Извличане на данни

SELECT

SQL - Structured Query Language
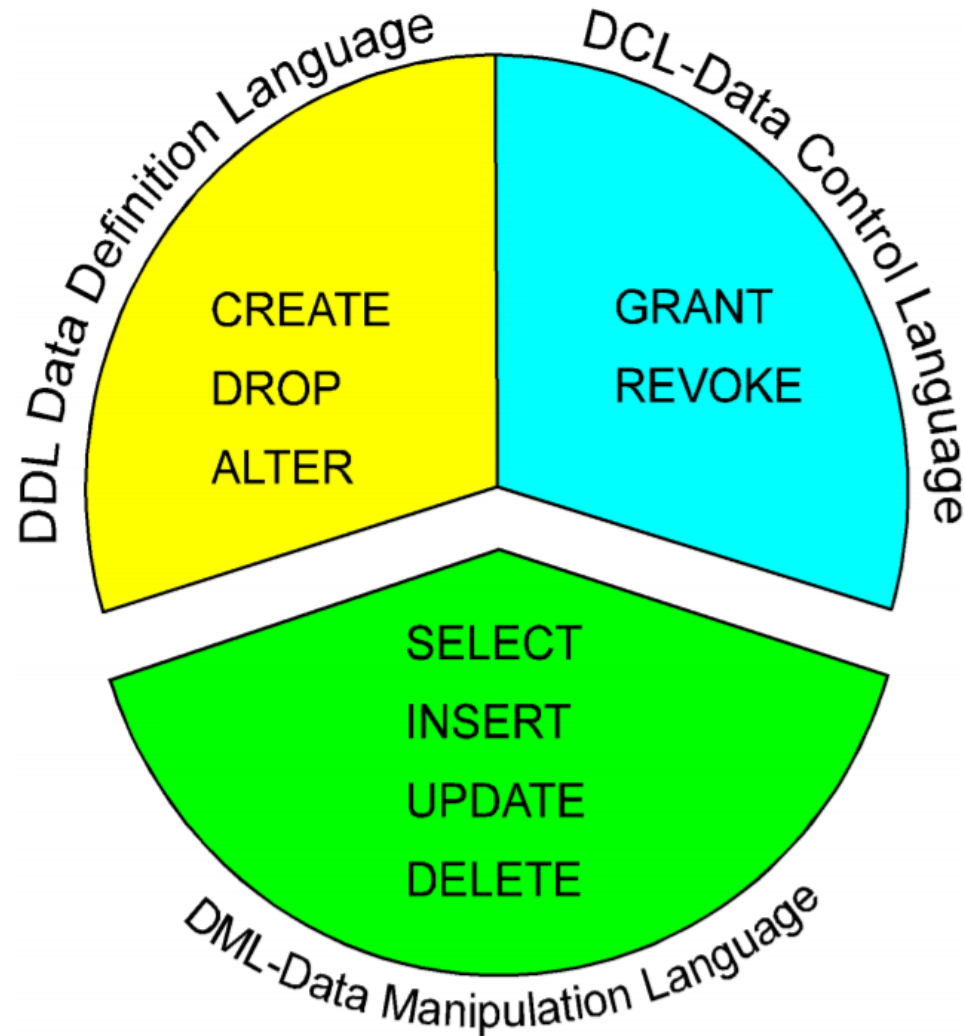
- SQL е език за заявки към релационни БД. Посредством езика могат да се създават, изтриват и променят релационни схеми в СУБД.

- SQL – реализира операциите от релационната алгебра

- SQL се базира на заявки, групирани в следните под-езици:

  - Data Control Language (DCL) — контролира достъпа до обектите в базата от данни.

  - Data Definition Language (DDL) — използва се за създаване, модифициране или изтриване на обект в базата от данни.

