LAB 1 Turdalin Nurassyl ID : 20B030619

1.

1) $\Pi_{ID,\ person\_name}\ (\sigma_{\ company\_name\ =\ "BigBank"}\ (\mathbf{works}))$

SQL : SELECT id,person_name FROM works WHERE company_name = “BigBank”;

2) $\Pi_{ID,\ person\ name\_city}\ (\mathbf{employee} \bowtie_{employee.id=works.id}\ (\sigma_{\ company\_name\ =\ "BigBank"}\ (\mathbf{works})))$

SQL : SELECT ID,Person_namy,city FROM employee AS E,works AS W

WHERE E.id = W.id and W.company_name = “BigBank”;

3) $\Pi_{ID,\ person\_name,\ street,\ city}\ (\sigma\ (_{company\_name\ =\ "BigBank"\ \wedge\ salary\ >\ 10000})\ (\mathbf{works} \bowtie_{employee.id=works.id}\ \mathbf{employee}))$

SQL : SELECT ID,person_name,street,city FROM employee as E, works as W WHERE

E.id = W.id and (W.company_name = “BigBank” and W.salary > 10000)

4) $\Pi_{ID,person\ name}\ (\sigma_{\ employee.city=company.city}\ (\mathbf{employee} \bowtie_{employee.ID=works.ID}\ \mathbf{works} \bowtie_{works.company\_name=company.company\_name}\ \mathbf{company}))$

SQL : SELECT ID,person_name FROM employee as E, works as W, company as C WHERE W.id = E.id and E.city = C.city and W.company_name = C.company_name

2.

1) $\Pi_{ID,\ person\_name}\ (\sigma_{\ company\_name\ \neq,\ "BigBank"}\ (\mathbf{works}))$

SQL : SELECT ID,person_name FROM works WHERE company_name != “BigBank”;

2) $\Pi_{ID,\ person\_name}\ (\sigma_{\ works.salary\ >=\ AVERAGE(works.salary)}\ (\mathbf{works} \bowtie_{works.id\ =\ employee.id}\ \mathbf{employee}))$

SQL : SELECT ID,person_name FROM employee as E, works as W WHERE W.salary >= AVERAGE (W.salary) and W.id = E.id;

3. We take that we don’t have “KBTU PRIDE” department.

#1 And then if we insert such values as (001, Raymbek, KBTU PRIDE, 42500) we will have violation of the foreign key constraint.

#2 If we will try to delete some rows in department table that has dept_name = KBTU PRIDE, we will get violation of the foreign key constraint.

4. primary key = person_name or ID. Not completely clear.