Project Title: E-Commerce Database management system

Acronym: DB15

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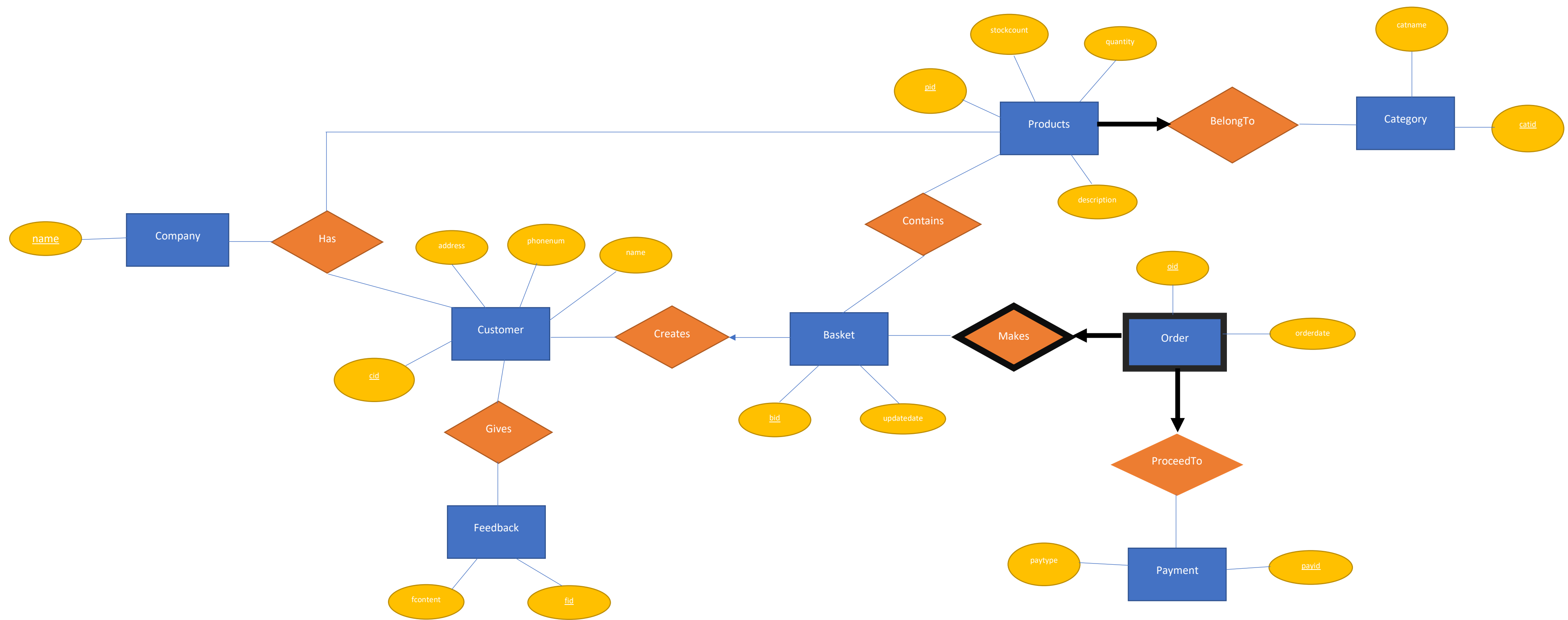
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Our database system keeps track of the orders of customers from a specific company. Our system provides access to the companies' products via online website. Online website has a content management system in order to monitor products, categories, customers, orders, payments and customers' feedbacks. The company can upload their products information to the database such as the product id, category id, quantity, stock count and description of the items. Moreover, each product can be categorized to maintain a user-friendly interface. Categories also have their unique ids' which can be beneficial for the customers to find their desired products.

Users' personal information are uploaded to the companies' database after the sign-up process. User model has attributes that include users' username, address, identity number and phone number in order to keep in touch with the customers. User model also can create basket entities which allows users to add their desired products into it. User and basket entity has a one-to-many relationship which provides a customer to have more than one basket simultaneously. Basket entity has attributes that are basket id and last update date. Basket entity has a relationship with the order entity so if a customer confirms their basket these products are transmitted into the order entity. Thus, we can observe the details of the products selected by the customer through the order table in the database model. Also, a basket that was created by a customer remains its' data in our database system in order to provide the user an option to repeat their order if they want to.

