


# WILEY

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A person's hands are shown holding a tablet. The person is wearing a light blue and white striped shirt. A semi-transparent white rectangular box is overlaid on the center of the image, containing the title text. The background is a blurred blue and green color.

# 设计、创建和填充SQLite数据库



选择不正确的数据库会：

- 影响应用性能
- 导致应用崩溃

哪种数据库对于应用是最好的？

# SQLite和Core Data



关系型数据库SQLite



持久性存储框架Core Data

# SQLite和Core Data



- 基于关系模型存储数据
- 提供跨平台兼容性

# SQLite和Core Data



- 应用和数据库之间的抽象层
- 自动存储数据到数据库
- 是iOS设备上创建数据的推荐框架

# SQLite和Core Data



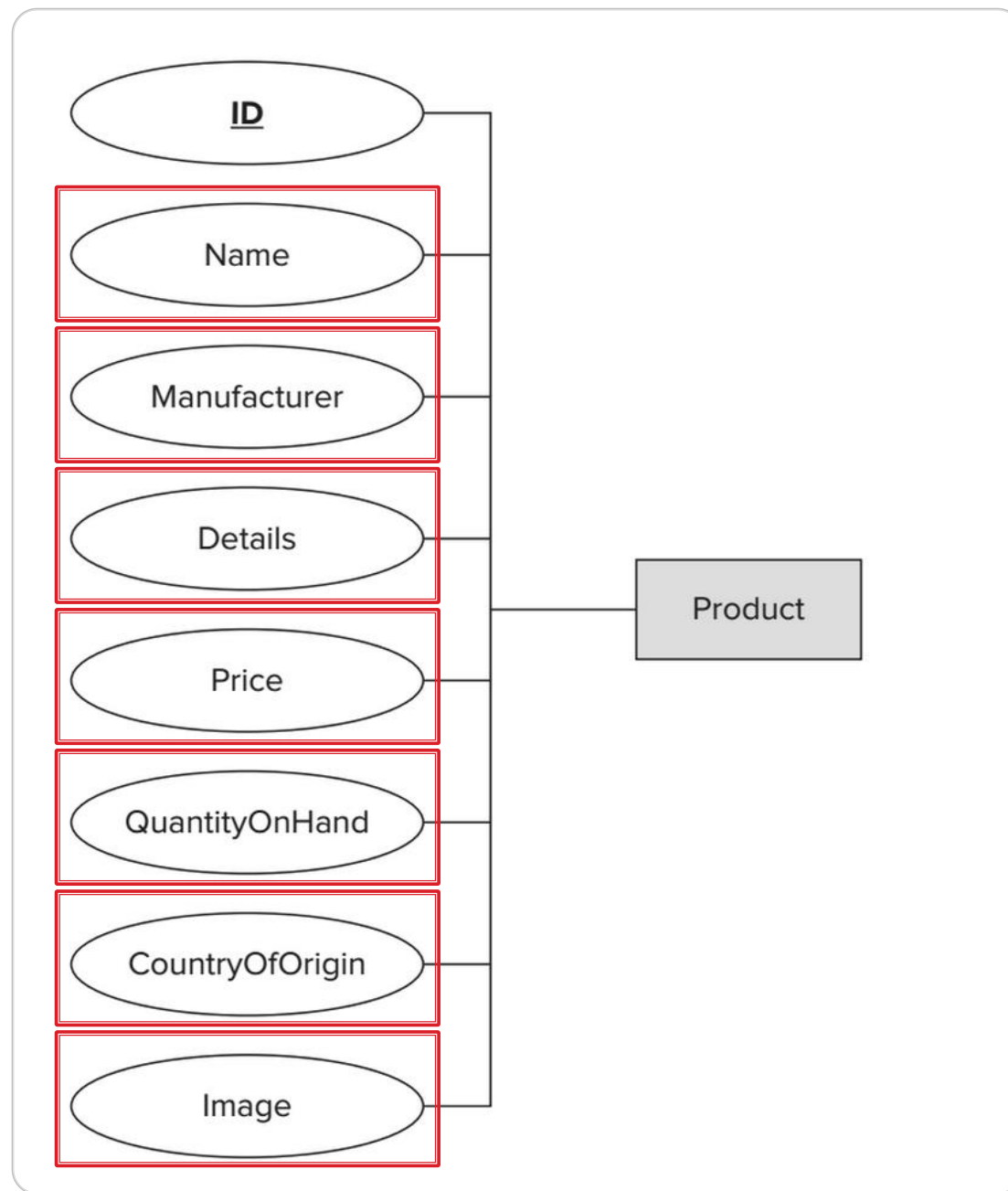
如果要在设备上预加载大量数据，可以直接使用SQLite API



A black tablet with a silver bezel is shown from a top-down perspective. The screen is black, and a white rectangular box is centered on it. Inside this box, the text '构建样本SQLite数据库' is written in a black, sans-serif font. The tablet has a small circular camera lens on the right side of the bezel and a small vertical slot on the left side.