  - Data Manipulation Language (DML) — използва се за извличане, обновяване, вмъкване или изтриване на данни.
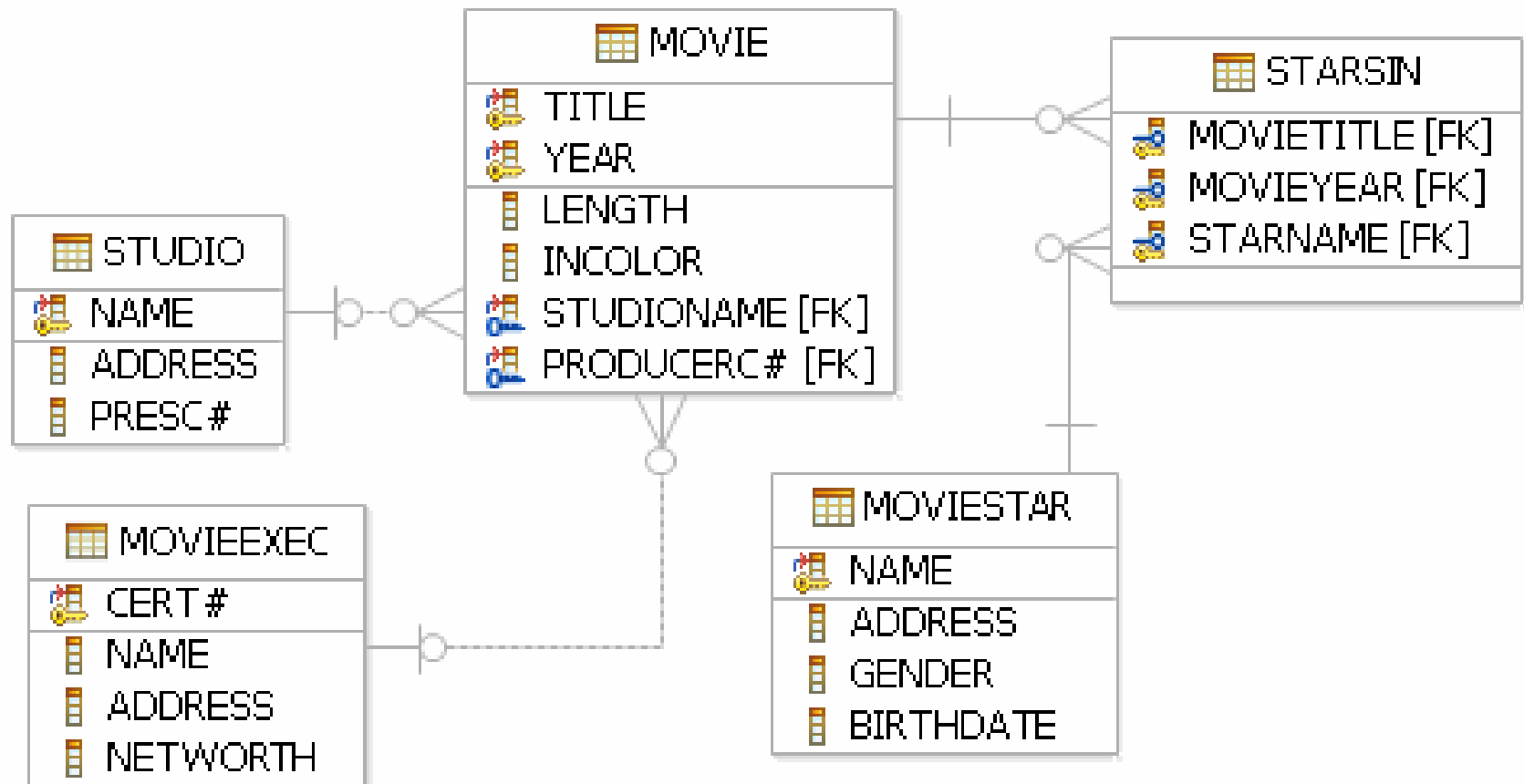
SQL

DDL Data Definition Language

CREATE
DROP
ALTER

DCL-Data Control Language

GRANT
REVOKE

SELECT
INSERT
UPDATE
DELETE

DML-Data Manipulation Language

Схема на базата от данни - Movies

Studio

	NAME		ADDRESS	PRESC#
1	Disney	...	500 S. Buena Vista Street	1
2	USA Entertainm.	...		2
3	Fox	...	10201 Pico Boulevard	3
4	Paramount	...	5555 Melrose Ave	4
5	MGM	...	MGM Boulevard	5