Products are visible to all users, however; customers have to login in order to purchase products from the company. After skimming through the categorized products and deciding the basket, user proceeds to the ordering step. Order entity has order date and order id attributes. Order id is linked to the users' personal basket id. Thus, each order can be distinguished by their id from other orders. In addition, the order entity is a weak entity because without a basket, products can't be ordered. Ordering process proceeds to the payment step. The payment entity has two attributes which are payment type and payment id. Moreover, order entity has a many-to-one relationship with the payment entity. After finalizing and approving the basket, user is prompted to choose the payment method between credit card and cash options. The credit card information can be saved and accessed by the user in order to be used in further purchases. After the payment selection if the payment is successfully completed products that user ordered are ready for the transmission. At the end of the ordering process users can upload their feedbacks to the site. Feedbacks have three attributes which are user id, feedback content and feedback date. These feedbacks are also saved into the database and transmitted to the main company. Feedbacks are crucial for the company to analyse the course of events and to decide whether a reorganization is necessary to receive better results from the committed commerce.

To sum up, our database system aims to deliver a companies' products to a customer via our website in a trustworthy environment. This database system stores every data and steps taken throughout the process.

Entity-Relationship Diagram

Entities and attributes:

- **Company**: name
- **Products**: stockcount, quantity, pid, description
- **Category**: catname, catid
- **Customer**: address, phonenum, name, cid
- **Basket**: hid, updatedate
- **Order**: pid, orderdate
- **Payment**: paytype, pavid
- **Feedback**: fcontent, fid

Relationships:

- Company **Has** Customer
- Products **BelongTo** Category
- Products **Contains** Basket
- Customer **Creates** Basket
- Customer **Gives** Feedback
- Basket **Makes** Order
- Order **ProceedTo** Payment

CREATE TABLE Company (name CHAR(20), PRIMARY KEY (name))

CREATE TABLE Customer (cid INTEGER, address CHAR(50), phonenum INTEGER, name CHAR(20), PRIMARY KEY (cid))

CREATE TABLE Products (pid INTEGER, stockcount INTEGER, quantity INTEGER, description CHAR(50), PRIMARY KEY (pid))

CREATE TABLE Category (catid INTEGER, catname CHAR(20), PRIMARY KEY (catid))

CREATE TABLE BelongTo (pid INTEGER, catid INTEGER NOT NULL, PRIMARY KEY (pid), FOREIGN KEY (pid) REFERENCES Products, FOREIGN KEY (catid) REFERENCES Category)

CREATE TABLE Feedback (fcontent CHAR(100), fid INTEGER, PRIMARY KEY (fid))

CREATE TABLE Gives (cid INTEGER, fid INTEGER, PRIMARY KEY (cid, fid), FOREIGN KEY (cid) REFERENCES Customer, FOREIGN KEY (fid) REFERENCES Feedback)

CREATE TABLE Basket (bid INTEGER, updatedate DATE, PRIMARY KEY (bid))

CREATE TABLE Creates (cid INTEGER, bid INTEGER, PRIMARY KEY (bid), FOREIGN KEY (cid) REFERENCES Customer, FOREIGN KEY (bid) REFERENCES Basket)

CREATE TABLE Contains (bid INTEGER, pid INTEGER, PRIMARY KEY (bid, pid), FOREIGN KEY (bid) REFERENCES Basket, FOREIGN KEY (pid) REFERENCES Products)

CREATE TABLE Order_Makes (bid INTEGER NOT NULL, oid INTEGER, orderdate DATE, PRIMARY KEY (bid, oid), FOREIGN KEY (bid) REFERENCES Basket, ON DELETE CASCADE)

CREATE TABLE Payment (payid INTEGER, paytype CHAR(20), PRIMARY KEY (payid))

CREATE TABLE ProceedTo (oid INTEGER, payid INTEGER NOT NULL, PRIMARY KEY (oid), FOREIGN KEY (oid) REFERENCES Order, FOREIGN KEY (payid) REFERENCES Payment)