# Meeldetuletus

SELECT näited:

Kõik kirjed tabelist actor:

SELECT \* from actor;

Ainult nimed tabelist actor;

SELECT first\_name, last\_name from actor;

Kõik andmed Boliivia kohta tabelist country;

SELECT \* from country where country = ’Bolivia’;

Kõik andmed tabelist customer, kus eesnimi algab ’CHA’-ga

SELECT \* from customer where first\_name like 'CHA%';

Agregeeritud päringud GROUP BY-ga

select film\_id, count(\*) from inventory group by film\_id;

**Kahe tabeli sidumiseks** kasutatakse foreign keyd ehk võõrvõtit.

SELECT \* FROM world.city ci

join world.country co on ci.countrycode = co.code;

siin countrycode on tabelis City olev võõrvõti, mis on suunatud tabelisse country:

CREATE TABLE city (

...

CONSTRAINT city\_ibfk\_1 FOREIGN KEY (CountryCode) REFERENCES country (Code)

)

Kui tabeleid on rohkem peab ka võõrvõtmeid olema rohkem.

# Ülesanne 1

Vaatame andmebaasi Sakila, vastus andke vabas tekstis nagu oskate.

|  |  |
| --- | --- |
| Kuidas on omavahel seotud tabelid actor ja film? Kuidas me saame teada, millised näiltlejad on mingis filmis mänginud? | Need on seotud läbi tabeli film\_actor. |
| Kuidas on tabel rental seotud teiste tabelitega? | Rental tabel on seotud teiste tabelitega, kuna seal on customer\_id, mis viitab customer tabelile, inventory\_id, mis viitab inventory tabelile ja staff\_id, mis viitab staff tabelile. |
|  |  |

Kordus: selleks, et ühendada kahe tabeli andmed, tuleb tabelid kokku liita JOIN lause abil, seos on tavaliselt üle võõrvõtme, ehk siis seose abil, mis tabelite vahel deklareeritud.

Näiteks on omavahel seotud tabelid category, film\_category ja film.

Kui soovime teada, milline on filmi kategooria teeme päringu

select f.title, c.name from film f

join film\_category fc on f.film\_id = fc.film\_id

join category c on c.category\_id = fc.category\_id

|  |  |
| --- | --- |
| Koostage päring mis seaks näitlejaile vastavusse nende osalusega filmide nimed | SELECT a.first\_name, a.last\_name, f.title  FROM actor a JOIN film\_actor fa ON a.actor\_id = fa.actor\_id  JOIN film f ON fa.film\_id = f.film\_id; |
| Koostage päring vaatamaks, milline kasutaja on milliseid filme vaadanud | SELECT c.first\_name, c.last\_name, f.title  FROM customer c JOIN rental r ON c.customer\_id = r.customer\_id  JOIN inventory i ON r.inventory\_id = i.inventory\_id  JOIN film f ON f.film\_id = i.film\_id; |
| Koostage päring, mis väljastab filmi nime ja filmis kasutatava keele | SELECT f.title, l.name FROM language l  JOIN film f ON f.language\_id = l.language\_id; |
| Tehke kõigist päringutest vaade/view | CREATE VIEW movie\_language AS  SELECT f.title, l.name FROM language l  JOIN film f ON f.language\_id = l.language\_id; CREATE VIEW movie\_language AS  SELECT f.title, l.name FROM language l  JOIN film f ON f.language\_id = l.language\_id; CREATE VIEW movie\_what\_actor AS  SELECT a.first\_name, a.last\_name, f.title  FROM actor a JOIN film\_actor fa ON a.actor\_id = fa.actor\_id  JOIN film f ON fa.film\_id = f.film\_id; |