Movie

	TITLE	YEAR	LENGTH	INCOLOR	STUDIONAME		PRODUCERC#
1	Pretty Woman	1990	119	Y	Disney	...	199
2	The Man Who Wasn't There	2001	116	N	USA Entertainm.	...	555
3	Logan's run	1976	NULL	Y	Fox	...	333
4	Star Wars	1977	124	Y	Fox	...	555
5	Empire Strikes Back	1980	111	Y	Fox	...	555
6	Star Trek	1979	132	Y	Paramount	...	222
7	Star Trek: Nemesis	2002	116	Y	Paramount	...	123
8	Terms of Endearment	1983	132	Y	MGM	...	123
9	The Usual Suspects	1995	106	Y	MGM	...	199
10	Gone With the Wind	1938	238	Y	MGM	...	123

MovieExec

CERT#	NAME	ADDRESS	NETWORTH
555	George Lucas	Oak Rd.	200000000
333	Ted Turner	Turner Av.	125000000
222	Stephen Spielberg	123 ET road	100000000
199	Mery Griffin	Riot Rd.	112000000
123	Calvin Coolidge	Fast Lane	20000000

StarsIn

	MOVIETITLE	MOVIEYEAR	STARNAME
1	Star Wars	1977	Alec Baldwin
2	Star Wars	1977	Harrison Ford
3	Star Wars	1977	Kim Basinger
4	Star Wars: Empire Strikes Back	1980	Harrison Ford
5	Terms of Endearment	1983	Jack Nicholson
6	Terms of Endearment	1983	Jane Fonda
7	The Usual Suspects	1995	Jack Nicholson
8	The Usual Suspects	1995	Sandra Bullock

MovieStar

	NAME	ADDRESS	GENDER	BIRTHDATE
1	Jane Fonda	Turner Av.	F	1977-07-07
2	Alec Baldwin	Baldwin Av.	M	1977-07-06
3	Kim Basinger	Baldwin Av.	F	1979-07-05
4	Harrison Ford	Prefect Rd.	M	1955-05-05
5	Debra Winger ...	A way	F	1978-06-05
6	Jack Nicholson ...	X path	M	1949-05-05
7	Sandra Bullock ...	X path	F	1964-07-26

Прости заявки - SELECT

```
SELECT  *
FROM MOVIE;
```

	TITLE	YEAR	LENGTH	INCOLOR	STUDIONAME		PRODUCERC#
1	Pretty Woman	1990	119	Y	Disney	...	199
2	The Man Who Wasn't There	2001	116	N	USA Entertainm.	...	555
3	Logan's run	1976	NULL	Y	Fox	...	333
4	Star Wars	1977	124	Y	Fox	...	555
5	Empire Strikes Back	1980	111	Y	Fox	...	555
6	Star Trek	1979	132	Y	Paramount	...	222
7	Star Trek: Nemesis	2002	116	Y	Paramount	...	123
8	Terms of Endearment	1983	132	Y	MGM	...	123
9	The Usual Suspects	1995	106	Y	MGM	...	199
10	Gone With the Wind	1938	238	Y	MGM	...	123

SELECT Проекция

```
SELECT title, year
FROM MOVIE;
```

	TITLE	YEAR
1	Empire Strikes Back	1980
2	Gone With the Wind	1938
3	Logan's run	1976
4	Pretty Woman	1990
5	Star Trek	1979
6	Star Trek: Nemesis	2002
7	Star Wars	1977
8	Terms of Endearment	1983
9	The Man Who Wasn't There	2001
10	The Usual Suspects	1995

