

TASK 3

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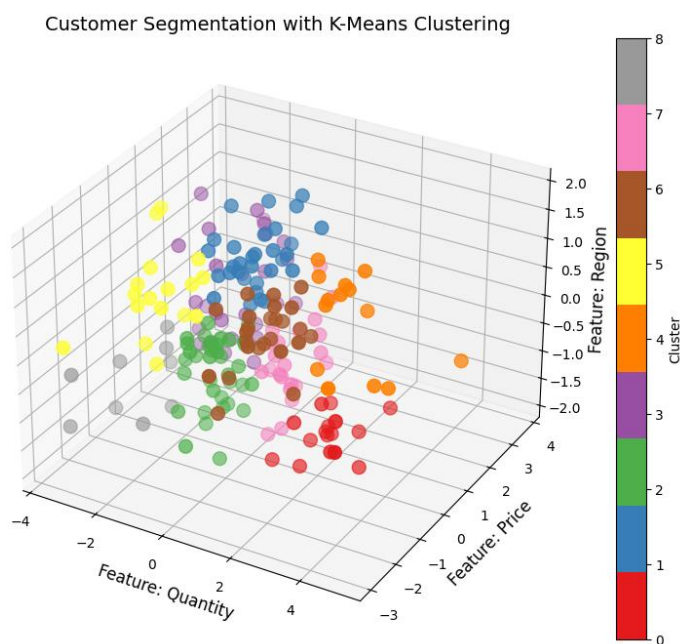
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GitHub: <https://github.com/Yatharth31/Zeotap-Data-Science-Assignment/>

K-Means clustering was applied over a range of K values between 2 and 10, and the lowest Davies-Bouldin (DB) index value was found for K = 9. The clustering graph is shown below:



The clustering plot reveals distinct customer segments based on Quantity, Price, and Region, providing valuable business insights. High-value customers, who make large purchases at higher prices, can be identified for targeted promotions and loyalty programs. Bulk buyers, characterized by high Quantity but lower Price, may indicate wholesale or discount-driven customers, allowing businesses to optimize pricing strategies. Regional clustering patterns can help tailor marketing campaigns and inventory distribution based on localized demand. Additionally, analyzing cluster behavior can uncover product demand trends, enabling businesses to refine their offerings and improve customer engagement. Understanding these segments allows for data-driven decision-making, enhancing customer retention and overall business efficiency.