

Stuart School
of Business



ILLINOIS INSTITUTE OF TECHNOLOGY

DBMS PROJECT

FOXCORE RETAIL
DESIGNING A DATABASE

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Agenda

- Company Background
- Business Problem
- Proposed Solution
 - ER Diagram
 - DDL
 - SQL Statement
- Conclusion



Background

Company Name:
Foxcore Retail

Founders: Liam Corrigan
and Mitchell Fox

Founding Year: After
graduating from the
University of Western
Ontario

Initial Business: Selling
inexpensive novelty
items at music festivals
and trade shows

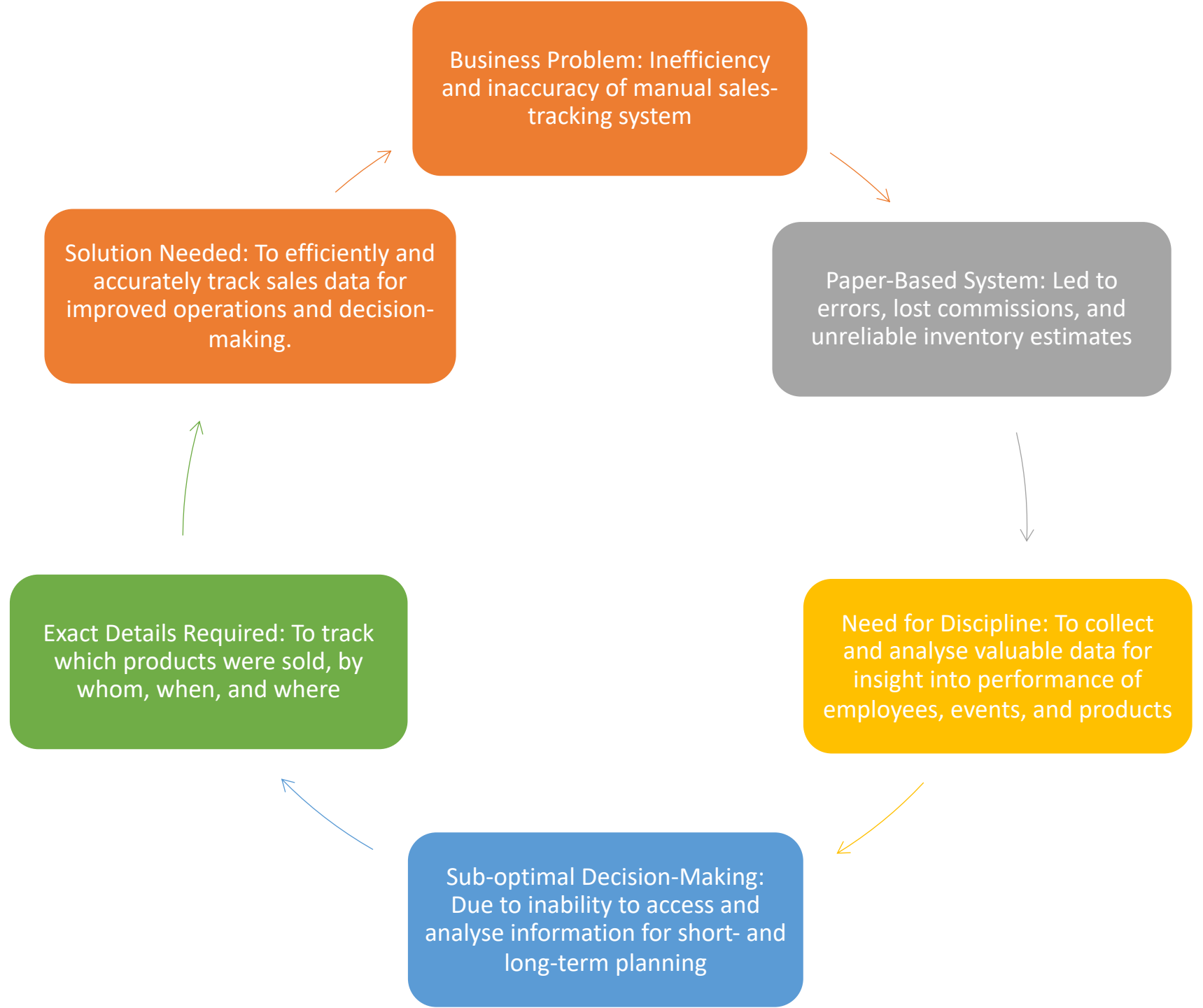
Business Name: A
combination of the
founders' last names

Growth Strategy: Hired
salespeople and paid
commissions to
incentivize performance

Product Expansion:
Tested a variety of new
products tailored to
specific kinds of shows

Second Year Milestone:
Managed up to three
shows per weekend,
with multiple booths at
some venues.

