CSC 430 Midterm Section B Answers

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10) CREATE TABLE EMPLOYEE (

```
Emp-ID          INT,
E-name          VARCHAR(20) NOT NULL,
gender          CHAR(1),
DOB             CHAR(10) NOT NULL,
disability      CHAR(1), /* 'Y' for yes or 'N' for no */
health-status   CHAR(1),
PRIMARY KEY     Emp-ID);
```

CREATE TABLE COMPANY (

```
company-name    VARCHAR(20),
tax-ID          INT,
Company Status  CHAR(1),
PRIMARY KEY company-name);
```

CREATE TABLE Lives (

```
Emp-ID      INT,
street      VARCHAR(30),
city        VARCHAR(20),
PRIMARY KEY Emp-ID,
FOREIGN KEY Emp-ID references EMPLOYEE);
```

CREATE TABLE Works (

```
Emp-ID          INT,
company-name    VARCHAR(20),
salary          INT,
PRIMARY KEY (Emp-ID, company-name),
Foreign Key Emp-ID references EMPLOYEE,
FOREIGN KEY company-name references COMPANY);
```

CREATE TABLE Located_in (

```
company-name    VARCHAR(20),
city            VARCHAR(20),
Primary Key     company-name,
Foreign Key     company-name references COMPANY);
```

10,2:

a. $\Pi_{Employee.E\text{-}name}\left(\sigma_{works.company\text{-}name='Ruston\ Bank'} (Employee \bowtie Works) \wedge (Employee.gender='F')\right)$

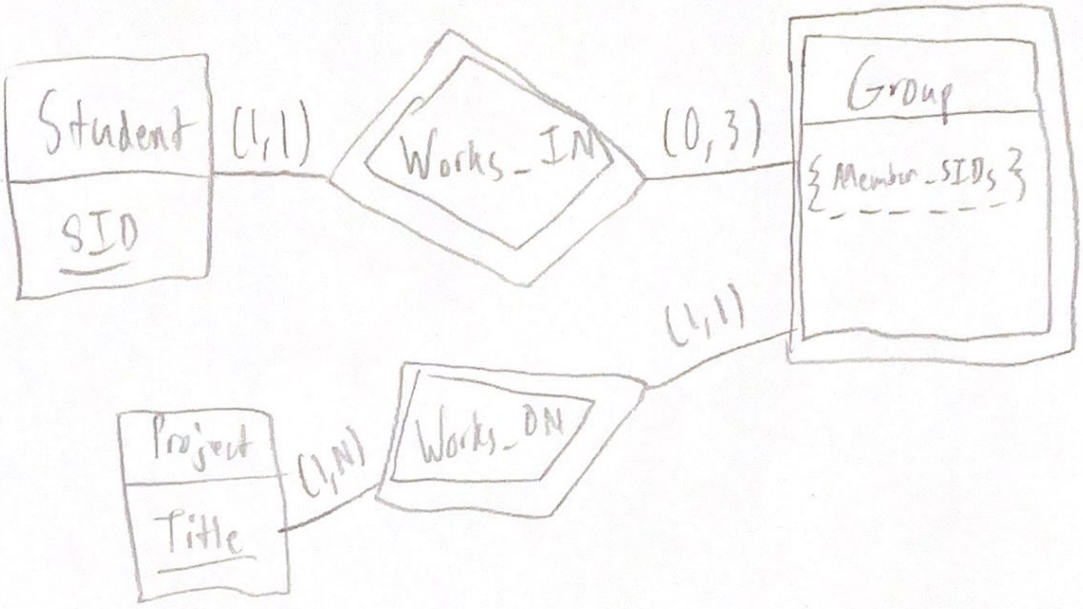
b. $\Pi_{Located_in.company\text{-}name}\left(\sigma_{NewL.company\text{-}name='Ruston\ Bank'} (Located_in \times \rho_{NewL}(Located_in)) \wedge (Located_in.city = NewL)\right)$

c. $\Pi_{EMPLOYEE.E\text{-}name}\left(\sigma_{works.company\text{-}name='Ruston\ Bank'} (Employee \bowtie Works)\right)$

d. $\Pi_{Employee.E\text{-}name, Lives.street, Lives.city}\left(\sigma_{(works.company\text{-}name='Ruston\ Bank' \wedge works.salary > 10{,}500)} ((EMPLOYEE \bowtie Works) \bowtie Lives)\right)$

Q 9)

.1:


Student
SID
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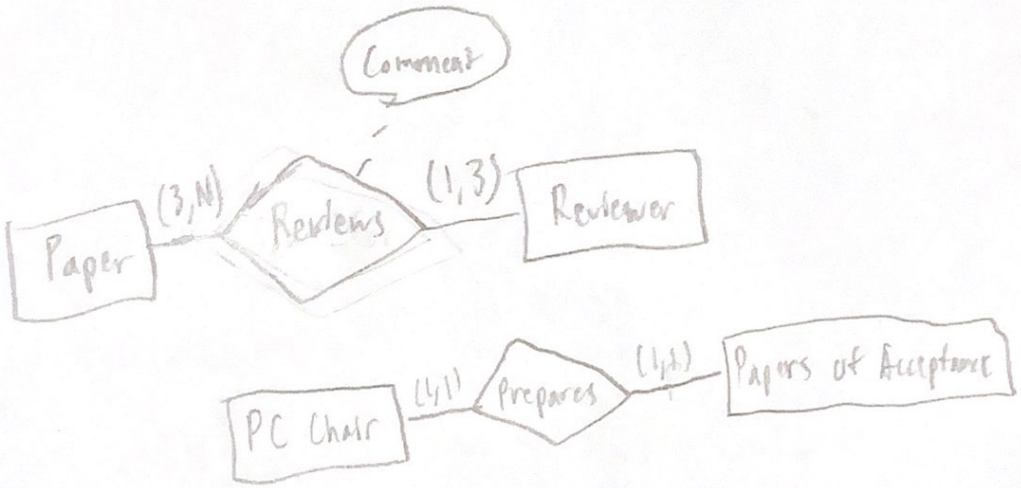
Works_IN
(0,3)
Group
{ Member_SIDs }
(1,1)
Works_ON
(1,N)
Project
Title

.2:


Comment
Paper
(3,N)
Reviews
(1,3)
Reviewer
PC Chair
(1,1)
Prepares
(1,1)
Papers of Acceptance