Gagnasafnsfræði Verkefni 3

Ragnar Björn Ingvarsson, rbi3

12. september 2024

1

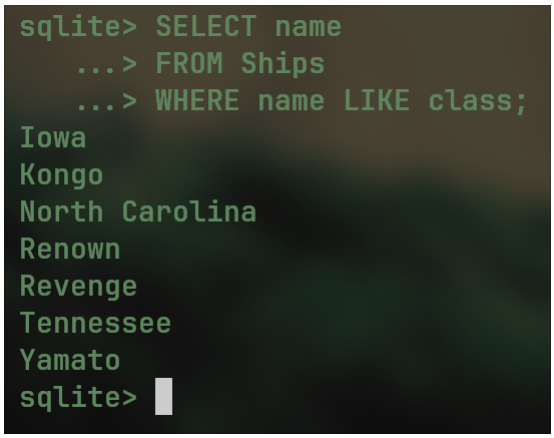
a)
```
SELECT class, country
FROM Classes
WHERE numGuns > 3;
```

```
sqlite> SELECT class, country
   ...> FROM Classes
   ...> WHERE numGuns > 3;
Bismarck|Germany
Iowa|USA
Kongo|Japan
North Carolina|USA
Renown|Gt. Britain
Revenge|Gt. Britain
Tennessee|USA
Yamato|Japan
sqlite>
```

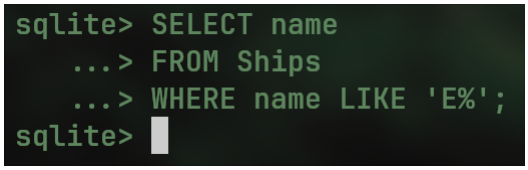
b)
```
.headers on
SELECT name AS nafn
FROM Ships
WHERE launched < 1930;
```

```
sqlite> .headers on
sqlite> SELECT name AS nafn
   ...> FROM Ships
   ...> WHERE launched < 1930;
nafn
California
Haruna
Hiei
Kirishima
Kongo
Ramillies
Renown
Repulse
Resolution
Revenge
Royal Oak
Royal Sovereign
Tennessee
sqlite>
```

c)
```
SELECT name
FROM Ships
WHERE name LIKE class;
```



d)
```
SELECT name
FROM Ships
WHERE name LIKE 'E%';
```



2

Hér sjáum við í fyrsta lagi að þar sem model er einstakt fyrir hverja vöru, þá er model PRIMARY KEY. Við viljum svo tengja alla model dálka í PC, Laptop og Printer við model dálkinn í Product með FOREIGN KEY.

Síðan segjum við að model sé `VARCHAR(50)` og maker sé líka `VARCHAR(50)`, Product.type er `VARCHAR(25)` en Printer.type segjum við bara að sé `VARCHAR(30)`.

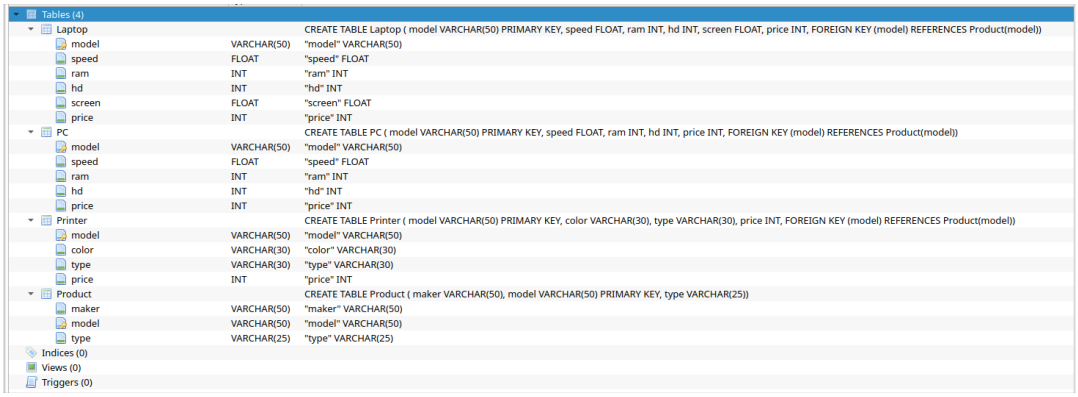
speed er `FLOAT` þar sem það er geymt í GHz sem myndi vera til dæmis 3.54GHz, ram er `INT` þar sem það er geymt í GB og ekki eru seldar tölvur með 1.5GB ram eða eitthvað lengur, hd er `INT` þar sem óþarfi er að mæla með nákvæmni upp á kommutöluna og price er `INT` þar sem við notum íslenskar krónur, og verðinu er ekki skipt í minna en eina krónu.

