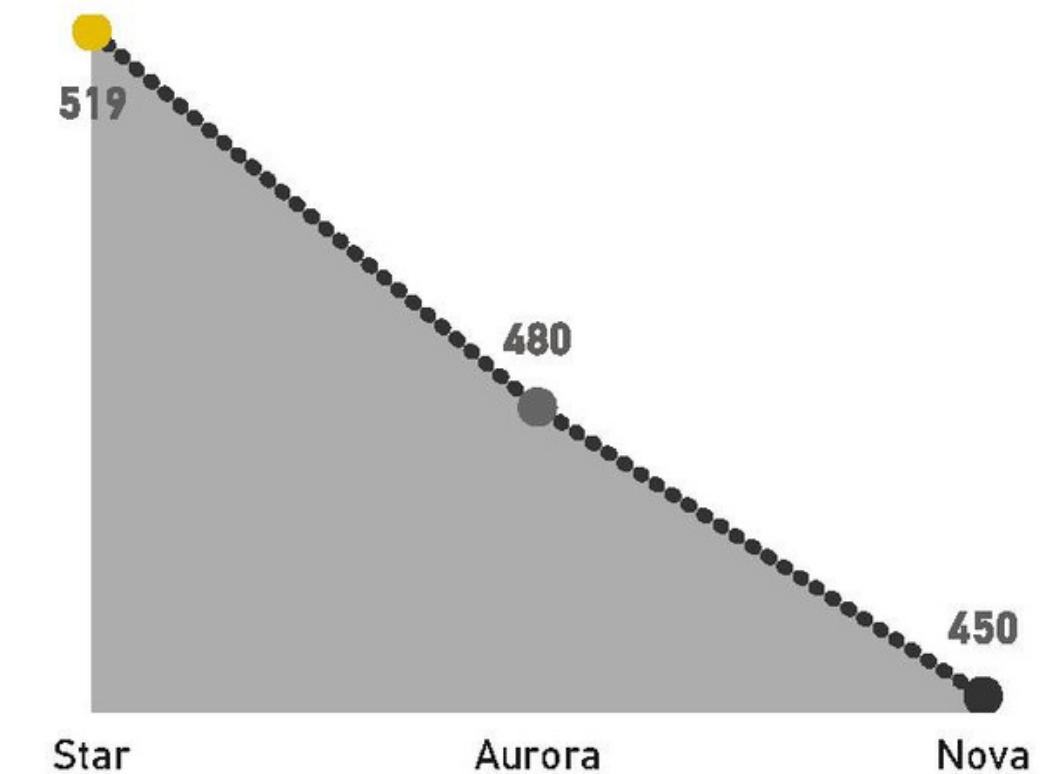


Loyalty Segmentation

Median Distance Travelled by Different Loyalty Card Tiers

The analysis of median distance traveled by customers across different loyalty card tiers revealed notable variations. The **Star** loyalty card tier exhibited the highest median distance traveled, with a median of **519 miles**. In contrast, the **Nova** loyalty card tier had the lowest median distance traveled, standing at **450 miles**, which was **15.33%** lower than the median distance for Star. The Aurora loyalty card tier fell between the other two tiers, with a median distance traveled of **480 miles**. These findings suggest distinct travel behaviors and preferences among customers across different loyalty card tiers.

Median of Distance by Loyalty Card



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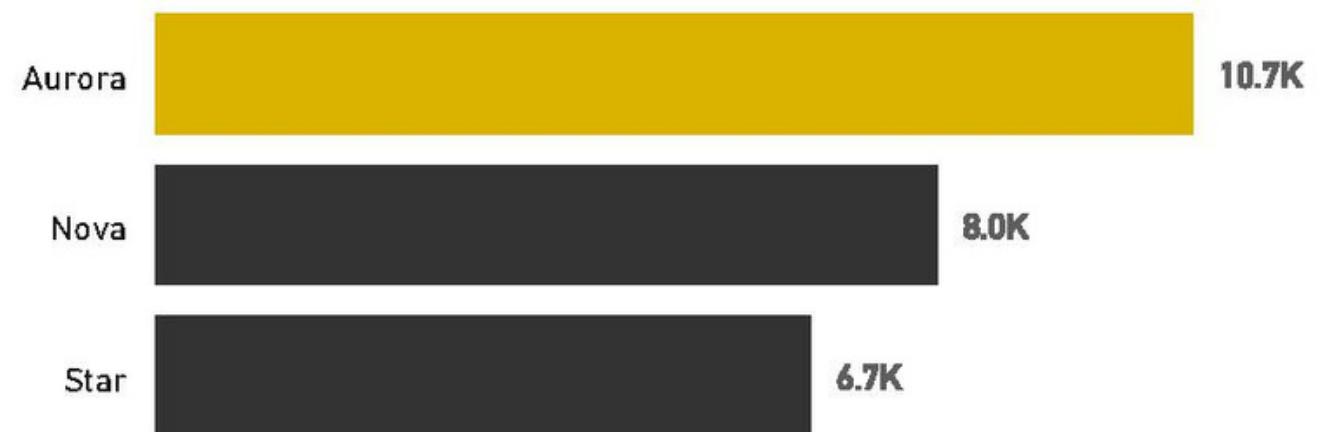