SELECT Проекция

```
SELECT title, year, length, length/60
FROM MOVIE;
```

	TITLE	YEAR	LENGTH	4
1	Pretty Woman	1990	119	1
2	The Man Who Wasn't ...	2001	116	1
3	Logan's run	1976	NULL	NULL
4	Star Wars	1977	124	2
5	Empire Strikes Back	1980	111	1
6	Star Trek	1979	132	2
7	Star Trek: Nemesis	2002	116	1
8	Terms of Endearment	1983	132	2
9	The Usual Suspects	1995	106	1
10	Gone With the Wind	1938	238	3

Псевдоними

```
SELECT title, year, length, length/60 as hours
FROM MOVIE;
```

	TITLE	YEAR	LENGTH	HOURS
1	Pretty Woman	1990	119	1
2	The Man Who Wasn't...	2001	116	1
3	Logan's run	1976	NULL	NULL
4	Star Wars	1977	124	2
5	Empire Strikes Back	1980	111	1
6	Star Trek	1979	132	2
7	Star Trek: Nemesis	2002	116	1
8	Terms of Endearment	1983	132	2
9	The Usual Suspects	1995	106	1
10	Gone With the Wind	1938	238	3

Премахване на дубликати

```
SELECT DISTINCT length/60 as HOURS
FROM MOVIE;
```

	HOURS
1	1
2	2
3	3
4	NULL

WHERE (ограничаване на връщаните редове)

```sql
SELECT *

FROM MOVIE

WHERE length > 120;
```

	TITLE	YEAR	LENGTH	INCOLOR	STUDIONAME		PRODUCERC#
1	Star Wars	1977	124	Y	Fox	...	555
2	Star Trek	1979	132	Y	Paramount	...	222
3	Terms of ...	1983	132	Y	MGM	...	123
4	Gone Wit...	1938	238	Y	MGM	...	123

WHERE - Сравнение с низове

```
SELECT TITLE, YEAR

FROM MOVIE

WHERE STUDIONAME = 'Fox';
```

	TITLE	YEAR
1	Logan's run	1976
2	Star Wars	1977
3	Star Wars: Empire Strikes Back	1980

WHERE - Сравнение с дати

```
SELECT NAME

FROM MOVIESTAR

WHERE BIRTHDATE = '1977-07-07';
```

	NAME
1	Jane Fonda

WHERE - Сравнение с NULL

```
SELECT TITLE, YEAR
FROM MOVIE
WHERE LENGTH IS NULL;
```

	TITLE	YEAR
1	Logan's run	1976

WHERE – Оператор BETWEEN

```
SELECT TITLE, YEAR

FROM MOVIE

WHERE LENGTH BETWEEN 100 AND 120;
```

	TITLE	YEAR
1	Pretty Woman	1990
2	The Man Who Wasn't There	2001
3	Star Wars: Empire Strikes Back	1980
4	Star Trek: Nemesis	2002
5	The Usual Suspects	1995

WHERE – Оператор IN

```
SELECT TITLE, YEAR

FROM MOVIE

WHERE LENGTH IN (111, 124);
```

	TITLE	YEAR
1	Star Wars	1977
2	Star Wars: Empire Strikes Back	1980

WHERE – Оператор LIKE - % и _

```
SELECT TITLE, YEAR

FROM MOVIE

WHERE TITLE LIKE 'St_r%';
```

	TITLE	YEAR
1	Star Trek	1979
2	Star Trek: Nemesis	2002
3	Star Wars	1977
4	Star Wars: Empire Strikes Back	1980

WHERE – Оператори AND, OR, NOT

```
SELECT TITLE, YEAR
FROM MOVIE
WHERE LENGTH NOT IN (111, 124)
AND    TITLE LIKE 'S%'
OR     TITLE LIKE '%Wars';
```

	TITLE	YEAR
1	Star Wars	1977
2	Star Trek	1979
3	Star Trek: Nemesis	2002

ORDER BY

```
SELECT STUDIONAME, TITLE, LENGTH
FROM MOVIE
WHERE LENGTH > 120
ORDER BY STUDIONAME DESC;
```

STUDIONAME	TITLE	LENGTH
Paramount	Star Trek	132
MGM	Terms of Endearment	132
MGM	Gone With the Wind	238
MGM	TITLE	500
Fox	Star Wars	124
Fox	NOV FILM	123