构建样本**SQLite**数据库

Catalog, 显示某公司产品的名录  
点击产品会显示出产品的详情

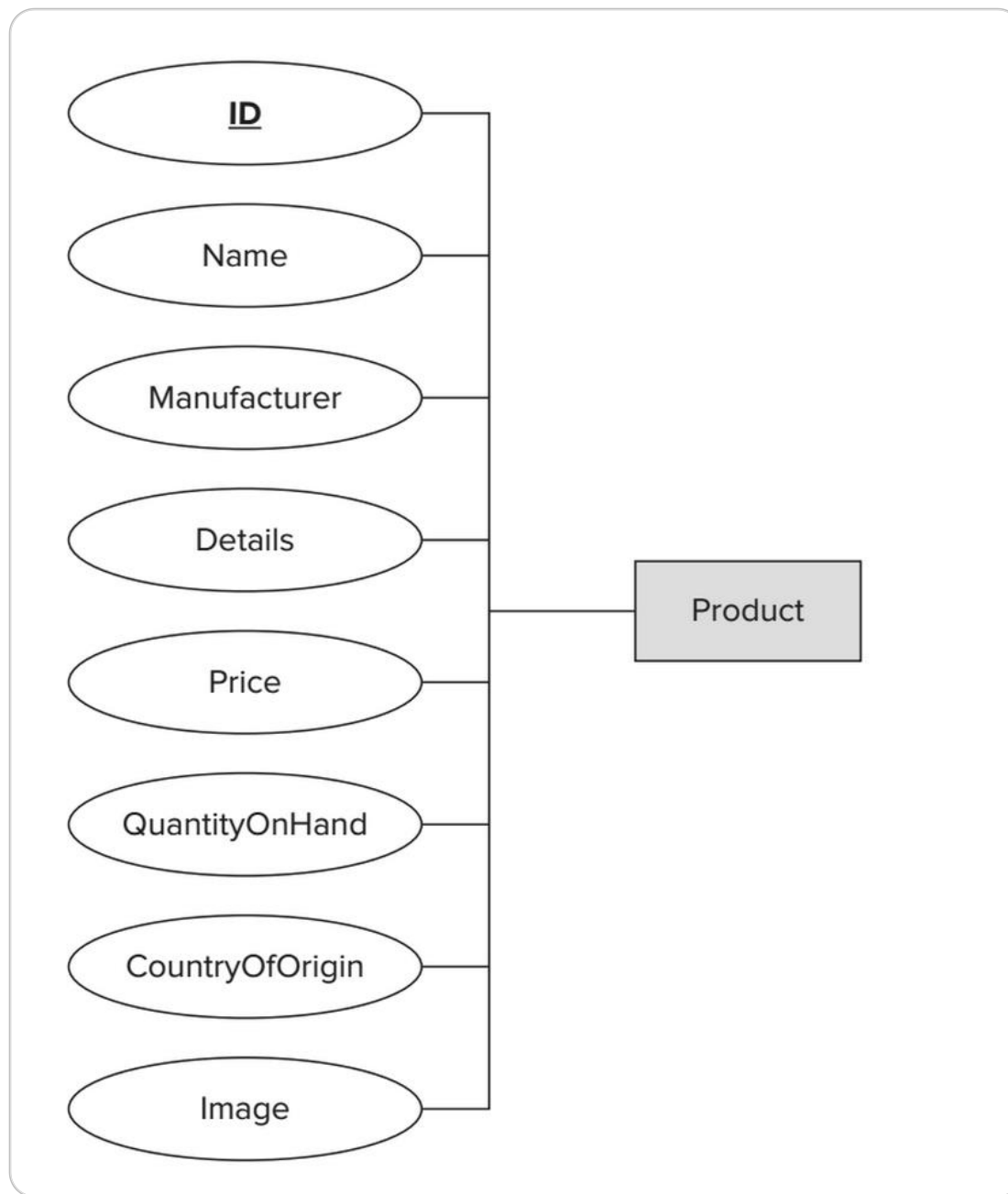


分析应用的需求并明确技术规格

规范化能够分解数据，让其易于查询

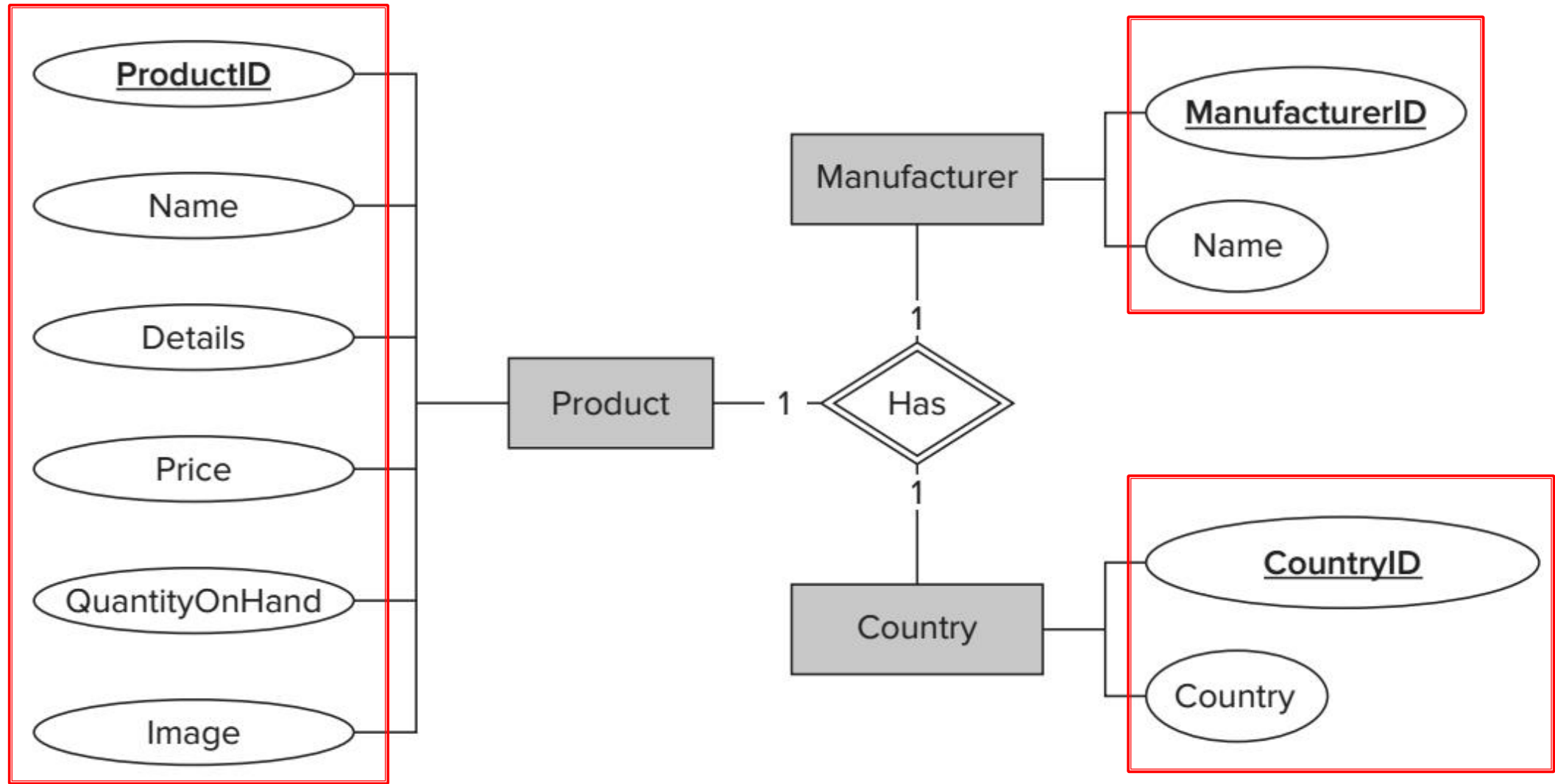


规范化能帮助避免数据库存储时常见的一些问题，例如数据重复。

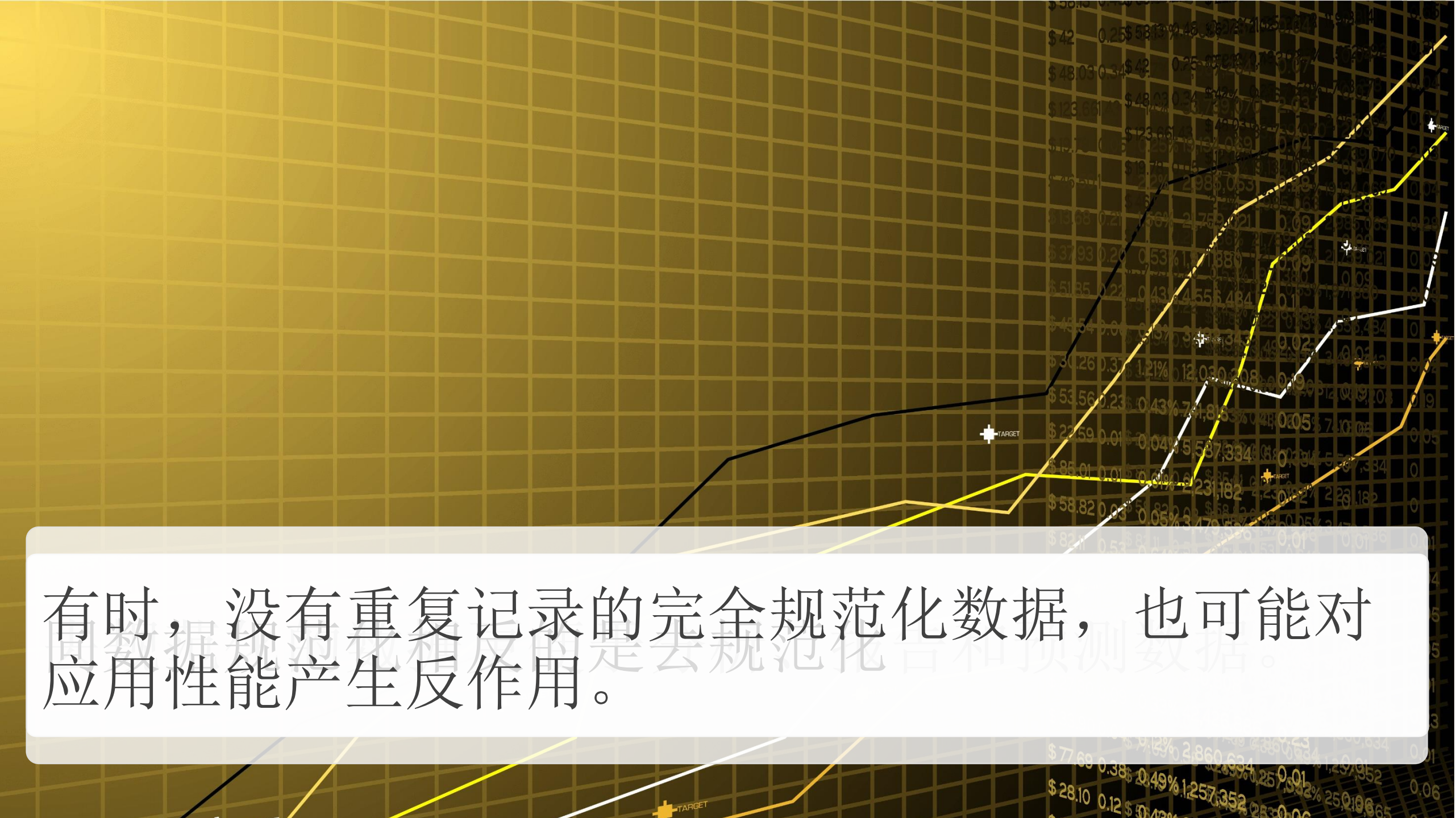


Product							
<u>ID</u>	Name	Manufacturer	Details	Price	QuantityOnHand	CountryOfOrigin	Image
1	Widget A	Spirit Industries	...	...	...	USA	...
2	Widget B	Industrial Designs	...	...	...	Taiwan	...
3	Widget X	Spirit Industries	...	...	...	China	...