Loyalty Segmentation

Average Customer Lifetime Value

Despite fewer flights, members of the **Aurora** credit card tier exhibited the highest average CLV, indicating premium spending behavior with an average CLV of **\$10.8K**. The **Aurora** credit card tier had the highest average CLV at **\$10,672.69**, followed by the **Nova** credit card tier at **\$8,045.62** and the **Star** credit card tier at **\$6,741.76**. This notable variation in average CLV between credit card tiers underscores the importance of understanding spending patterns and customer value across different segments. Notably, the difference in average CLV between Aurora and Star was significant, with Aurora's average CLV being **58.31%** higher. These insights can inform targeted marketing strategies and loyalty program initiatives aimed at maximizing customer lifetime value and driving revenue growth.

Average of CLV by Loyalty Card



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Enrollment and Cancellation Trends

Average Duration of Enrollment Among Cancelled Members

Among the provinces studied, **New Brunswick** exhibited the longest average duration of enrollment before cancellation, with an average of **19.21 months**. Conversely, **Prince Edward Island** had the shortest average duration of enrollment among cancelled members, standing at **12.36 months**. These findings underscore the regional variations in customer retention and loyalty within the airline's membership base. Using these insights, FlyingWhale can analyze the factors contributing to longer enrollment durations in provinces like New Brunswick and identify best practices that can be applied to other regions. Understanding why customers in certain provinces maintain their enrollment longer can inform strategies to improve retention rates across the board.

Province	Average of Enrollment Duration (Months)
New Brunswick	19.21
Manitoba	17.78
Nova Scotia	16.79
Saskatchewan	16.38
Newfoundland	16.00
Ontario	15.89
British Columbia	15.50
Quebec	15.48
Alberta	15.25
Yukon	14.17
Prince Edward Island	12.36

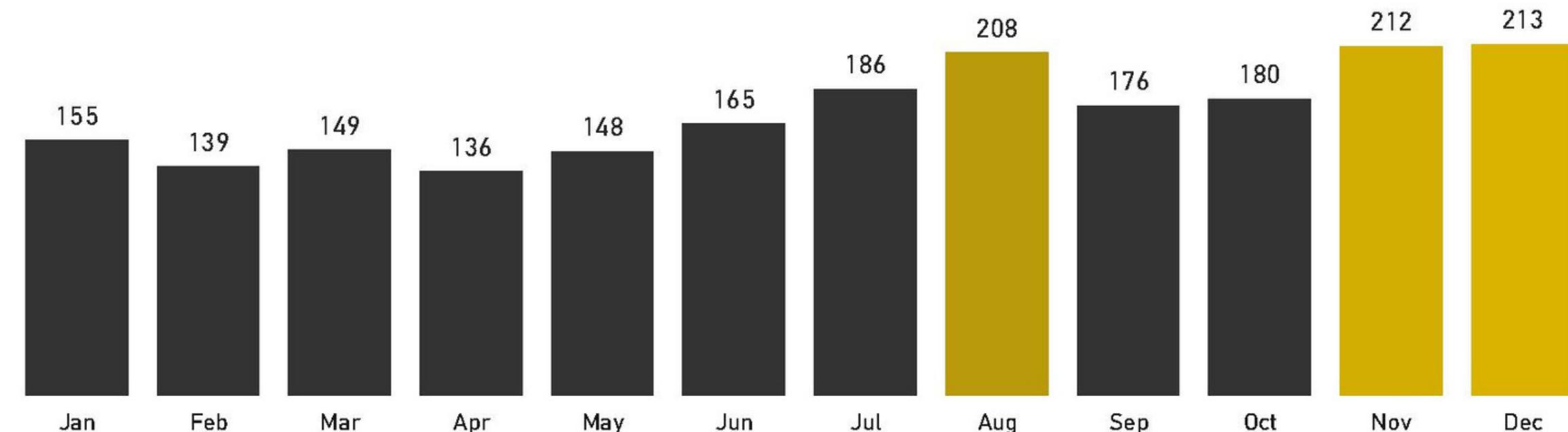
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Enrollment and Cancellation Trends

