

Database Project

Design a Relational Database for Smart Toy Co.

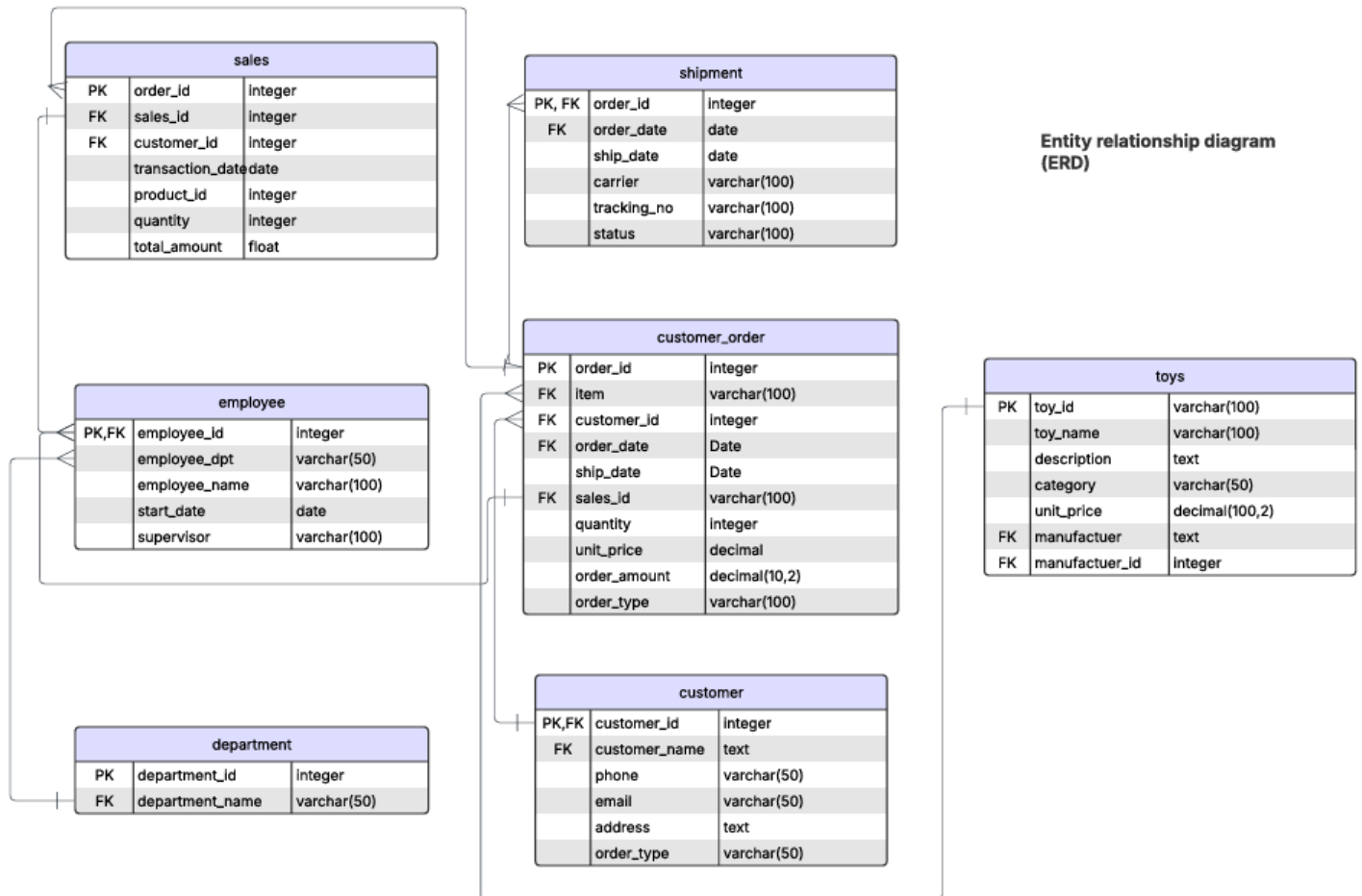
This project consists of 3 parts, including:

Part I: Design the Database Schema, identify the key entities.