4	Widget Y	Industrial Designs	...	...	...	China	...
5	Widget Z	Design Intl.	...	...	...	Singapore	...
6	Widget R	Spirit Industries	...	...	...	USA	...

数据完整性问题 – 通过数据规范化来避免





The background features a dark grid pattern overlaid with various financial data points, including currency symbols like '\$' and percentage signs. Several lines in black, yellow, and white trend upwards from left to right. Some of these lines are marked with a small white cross and the word 'TARGET'.

有时，没有重复记录的完全规范化数据，也可能对应用性能产生反作用。

命令行界面能够帮你使用脚本来创建和填充数据库





- 逗号分隔值
- 左对齐列
- HTML <table>代码
- SQL INSERT语句 用

命令行界面能够帮你使用脚本来创建和填充数据库

- Tab分隔值
- 工具命令语言（TCL）列表元素





```
aloks-Mac-mini-4:/ root# sqlite3 catalog.db
```

```
SQLite version 3.7.13 2012-07-17 17:46:21
```

```
Enter ".help" for instructions
```

```
Enter SQL statements terminated with a ";"
```

```
sqlite> .database
```

```
seq  name                file
```

```
-----
```

```
0      main              //catalog.db
```

```
sqlite> █
```

## **ATTACH DATABASE命令：**

- 将已有数据库附到SQLite工具
- 创建一个新数据库
- 可以被用于从一个数据库迁移数据到另一个

要退出命令行工具，输入**.exit**或**.quit**。

# Product表

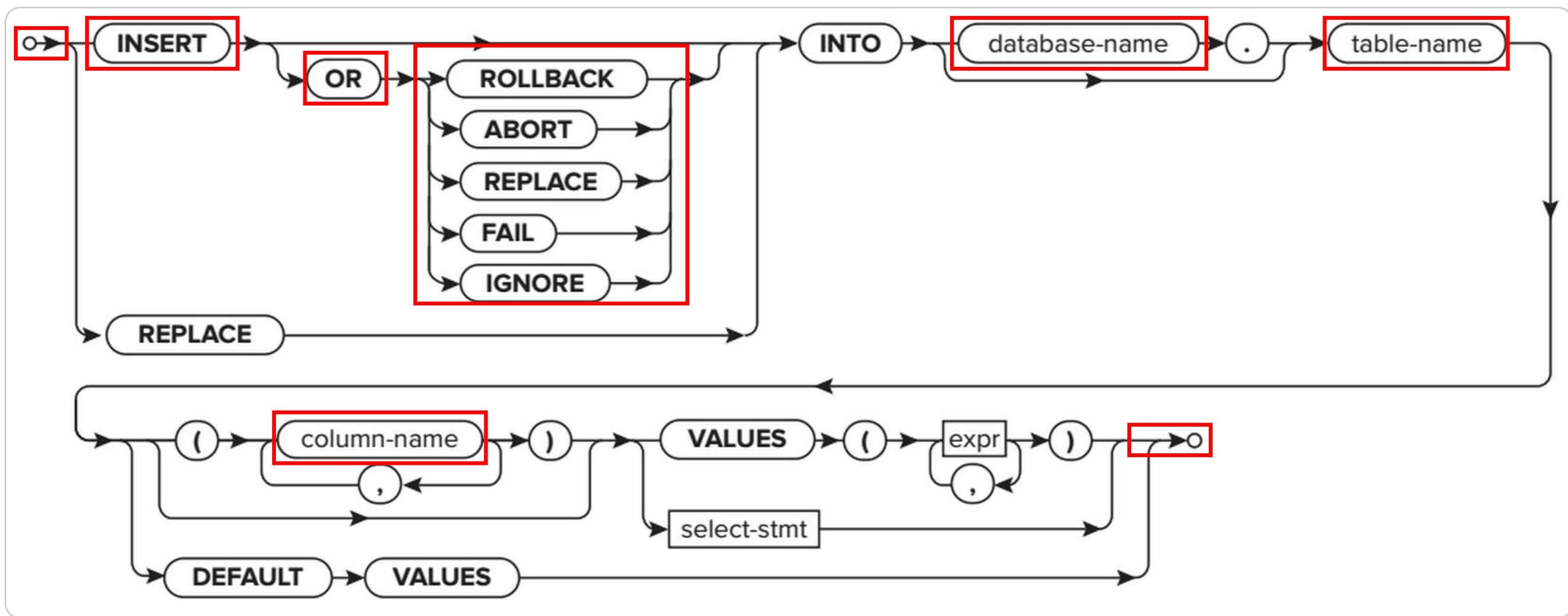
```
CREATE TABLE "main"."Product"  
  
("ID" INTEGER PRIMARY KEY AUTOINCREMENT NOT NULL,  
"Name" TEXT, "ManufacturerID" INTEGER, "Details"  
TEXT,"Price" DOUBLE, "QuantityOnHand"  
INTEGER,"CountryOfOriginID" INTEGER, "Image" TEXT );
```