Most Popular Months for Cancellations

The analysis of loyalty program cancellations revealed significant insights into cancellation trends. **December** emerged as the month with the highest count of cancellations, totaling **213**, which was notably **56.62%** higher than **April**, the month with the lowest count of cancellations at **136**. Loyalty program cancellations exhibit a clear seasonal trend, spiking significantly in the final quarter of the year, particularly in October, November, and December, with December experiencing the highest number of cancellations. Conversely, cancellations are more stable throughout the middle of the year, with fluctuations, and reach a low point in the early months, such as February.



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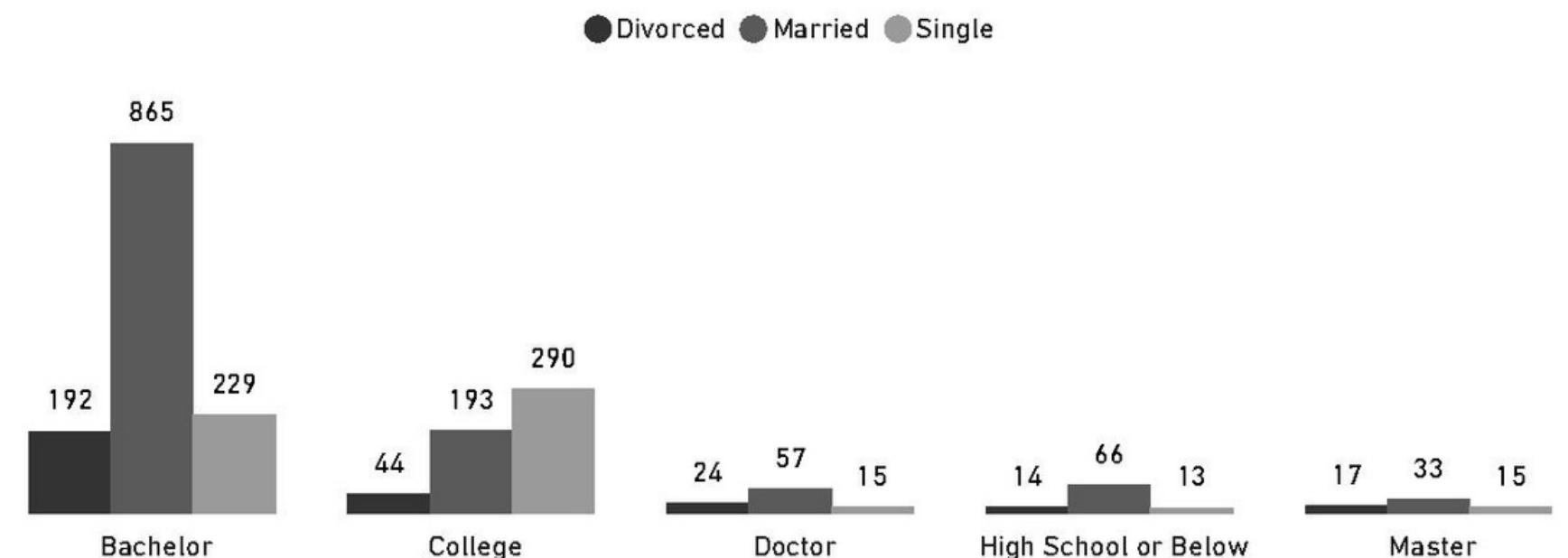
Enrollment and Cancellation Trends

Cancellations by Education and Marital Status

Individuals with a **bachelor's degree** displayed the highest cancellation rate, with **62.2%** of them cancelling their memberships. Similarly, **married** members exhibited the highest cancellation rate among marital status groups, with **58.7%** of married individuals cancelling their memberships. These findings highlight that individuals with a bachelor's degree and married individuals are cancelling their memberships at the highest rates.

Using these insights, FlyingWhale can review and enhance the benefits offered to members with a bachelor's degree and married individuals to increase their perceived value and incentivize them to maintain their memberships.

This could include exclusive offers, loyalty program enhancements, or personalized services designed to cater to their preferences and interests.