Business Problem



Design

Design a custom relational database system

Track

Efficiently track events, sales consultants, and individual sales of different products

Collect

Collect valuable data by accessing and analyzing databases

Use

Use data to provide strategic insights for short- and long-term planning

Track

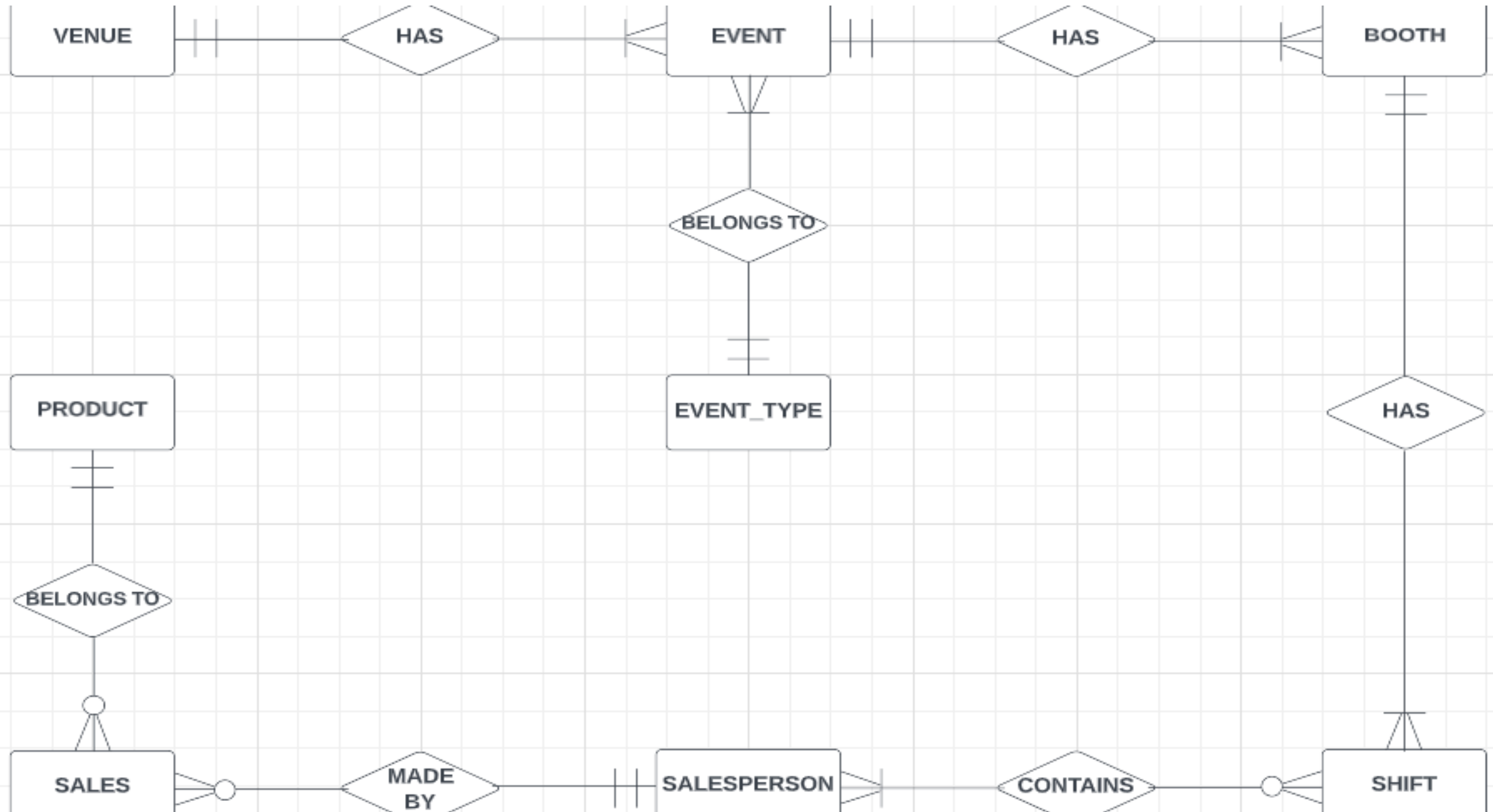
Accurately track sales and identify top-selling products

