**Analyze customer reviews and improve customer satisfaction**

* ***Customer reviews influence purchasing decisions*:** Customer reviews have a significant impact on purchasing decisions. Studies have shown that up to 90% of consumers read online reviews before making a purchase. Positive reviews can boost sales and attract new customers, while negative reviews can deter potential customers and damage the company's reputation.
* ***Customer reviews provide valuable feedback*:** Customer reviews provide businesses with valuable feedback about their products, services, and overall customer experience. This feedback can be used to identify areas for improvement and make changes that will lead to higher customer satisfaction.
* ***Customer reviews improve customer loyalty***: Satisfied customers are more likely to become loyal customers who repeat their business and recommend the company to others. By analyzing customer reviews and addressing customer concerns, businesses can increase customer loyalty and reduce churn.
* **Customer reviews build brand reputation:** A strong brand reputation is essential for long-term success. Customer reviews contribute to the company's brand reputation, and positive reviews can help to build a positive image and attract new customers.
* **Customer reviews identify potential problems:** Customer reviews can also help businesses identify potential problems before they become major issues. By monitoring customer reviews, businesses can proactively address customer concerns and prevent negative word-of-mouth.

**Questions**

1. What are the highest/lowest-rated books?
2. Which authors have the most positive/negative reviews?
3. What are the most common customer complaints?
4. What are the trends in customer reviews over time?

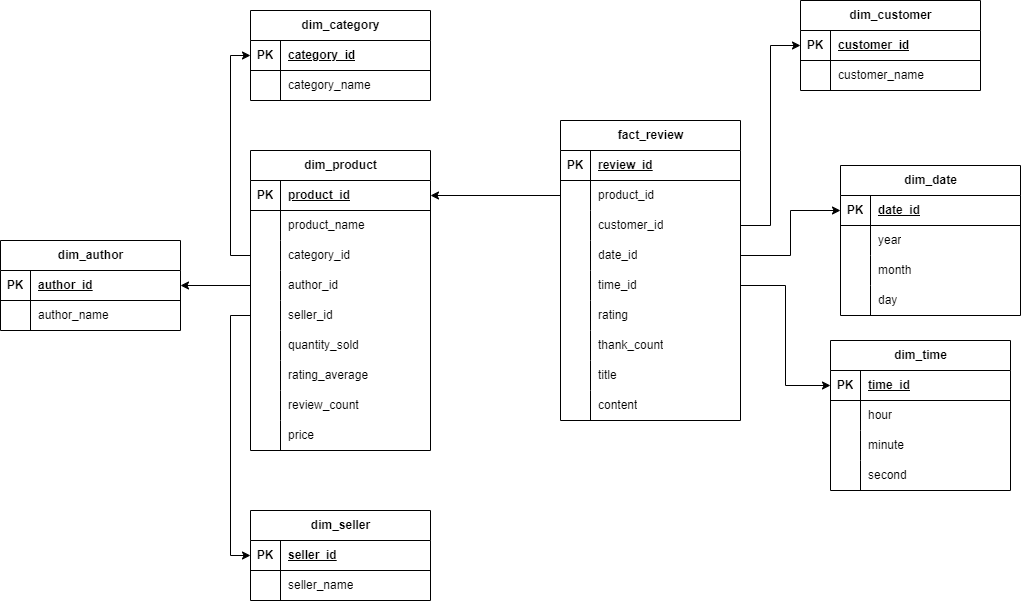
**Data warehouse design**

***Dimension Tables:***

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Column Name** | **Data Type** | **Description** |
| category | category\_id | int | Primary key |
| category\_name | varchar(255) | Category’s name |
| author | author\_id | int | Primary key |
| author\_name | varchar(255) | Author’s name |
| product | product\_id | int | Primary key |
| product\_name | varchar(255) | Product’s name |
| category\_id | int | Foreign key (category) |
| author\_id | int | Foreign key (author) |
| quantity\_sold | int | Total sold product |
| rating\_average | decimal(1,1) | Average rating |
| review\_count | int | Total review on product |
| price | decimal(10,2) | Product’s price |
| customer | customer\_id | int | Primary key |
| customer\_name | varchar(255) | Customer’s name |
| seller | seller\_id | int | Primary key |
| seller\_name | varchar(255) | Seller’s name |
| date | date\_id | int | Primary key |
| year | int |  |
| month | int |  |
| day | int |  |
| time | time\_id | int | Primary key |
| hour | int |  |
| minute | int |  |
| second | int |  |

***Fact Table:***

|  |  |  |  |
| --- | --- | --- | --- |
| **Table Name** | **Column Name** | **Data Type** | **Description** |
| review | review\_id | int | Primary key |
| product\_id | int | Foreign key (product) |
| customer\_id | int | Foreign key (customer) |
| date\_id | int | Foreign key (date) |
| time\_id | int | Foreign key (time) |
| rating | decimal(1,1) | Reviewer’s rating |
| thank\_count | int | Total thank count on that review |
| title | varchar(255) | Value in set (“Cực kỳ hài lòng”,”Hài lòng”,…) |
| content | varchar(max) | Review’s content |

**Star schema**