# Manufacturer和Country表

```
CREATE TABLE "main"."Manufacturer"  
("ManufacturerID" INTEGER PRIMARY KEY AUTOINCREMENT NOT NULL,  
"Name" TEXT NOT NULL );
```

```
CREATE TABLE "main"."Country"("CountryID" INTEGER PRIMARY KEY  
AUTOINCREMENT NOT NULL ,"Country" TEXT NOT NULL );
```

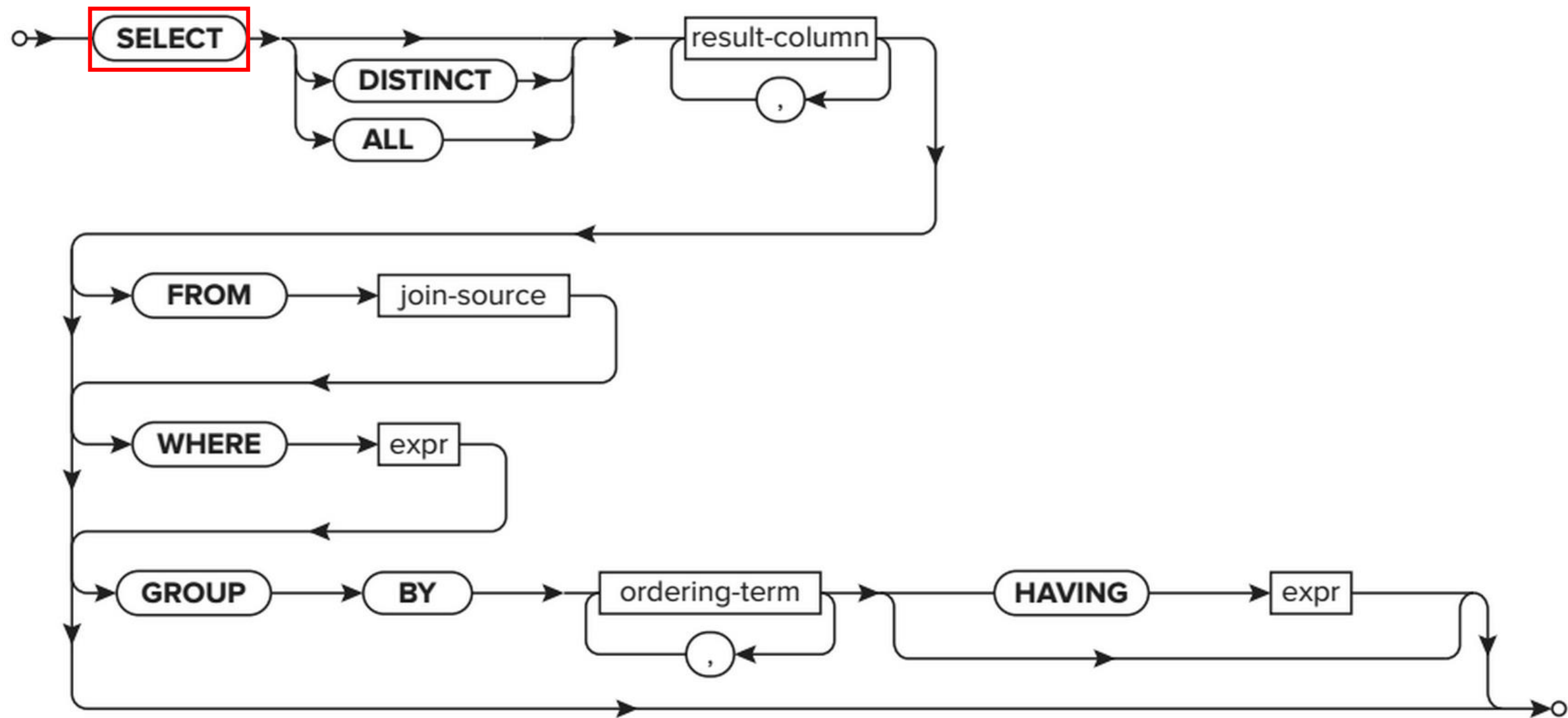
# 填充数据表



# 填充和插入一条记录

```
INSERT INTO "main"."Product"  
("Name","ManufacturerID","Details","Price",  
"QuantityOnHand", "CountryOfOriginID","Image") VALUES  
('Widget A',1,'Details of Widget A',1.29,5,1, 'Canvas_1');
```

# 选择语句语法





# 浏览所有行

select \* from Product

1	Widget A	1	Details of Widget A	1.29	5	1	Canvas_1
2	Widget B	1	Details of Widget B	4.29	15	2	Canvas_2
3	Widget X	1	Details of Widget X	0.29	25	3	Canvas_3
4	Widget Y	1	Details of Widget Y	1.79	5	3	Canvas_4
5	Widget Z	1	Details of Widget Z	6.26	15	4	Canvas_5
6	Widget R	1	Details of Widget R	2.29	45	1	Canvas_6
7	Widget S	1	Details of Widget S	3.29	55	1	Canvas_7
8	Widget T	1	Details of Widget T	4.29	15	2	Canvas_8