Optimize

Optimize operations based on data-driven decisions

Proposed Solution

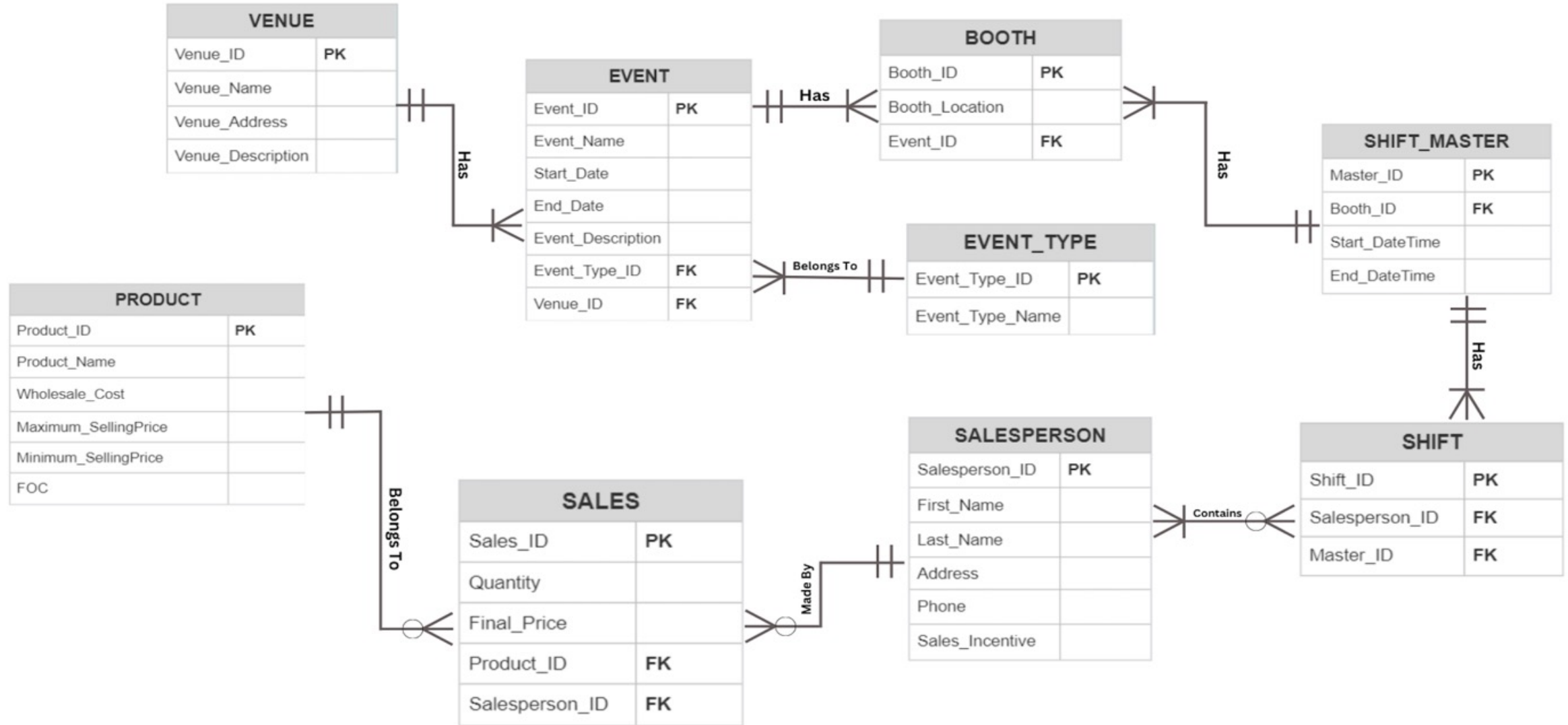
ER DIAGRAM



DDL Command

Entity	Attributes	Datatype
VENUE	Venue_ID (PK)	VARCHAR(10)
	Venue_Name	VARCHAR(50)
	Venue_Address	VARCHAR(100)
	Venue_Description	VARCHAR(200)
EVENT	EVENT_ID (PK)	VARCHAR(10)
	Event_Name	VARCHAR(50)
	Start_Date	DATE
	End_Date	DATE
	Event_Description	VARCHAR(200)
BOOTH	Booth_ID (PK)	VARCHAR(10)
	Booth_Location	VARCHAR(200)
EVENT_TYPE	Event_Type_ID (PK)	VARCHAR(10)
	Event_Type_Name	VARCHAR(50)
SHIFT_MASTER	Master_ID (PK)	VARCHAR(10)
	Start_DateTime	DATETIME
	End_DateTime	DATETIME
SHIFT	Shift_ID (PK)	VARCHAR(10)
SALESPERSON	Salesperson_ID	VARCHAR(10)
	First_Name	VARCHAR(50)
	Last_Name	VARCHAR(50)
	Address	VARCHAR(200)
	Phone	VARCHAR(20)
	Sales_Incentive	DECIMAL(5,2)
SALES	Sales_ID (PK)	VARCHAR(10)
	Quantity	INTEGER
	Final_Price	DECIMAL(10,2)
PRODUCT	Product_ID (PK)	VARCHAR(10)
	Product_Name	VARCHAR(50)
	Wholesale_Cost	DECIMAL(10,2)
	Maximum_SellingPrice	DECIMAL(10,2)
	Minimum_SellingPrice	DECIMAL(10,2)
	FOC	BIT

Foxcore Retail DB Relational Schema



Insert Statements

Table Event

```
CREATE TABLE EVENT (  
    Event_ID VARCHAR(10) NOT NULL ,  
    Event_Name VARCHAR(50) NOT NULL,  
    Start_Date DATE NOT NULL,  
    End_Date DATE NOT NULL,  
    Event_Description VARCHAR(200),  
    Event_Type_ID VARCHAR(10) NOT NULL,  
    Venue_ID VARCHAR(10) NOT NULL,  
    PRIMARY KEY (Event_ID),  
    FOREIGN KEY (Event_Type_ID) REFERENCES EVENT_TYPE(Event_Type_ID),  
    FOREIGN KEY (Venue_ID) REFERENCES VENUE(Venue_ID)  