Síðan viljum við að screen sé `FLOAT` þar sem við notum tommur og skjástærðir eru oft t.d. 23.5" og color er bara `VARCHAR(30)` til að gera ráð fyrir flestum litategundum.

```
sqlite> CREATE TABLE Product (
(x1...> maker VARCHAR(50),
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> type VARCHAR(25));
sqlite> CREATE TABLE PC (
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> speed FLOAT,
(x1...> ram INT,
(x1...> hd INT,
(x1...> price INT,
(x1...> FOREIGN KEY (model) REFERENCES Product(model));
sqlite> CREATE TABLE Laptop (
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> speed FLOAT,
(x1...> ram INT,
(x1...> hd INT,
(x1...> screen FLOAT,
(x1...> price INT,
(x1...> FOREIGN KEY (model) REFERENCES Product(model));
sqlite> CREATE TABLE Printer (
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> color VARCHAR(30),
(x1...> type VARCHAR(30),
(x1...> price INT,
(x1...> FOREIGN KEY (model) REFERENCES Product(model));
```

```
sqlite> CREATE TABLE Product (
(x1...> maker VARCHAR(50),
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> type VARCHAR(25));
sqlite> CREATE TABLE PC (
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> speed FLOAT,
(x1...> ram INT,
(x1...> hd INT,
(x1...> price INT,
(x1...> FOREIGN KEY (model) REFERENCES Product(model));
sqlite> CREATE TABLE Laptop (
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> speed FLOAT,
(x1...> ram INT,
(x1...> hd INT,
(x1...> screen FLOAT,
(x1...> price INT,
(x1...> FOREIGN KEY (model) REFERENCES Product(model));
sqlite> CREATE TABLE Printer (
(x1...> model VARCHAR(50) PRIMARY KEY,
(x1...> color VARCHAR(30),
(x1...> type VARCHAR(30),
(x1...> price INT,
(x1...> FOREIGN KEY (model) REFERENCES Product(model));
sqlite>
```

Og svo lítur þetta svona út í *sqlitebrowser*:



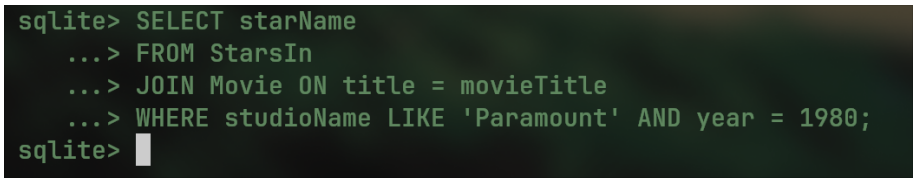
Tables (4)		
Laptop		CREATE TABLE Laptop (model VARCHAR(50) PRIMARY KEY, speed FLOAT, ram INT, hd INT, screen FLOAT, price INT, FOREIGN KEY (model) REFERENCES Product(model))
model	VARCHAR(50)	"model" VARCHAR(50)
speed	FLOAT	"speed" FLOAT
ram	INT	"ram" INT
hd	INT	"hd" INT
screen	FLOAT	"screen" FLOAT
price	INT	"price" INT
PC		CREATE TABLE PC (model VARCHAR(50) PRIMARY KEY, speed FLOAT, ram INT, hd INT, price INT, FOREIGN KEY (model) REFERENCES Product(model))
model	VARCHAR(50)	"model" VARCHAR(50)
speed	FLOAT	"speed" FLOAT
ram	INT	"ram" INT
hd	INT	"hd" INT
price	INT	"price" INT
Printer		CREATE TABLE Printer (model VARCHAR(50) PRIMARY KEY, color VARCHAR(30), type VARCHAR(30), price INT, FOREIGN KEY (model) REFERENCES Product(model))
model	VARCHAR(50)	"model" VARCHAR(50)
color	VARCHAR(30)	"color" VARCHAR(30)
type	VARCHAR(30)	"type" VARCHAR(30)
price	INT	"price" INT
Product		CREATE TABLE Product (maker VARCHAR(50), model VARCHAR(50) PRIMARY KEY, type VARCHAR(25))
maker	VARCHAR(50)	"maker" VARCHAR(50)
model	VARCHAR(50)	"model" VARCHAR(50)
type	VARCHAR(25)	"type" VARCHAR(25)
Indices (0)		
Views (0)		
Triggers (0)		

3

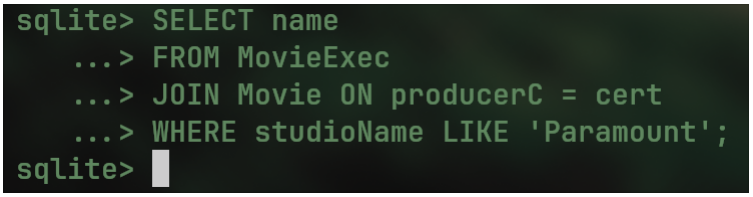
a)
```
SELECT name
FROM MovieStar
JOIN StarsIn ON starName = name
WHERE gender LIKE 'F' AND movieTitle LIKE 'Titanic';
```

```
sqlite> SELECT name
   ...> FROM MovieStar
   ...> JOIN StarsIn ON starName = name
   ...> WHERE gender LIKE 'F' AND movieTitle LIKE 'Titanic';
```

b)
```
SELECT starName
FROM StarsIn
JOIN Movie ON title = movieTitle
WHERE studioName LIKE 'Paramount' AND year = 1980;
```



c)
```
SELECT name
FROM MovieExec
JOIN Movie ON producerC = cert
WHERE studioName LIKE 'Paramount';
```



d)
```
SELECT title
FROM Movie
WHERE length >
(SELECT length FROM Movie WHERE title LIKE 'Star Wars');
```