# Ülesanne 2

|  |  |  |
| --- | --- | --- |
| Küsimus | Vastus Sql kujul | Vastus |
|  | Andmebaas Sakila |  |
| Esitage nimekiri näitlejatest, kelle eesnimi algab ’C’-ga | SELECT first\_name, last\_name FROM actor  WHERE LEFT (first\_name, 1) = 'C'; | |  |  | | --- | --- | | CHRISTIAN | GABLE | | CUBA | OLIVIER | | CAMERON | STREEP | | CARMEN | HUNT | | CHRISTIAN | AKROYD | | CHRISTIAN | NEESON | | CAMERON | WRAY | | CARY | MCCONAUGHEY | | CHARLIZE | DENCH | |
| Esitage nimekiri riikidest, mille nimes on kõrvuti tähed OU | SELECT country FROM country WHERE country REGEXP 'ou'; | South Africa  South Korea |
| Andmebaasis on kaks poodi, mitu filmi ja kui suures summas on kumbki pood välja laenanud? Lisage päringusse ka teenindaja ja poe nimi. | SELECT a.address, s.first\_name, s.last\_name, SUM(p.amount)  AS total  FROM store st JOIN staff s ON st.store\_id = s.store\_id  JOIN rental r ON s.staff\_id = r.staff\_id  JOIN payment p ON r.rental\_id = p.rental\_id  JOIN inventory i ON r.inventory\_id = i.inventory\_id  JOIN address a ON st.address\_id = a.address\_id  GROUP BY a.address, s.first\_name, s.last\_name; | 47 MySakila Drive Mike Hillyer 33524.62  28 MySQL Boulevard Jon Stephens 33881.94 |
| Milline klient on kõige enam filme laenutanud? | SELECT c.first\_name, c.last\_name, COUNT(r.customer\_id) AS count  FROM customer c JOIN rental r ON r.customer\_id = c.customer\_id  GROUP BY c.first\_name, c.last\_name  ORDER BY count DESC; | |  |  |  | | --- | --- | --- | | ELEANOR | HUNT | 46 | | KARL | SEAL | 45 | | CLARA | SHAW | 42 | | MARCIA | DEAN | 42 | | TAMMY | SANDERS | 41 | | SUE | PETERS | 40 | | WESLEY | BULL | 40 | | RHONDA | KENNEDY | 39 | |
| Milline klient on filmide eest kõige enam maksnud? | SELECT c.first\_name, c.last\_name, SUM(p.amount) AS sum  FROM customer c JOIN rental r ON r.customer\_id = c.customer\_id  JOIN payment p ON p.customer\_id = c.customer\_id  GROUP BY c.first\_name, c.last\_name  ORDER BY sum DESC; | |  |  |  | | --- | --- | --- | | KARL | SEAL | 9969.75 | | ELEANOR | HUNT | 9960.84 | | CLARA | SHAW | 8214.36 | | RHONDA | KENNEDY | 7589.79 | | MARION | SNYDER | 7589.79 | | MARCIA | DEAN | 7374.36 | | WESLEY | BULL | 7104.00 | | TOMMY | COLLAZO | 7091.56 | | TIM | CARY | 6848.79 | | JUNE | CARROLL | 6424.31 | | TAMMY | SANDERS | 6379.19 | |
| Mis filmide laenutamine maksab kõige rohkem? | SELECT f.title, AVG(p.amount) AS average FROM film f  JOIN inventory i ON i.film\_id = f.film\_id  JOIN rental r ON r.inventory\_id = i.inventory\_id  JOIN payment p ON p.rental\_id = r.rental\_id  GROUP BY f.title ORDER BY average DESC; | |  |  | | --- | --- | | HUSTLER PARTY | 8.671818 | | TYCOON GATHERING | 8.656667 | | TELEGRAPH VOYAGE | 8.582593 | | VIRTUAL SPOILERS | 8.418571 | | BACKLASH UNDEFEATED | 8.358421 | | PATHS CONTROL | 8.190000 | | CASUALTIES ENCINO | 8.101111 | | MINE TITANS | 8.095263 | |
| Millise kategooria filme on kõige enam laenutatud | SELECT c.name, COUNT(c.name) AS count FROM rental r  JOIN inventory i ON r.inventory\_id = i.inventory\_id  JOIN film f ON f.film\_id = i.film\_id  JOIN film\_category fc ON fc.film\_id = f.film\_id  JOIN category c ON c.category\_id = fc.category\_id  GROUP BY c.name ORDER BY count DESC; | |  |  | | --- | --- | | Sports | 1179 | | Animation | 1166 | | Action | 1112 | | Sci-Fi | 1101 | | Family | 1096 | | Drama | 1060 | | Documentary | 1050 | | Foreign | 1033 | | Games | 969 | | Children | 945 | | Comedy | 941 | | New | 940 | |