);
```

Insert Record into Event Table

```
INSERT INTO EVENT (Event_ID, Event_Name, Start_Date, End_Date,  
    Event_Description, Event_Type_ID, Venue_ID) VALUES ('E1', 'Trade  
Show 2023', '2023-06-10', '2023-06-12', 'Come and see the latest products  
and services from the industry leaders.', 'ET1', 'V1');
```

Result

Event_ID	Event_Name	Start_Date	End_Date	Event_Description	Event_Type_ID	Venue_ID
E1	Trade Show 2023	10/06/23	12/06/23	Products and services	ET1	V1

Insert Statements

Table Sales

```
CREATE TABLE SALES (  
    Sales_ID VARCHAR(10) NOT NULL,  
    Quantity INTEGER NOT NULL,  
    Final_Price DECIMAL(10, 2) NOT NULL,  
    Product_ID INTEGER NOT NULL,  
    Salesperson_ID INTEGER NOT NULL,  
    PRIMARY KEY (Sales_ID),  
    FOREIGN KEY (Product_ID) REFERENCES PRODUCT(Product_ID),  
    FOREIGN KEY (Salesperson_ID) REFERENCES SALESPERSON(Salesperson_ID)  
);
```

Insert Record into Sales Table

```
INSERT INTO SALES (Sales_ID, Quantity, Final_Price, Product_ID,  
    Salesperson_ID) VALUES ('SA1', 10, 250.00, P1, 'SP1');
```

Result

Sales_ID	Quantity	Final_Price	Product_ID	Salesperson_ID
SA1	10	250	P1	SP1

Insert Statement

Table Salesperson

```
CREATE TABLE SALESPERSON (  
    Salesperson_ID VARCHAR(10) NOT NULL,  
    First_Name VARCHAR(50) NOT NULL,  
    Last_Name VARCHAR(50) NOT NULL,  
    Address VARCHAR(200) NOT NULL,  
    Phone VARCHAR(20) NOT NULL,  
    Sales_Incentive DECIMAL(5,2) ,  
    CHECK (Sales_Incentive BETWEEN 0 AND 100)  
    PRIMARY KEY (Salesperson_ID)  
);
```