Part II: Create a Relational Database and tables.

Part III: Write queries to answer business questions.

Part I: Design the Database Schema



Part II: Create a Relational Database

```
CREATE TABLE `department` (  
  `department_id` integer,  
  `department_name` varchar(50),  
  PRIMARY KEY (`department_id`)  
);
```

```
INSERT INTO department
VALUES (1,'Human Resource'),
      (2,'Sales'),
      (3,'Finance'),
      (4,'Logistics'),
      (5,'Customer Service'),
      (6,'IT');
```

```
CREATE TABLE `toys` (
  `toy_id` varchar(100),
  `toy_name` varchar(100),
  `description` text,
  `category` varchar(50),
  `unit_price` decimal(100,2),
  `manufactuer` text,
  `manufactuer_id` integer,
  PRIMARY KEY (`toy_id`)
);
```

```
CREATE TABLE `customer_order` (
  `order_id` integer,
  `item` varchar(100),
  `customer_id` integer,
  `order_date` Date,
  `ship_date` Date,
  `sales_id` varchar(100),
  `quantity` integer,
  `unit_price` decimal,
  `order_amount` decimal(10,2),
  `order_type` varchar(100),
  PRIMARY KEY (`order_id`),
  FOREIGN KEY (`item`)
    REFERENCES `toys` (`toy_id`)
);
```

```
CREATE TABLE `employee` (
  `employee_id` integer,
  `employee_dpt` varchar(50),
  `employee_name` varchar(100),
  `start_date` date,
  `supervisor` varchar(100),
  PRIMARY KEY (`employee_id`),
  FOREIGN KEY (`employee_dpt`)
    REFERENCES `department` (`department_name`),
  FOREIGN KEY (`employee_id`)
    REFERENCES `customer_order` (`sales_id`)
);
```

```
CREATE TABLE `customer` (
  `customer_id` integer,
  `customer_name` text,
```

```

`phone` varchar(50),
`email` varchar(50),
`address` text,
`order_type` varchar(50),
PRIMARY KEY (`customer_id`),
FOREIGN KEY (`customer_id`)
REFERENCES `customer_order` (`customer_id`)
);

```

```

CREATE TABLE `shipment` (
`order_id` integer,
`order_date` date,
`ship_date` date,
`carrier` varchar(100),
`tracking_no` varchar(100),
`status` varchar(100),
PRIMARY KEY (`order_id`),
FOREIGN KEY (`order_id`)
REFERENCES `customer_order` (`order_id`)
);

```

Part III: Query Data

Question 1: Who are the top 3 salespersons with ranking numbers from high to low?

```

select sales_id,
sum(total_amount) as total_sales,
rank() over(
    order by sum(total_amount) desc
) as sales_rank
from sales
group by sales_id
order by sales_rank
limit 3;

```

```

* sqlite:///SQLiteMagic.db
Done.

```

sales_id	total_sales	sales_rank
2137	159341.38	1
2126	115848.59	2
2169	105959.95	3

Question 2: Name the top 3 bestselling toys and list the total sales amount?

```

select
s.product_id,
t.category,
sum(s.total_amount) as total_sales
from sales as s
inner join toys as t
on s.product_id=t.toy_id
group by s.product_id, t.category
order by total_sales desc
limit 3

```

* sqlite:///SQLiteMagic.db
Done.

product_id	category	total_sales
gb010	STEM Toys	102523.24
gb009	Creative Toys	94484.12
gb007	Stuffed Animals	78344.07

Question 3: List of average shipping duration in days for all carriers.

```

SELECT
    carrier,
    round(AVG(julianday(ship_date) - julianday(order_date)),1)
    AS avg_ship_duration,
    COUNT(*) AS total_shipments
FROM shipment
GROUP BY carrier;

```

* sqlite:///SQLiteMagic.db
Done.

carrier	avg_ship_duration	total_shipments
DHL	2.9	10
FedEx	4.6	16
UPS	4.2	11
USPS	3.7	13