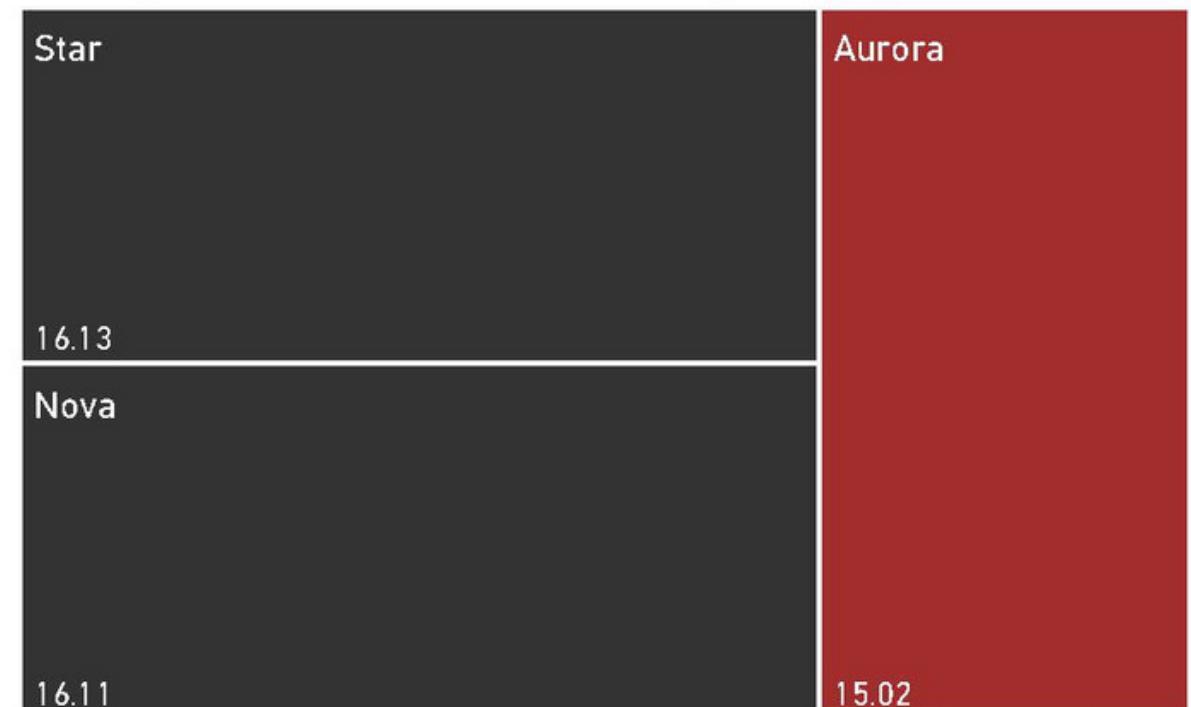
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Enrollment and Cancellation Trends

Lowest Enrollment Duration Among Cancellations

It was found that **Aurora cardholders** exhibited the shortest average enrollment duration before cancellation. This finding suggests potential dissatisfaction among Aurora cardholders with the loyalty program or a mismatch between the benefits offered and their expectations. Understanding these patterns is crucial for FlyingWhale Airline to identify areas for improvement in its loyalty program offerings and implement targeted measures to enhance member satisfaction and retention.



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Recommendation Strategies For Improving Enrollment And Retention

- Review and enhance the benefits and rewards offered to loyalty program members, ensuring they align with customer preferences and expectations. Consider introducing exclusive perks, such as priority boarding, lounge access, and discounted upgrades, to incentivize enrollment and encourage ongoing participation.
- Implement personalized communication strategies to engage with customers on a one-to-one basis. Leverage customer data to tailor messaging and offers based on individual preferences, travel history, and behavior. By providing relevant and timely communication, FlyingWhale Airline can enhance customer engagement and loyalty.
- Develop targeted marketing campaigns aimed at specific customer segments to promote enrollment and retention. Consider offering special promotions, discounts, or incentives to attract new members and encourage existing ones to stay engaged.
- Focus on delivering exceptional customer experiences at every touchpoint of the customer journey. Invest in training frontline staff to provide personalized service and assistance to loyalty program members. Enhance the online booking process, website navigation, and mobile app functionality to make it easier for customers to enroll in the loyalty program and manage their accounts.
- Regularly solicit feedback from customers to gain insights into their satisfaction levels, preferences, and pain points. Use surveys, focus groups, and social listening tools to collect feedback and analyze trends. Act on customer feedback by addressing issues, implementing suggestions for improvement, and continuously refining the loyalty program to better meet customer needs.