

# Database Project

## Design a Relational Database for Smart Toy Co.

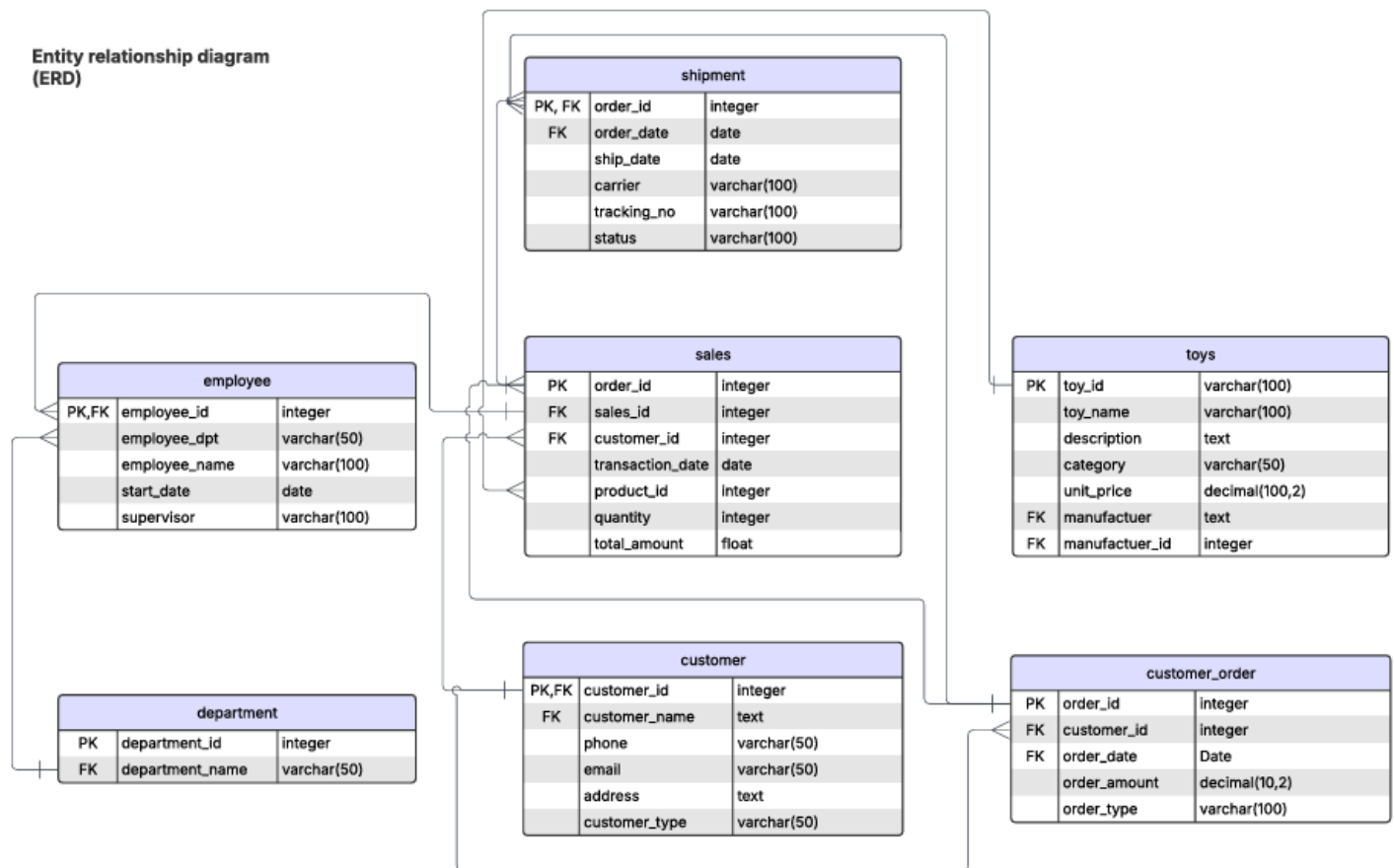
This project consists of 3 parts, including:

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 `customer` (  
  `customer_id` integer,  
  `customer_name` text,  
  `phone` varchar(50),  
  `email` varchar(50),  
  `address` text,  
  `customer_type` varchar(50),
```

```
PRIMARY KEY (`customer_id`)
```

```
);
```

```
CREATE TABLE `customer_order` (
```

```
`order_id` integer,
```

```
`customer_id` integer,
```

```
`order_date` Date,
```

```
`order_amount` decimal(10,2),
```

```
`order_type` varchar(100),
```

```
PRIMARY KEY (`order_id`),
```

```
FOREIGN KEY (`customer_id`)
```

```
REFERENCES `customer` (`customer_id`)
```

```
);
```

```
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 `sales` (
```

```
`order_id` integer,
```

```
`sales_id` integer,
```

```
`customer_id` integer,
```

```
`transaction_date` date,
```

```
`product_id` integer,
```

```
`quantity` integer,
```

```
`total_amount` float,
```

```
PRIMARY KEY (`order_id`),
```

```
FOREIGN KEY (`product_id`)
```

```
REFERENCES `toys` (`toy_id`),
```

```
FOREIGN KEY (`customer_id`)
```

```
REFERENCES `customer` (`customer_id`),
```

```
FOREIGN KEY (`order_id`)
```

```
REFERENCES `customer_order` (`order_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 `sales` (`order_id`),
FOREIGN KEY (`order_id`)
REFERENCES `customer_order` (`order_id`)
);

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

```

## Part III: Query Data

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

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```

1 --Question 1: Who are the top 3 salespersons with ranking numbers from high to low?
2 select sales_id,
3 sum(total_amount) as total_sales,
4 rank() over (
5   order by sum(total_amount) desc
6 ) as sales_rank
7 from `smart-toys.sales`
8 group by sales_id
9 order by sales_rank
10 limit 3;
11
12

```

✓ This script will process 1.72 KB when run.

Query results

Job information	Results	Chart	JSON	Execution details	Execution graph
Row	sales_id	total_sales	sales_rank		
1	2137	159341.38	1		
2	2126	115848.59	2		
3	2169	105959.95	3		

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

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\*Untitled...ery toys

Run Download Share Schedule Open in More Save query (Classic)

```
12 --Question 2: Name the top 3 bestselling toys and list the total sales amount?
13
14 select
15   s.product_id,
16   t.category,
17   sum(s.total_amount) as total_sales
18 from `smart_toys.sales` as s
19 inner join `smart_toys.toys` as t
20 on s.product_id = t.toy_id
21 group by s.product_id, t.category
22 order by total_sales desc
23 limit 3;
```

✔ This script will process 1.72 KB when run.

Query results

Job information Results Chart JSON Execution details Execution graph

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

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

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Run Save query (Classic) Share Schedule Open in More

```
25
26 -- Question 3: List of average shipping duration in days for all carriers with least days on top.
27 SELECT
28   carrier,
29   ROUND(AVG(DATETIME_DIFF(DATETIME(ship_date), DATETIME(order_date), DAY)), 1) AS avg_ship_duration,
30   COUNT(*) AS total_shipments
31 FROM `smart_toys.shipment`
32 GROUP BY carrier
33 ORDER BY avg_ship_duration;
```

✔ This script will process 2.79 KB when run.

Query results

Job information Results Chart JSON Execution details Execution graph

Row	carrier	avg_ship_duration	total_shipments
1	DHL	2.9	10
2	USPS	3.7	13
3	UPS	4.2	11
4	FedEx	4.6	16