9	Widget L	1	Details of Widget L	5.29	50	3	Canvas_9
10	Widget N	1	Details of Widget N	6.29	50	3	Canvas_10
11	Widget E	1	Details of Widget E	17.29	25	4	Canvas_11
12	Part Alpha	2	Details of Part Alpha	1.49	25	1	Canvas_12
13	Part Beta	2	Details of Part Beta	1.89	35	1	Canvas_13
14	Part Gamma	2	Details of Part Gamma	3.46	45	2	Canvas_14
15	Device N	3	Details of Device N	9.29	15	3	Canvas_15
16	Device O	3	Details of Device O	21.29	15	3	Canvas_16
17	Device P	3	Details of Device P	51.29	15	4	Canvas_17
18	Tool A	4	Details of Tool A	14.99	5	1	Canvas_18
19	Tool B	4	Details of Tool B	44.79	5	1	Canvas_19
20	Tool C	4	Details of Tool C	6.59	5	1	Canvas_20
21	Tool D	4	Details of Tool D	8.29	5	1	Canvas_21

## SQLite中的数据规范化是什么？

- a) 删除重复数据
- b) 维护数据
- c) 增加数据库性能
- d) 将数据分解，便于查询



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# 总结

数据库设计需要决定是规范化数据库还是去规范化。

规范化是将数据分解以便于查询的过程。

命令行界面被用于创建、修改和填充SQLite数据库。

**CREATE TABLE**语句被用于创建数据表。

**INSERT SQL**语句被用于填充数据表。

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