

Osnove podatkovnih baz

1. domača naloga

1. del - SQL

a)

```
SELECT *  
FROM country WHERE continent = 'Europe'  
;;
```

b)

```
SELECT name  
FROM country  
WHERE population > 10000000 AND lifeexpectancy < 70  
;;
```

c)

```
SELECT name  
FROM city  
WHERE name LIKE 'R%' AND name NOT LIKE '%o%'  
;;
```

d)

```
SELECT name  
FROM country  
WHERE name = (SELECT name  
               FROM city  
               WHERE id = capital  
);;
```

e)

```
SELECT name  
FROM country  
WHERE code IN (  
    SELECT countrycode  
    FROM countrylanguage  
    GROUP BY countrycode  
    HAVING COUNT (language) >= 10 AND COUNT (language) <= 15  
)  
GROUP BY code  
ORDER BY name  
;;
```

f)

```
SELECT name
FROM city
WHERE countrycode IN (
    SELECT code
    FROM country
    WHERE continent = 'Asia'
) AND population > ALL (
    SELECT population
    FROM country
    WHERE region = 'Nordic Countries'
);;
```

g)

```
SELECT COUNT(co.code)
FROM country as co, countrylanguage as cl
WHERE cl.countrycode = co.code AND cl.isofficial AND cl.language != ALL (
    SELECT Language
    FROM countrylanguage
    WHERE countrycode != cl.countrycode
);;
```

KRAJŠAVE ATRIBUTOV RELACIJ ZA REL. RAČUN

COUNTRY (C)

CODE CC

NAME CN

CONTINENT CCO

REGION CR

SURFACEAREA CA

INDEPYEAR CIY

POPULATION CPOP

LIFEEXPECT. CLE

GDP CGDP

GDPOLD CGDPD

LOCALNAME CLLI

GOVERNMENT.FO. CGF

HEADOF STATE CHS

CAPITAL CCAP

CODE2 CC2

CITY (CI)

ID CIDD

NAME CINI

COUNTRYCODE CCC

DISTRICT CID

POPULATION CIPOP

COUNTRYLANGUAGE (L)

COUNTRYCODE LCC

LANGUAGE L

ISOFFICIAL LIO

PERCENTAGE LP

RA:

$$2. a) \pi_{co.name} (\sigma_{ci.population > 16^6 \wedge co.GNP > 10\,000} (ci \bowtie co))$$

$$RR: \{ \langle CH \rangle \mid \langle CGNP, CCAP \rangle \in country \wedge \exists \langle CCID, CICC, CIPOP \rangle (CCAP = CCID \wedge CGNP > 10\,000 \wedge CIPOP > 10\,000\,000) \}$$

$$b) RA: \pi_{co.name}(country) - \pi_{co.name}(\sigma_{isofficial=false}(country \bowtie code=countrycode(countrylanguage)))$$

$$RR: \{ \langle CH \rangle \mid \langle CH, CC \rangle \in country \wedge \neg \exists \langle LCC, L, LID \rangle \in countrylanguage (CC = LCC \wedge LID = false) \}$$

$$c) RA: \pi_{co.name}(country) - \pi_{co.name}(country \bowtie (country \bowtie code=countrycode(\sigma_{isofficial=true \wedge language \neq 'spanish'}(countrylanguage))))$$

$$RR: \{ \langle CH \rangle \mid \langle CH, CC \rangle \in \text{country} \wedge \neg \exists \langle LCC, LIO \rangle \in \text{countrylanguage} \\ (CC = LCC \wedge LIO = \text{true} \wedge L \neq \text{'Spanish'}) \}$$

$$d) RA: \pi_{co, name} (\sigma_{asia, population} (\sigma_{continent = \text{'Europe'}} (\text{country}))) \times$$

$$S_{APOP} (asia, population) (\tau_{min\ population} (\sigma_{continent = \text{'Asia'}} (\text{country})))$$

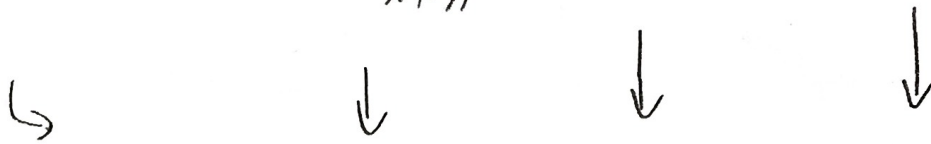
$$RR: \{ \langle CH \rangle \mid \langle CH, CCO, CPOP \rangle \in \text{country} \wedge \exists \langle CUA, CCOA, CPOPA \rangle \in \text{country} \\ (CCO = \text{'Europe'} \wedge CCOA = \text{'Asia'} \wedge CPOP > CPOPA) \}$$

$$e) RA: \pi_{co, name} (\sigma_{co, name = ci, name} (\text{country} \bowtie_{co, capital = ci, id} \text{city}))$$

$$RR: \{ \langle CH \rangle \mid \langle CH, CC \rangle \in \text{country} \wedge \exists \langle CIH, CICC \rangle \in \text{city} \\ (CC = CICC \wedge CH = CIH) \}$$

$$f) \pi_{co, name} (\sigma_{co, population > sp, population} (S_{SPPOP} (sp, population)$$

$$(\tau_{max\ population} (\sigma_{co, population} (\sigma_{co, language = \text{'Spanish'}} (\text{country} \bowtie_{code = \text{countrycode}} \text{countrylanguage}))))))$$



$$\pi_{co, name} (\sigma_{co, population > sp, population} (S_{SPPOP} (sp, population) (\tau_{max\ population} (\sigma_{co, population} \\ (\sigma_{co, language = \text{'Spanish'}} (\text{country} \bowtie_{code = \text{countrycode}} \text{countrylanguage}))))))$$

$$RR: \{ \langle CH \rangle \mid \langle CH, CPOP \rangle \in \text{country} \wedge \forall (\langle CH2, CC2, CPOP2 \rangle \in \text{country} \wedge \\ \exists \langle LCC, L \rangle \in \text{countrylanguage} (CC2 = LCC \wedge L = \text{'Spanish'}) \wedge CPOP2 < CPOP) \}$$

$$(\langle CH2, CC2, CPOP2 \rangle \in \text{country} \wedge CC2 = LCC \wedge L = \text{'Spanish'}) \wedge CPOP2 < CPOP$$