**DB-ASSIGNMENT**

**Q1. Explain the relationship between the "Product" and "Product\_Category" entities from the above diagram.**

In the provided schema, the "Product" and "Product\_Category" entities are related through a foreign key relationship. Specifically, the "category\_id" column in the "Product" table serves as a foreign key that references the primary key column "id" in the "Product\_Category" table.

The "category\_id" column in the "Product" table stores the identifier of the category to which each product belongs. This column establishes a foreign key relationship with the "id" column in the "Product\_Category" table. By including the "category\_id" column in the "Product" table, it becomes possible to associate each product with a specific category. This allows for categorizing products and organizing them logically within the system.

Through this relationship, you can perform queries that join the "Product" and "Product\_Category" tables based on the "category\_id" foreign key. For example, you could retrieve a list of all products along with their corresponding categories, or you could filter products by category.

**Q2. How could you ensure that each product in the "Product" table has a valid category assigned to it?**

Each product in the "Product" table has a valid category assigned to it, you can utilize a foreign key constraint. The foreign key constraint ensures that the value stored in the "category\_id" column of the "Product" table references an existing "id" in the "Product\_Category" table. This means that a product cannot have a category\_id that does not exist in the Product\_Category table