|  |  |  |
|  | Andmebaas World |  |
| Tee vaade, mis tagastaks  riigi nime, linna nime, riigi rahvaarvu, linna rahvaarvu, ja protsendi – kui suure osa riigi rahvaarvust moodustab linna rahvavarv | CREATE VIEW city\_percentage AS  SELECT co.Name AS country\_name, ci.Name AS city\_name, co.Population AS country\_population, ci.Population AS city\_population, (ci.Population / co.Population) \* 100  AS percentage FROM country co JOIN city ci ON co.Code = ci.CountryCode  GROUP BY country\_name, ci.Name, co.Population, ci.Population  ORDER BY percentage DESC; | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Singapore | Singapore | 3567000 | 4017733 | 112.6362 | | Gibraltar | Gibraltar | 25000 | 27025 | 108.1000 | | Macao | Macao | 473000 | 437500 | 92.4947 | | Pitcairn | Adamstown | 50 | 42 | 84.0000 | | Cocos (Keeling) Islands | Bantam | 600 | 503 | 83.8333 | | Saint Pierre and Miquelon | Saint-Pierre | 7000 | 5808 | 82.9714 | | Falkland Islands | Stanley | 2000 | 1636 | 81.8000 | | Palau | Koror | 19000 | 12000 | 63.1579 | | Djibouti | Djibouti | 638000 | 383000 | 60.0313 | |
| Kasutades eelmist vaadet, leia linnad, kus linna rahvarv on üle 15%riigi rahvaarvust | SELECT \* FROM city\_percentage WHERE percentage > 15; | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Singapore | Singapore | 3567000 | 4017733 | 112.6362 | | Gibraltar | Gibraltar | 25000 | 27025 | 108.1000 | | Macao | Macao | 473000 | 437500 | 92.4947 | | Pitcairn | Adamstown | 50 | 42 | 84.0000 | |
| Tee vaade, mis tagastab riigi ja keele.  Leia antud vaate abil, millised kolm keelt on kõige kõneldavamad. | CREATE VIEW language\_speakers AS  SELECT co.Name AS country\_name, cl.Language, (co.Population \* cl.Percentage) AS speakers FROM country co  JOIN countrylanguage cl ON cl.CountryCode = co.Code  GROUP BY country\_name, cl.Language, speakers  ORDER BY speakers DESC;  SELECT Language, SUM(speakers) AS total\_speakers FROM language\_speakers  GROUP BY Language  ORDER BY total\_speakers DESC; | |  |  | | --- | --- | | Chinese | 119184353900.0 | | Hindi | 40563307000.0 | | Spanish | 35502946200.0 | | English | 34707786730.0 | | Arabic | 23383923870.0 | | Bengali | 20930471900.0 | | Portuguese | 17759526940.0 | | Russian | 16080756130.0 | | Japanese | 12681410800.0 | | Punjabi | 10402537100.0 | | German | 9213358470.0 | | Javanese | 8357015800.0 | | Telugu | 7906563600.0 | | Marathi | 7501909400.0 | | Korean | 7229137200.0 | | Vietnamese | 7061621800.0 | | French | 6998088040.0 | | Tamil | 6869153600.0 | | Urdu | 6358947000.0 | | Turkish | 6220565720.0 |   a |

# Ülesanne 3

Tee ise uus andmebaas: **Palgad**

Selles olgu kolm tabelit:

**Tööline,** milles on väljad

Id

Isikukood

Eesnimi

Perekonnanimi

**Palk**:

Id

Summa

Väli, mis viitab tabelile Tööline

Väli, mis viitab tabelile Ettevõte

**Ettevõte**:

Id

Kood

Nimi

**Palgamakse**:

Id

Viide tabelile Palk

Summa

Kuupäev

Sisestage töölise tabelisse iseend

Lisage Ettevõtte tabelisse vähemalt kaks kirjet (nt ’Levira’ jne).

Sisestage maksete tabelisse vähemalt kaks makset.

Tehke view, mis annab teada, kui suur summa on välja makstud, tulemuses peavad olema eesnimi, perekonnanimi ja maksete summa.

**Väljade tüübid tabelites määrake ise.**