Insert Record into Salesperson Table

```
INSERT INTO SALESPERSON (Salesperson_ID, First_Name, Last_Name, Address, Phone,  
Sales_Incentive) VALUES ('SP1', 'Pravalika', 'Dasari', '123 Main St', '555-1234', 10);
```

Result

Salesperson_ID	First_Name	Last_Name	Address	Phone	Sales_Incentive
SP1	Pravalika	Dasari	123 Main St	555-1234	10

Update & Delete Statement

How would you modify the value of Sales_Incentive in the Salesperson table to change it from 10.00 to 15.00?

```
UPDATE Salesperson
```

```
SET Sales_Incentive = 15.00
```

```
WHERE Salesperson_ID = 'SP1';
```

Salesperson_ID	First_Name	Last_Name	Address	Phone	Sales_Incentive
SP1	Pravalika	Dasari	123 Main St	555-1234	15

How to Delete a Product whose Product_ID is P1?

```
DELETE FROM Product WHERE Product_ID = 'P1';
```

SQL Statement

The objective of the report is displays information about each salesperson, the percentage of incentive they earned, and the quantity of each product they sold

```
SELECT S.FIRST_NAME, S.LAST_NAME, S.SALES_INCENTIVE, ST.QUANTITY,  
ST.FINAL_PRICE, P.PRODUCT_NAME, (ST.QUANTITY * ST.FINAL_PRICE) AS  
TOTAL_COST
```

```
FROM SALESPERSON S
```

```
INNER JOIN SALES ST ON S.SALESPERSON_ID = ST.SALESPERSON_ID
```

```
INNER JOIN PRODUCT P ON S.PRODUCT_ID = P.PRODUCT_ID
```

FIRST_NAME	LAST_NAME	SALES_INCENTIVE	QUANTITY	FINAL_PRICE	PRODUCT_NAME	TOTAL_COST
John	Smith	5	10	20	Product A	200
Sarah	Johnson	3.5	5	15.5	Product B	77.5
Michael	Brown	7	8	12.25	Product C	98

SQL Statement

The objective of this query is to display a list of all events and their corresponding details

Select Venue_Name, Event_Name, Start_Date, End_Date, Event_Type_Name,
Booth_Location

From event as E

Inner join Event_Type ET on E.Event_Type_id = ET.EVENT_TYPE_ID

INNER JOIN VENUE V ON E.VENUE_ID = V.VENUE_ID

INNER JOIN BOOTH B ON E.EVENT_ID = B.EVENT_ID

Venue_Name	Event_Name	Start_Date	End_Date	Event_Type_Name	Booth_Location
Venue A	Event 1	01/05/23	05/05/23	Trade Show	Booth 1
Venue A	Event 1	01/05/23	05/05/23	Trade Show	Booth 2
Venue A	Event 2	01/06/23	03/06/23	Conference	Booth 3
Venue B	Event 3	01/07/23	02/07/23	Seminar	Booth 4

SQL Statement

The objective of this query is to display a list of all products sold by Foxcore.

Select Product_ID, Product_Name, Wholesale_Cost,
Maximum_SellingPrice, Minimum_SellingPrice

From Product

Product_ID	Product_Name	Wholesale_Cost	Maximum_SellingPrice	Minimum_SellingPrice	FOC
P0001	Product A	5	15	10	0
P0002	Product B	12.5	40	30	0
P0003	Product C	1.75	6	4.5	1

Conclusion

- The report outlines a comprehensive solution to the business problem faced by Foxcore Retail.
- A detailed plan for implementing a custom relational database system is provided.
- The proposed database system is expected to improve the efficiency and accuracy of sales tracking.
- This will enable Foxcore Retail to make informed decisions about its operations and optimize its performance.
- The database system will reduce data redundancy by eliminating duplicate data and ensuring consistency across all records.
- This will lead to a more streamlined and efficient data management process, reducing the risk of errors and ensuring accurate reporting.



**Thank you for
your attention!**



Any questions?!