Homework 2
Raisa Fairuz

8.16

A.

a. DEPARTMENT5 ← σ (Dno = 5) (EMPLOYEE)
b. PROJECT_NAME ← σ (Pname = “ProductX”) (PROJECT)
c. EMPLOYEE_WORKON ← (DEPARTMENT5) ⋈ (ssn = Essn) (WORKS_ON)
d. EMOLYEE_10HOURS ← σ (Hours>10) (EMPLOYEE_WORKON)
e. EMPLOYEE_PROJECT ← (EMOLYEE_10HOURS) ⋈ (PROJECT_NAME)
f. EMPLOYEE_NAME ← π (Fname, Name) (EMPLOYEE_PROJECT)

EMPLOYEE_NAME:

John Smith
Joyce English

D.

a. TOTAL_HOURS ← Pno ℱ SUM Hours (WORKS_ON)
b. PROJECT_HOURS ← (TOTAL_HOURS) ⋈ (Pno = Pnumber) (PROJECT)
c. PROJECT_NAME ← π (Pname, hours) (PROJECT_HOURS)

G.

a. AVERAGE_SALARY ← Dno ℱ AVERAGE Salary (EMPLOYEE)
b. DEPARTMET_DETAILS ← π (Dname, average_salary) ((DEPARTMENT) ⋈ (Dnumber = Dno) (AVERAGE_SALARY))

8.19.

D.

a. ORDER_DETAILS ← (ORDER) X (SHIPMENT)

b. SHIPPED ← σ (Ship_date <= Odate +30) (ORDER_DETAILS)

C. ORDERS ← π (Order#) (SHIPPED)

E.

a. LOCATION ← σ (city = “New Your”) (WAREHOUSE)

b.ORDERS_NEWYORK ← σ (Order#) (SHIPMENT) ⋈ (warehourse# = warehouse#) (LOCATION)

8.18

B.

a. BOOK_NAME ← σ (Title = “The Lost Tribe”) (BOOK)
b. BOOK_DETAILS ← (BOOK_COPIES) ⋈ (Book_id = Book_id) (BOOK_NAME)
c. TOTAL_BOOKS ← ℑ COUNT No_Of_Copies (BOOK_DETAILS)

D.

a. BRANCH_NAME ← σ (Branch_name = “Sharptown”) (LIBRARY_BRANCH)
b. LOAN_DETAILS ← (BOOK_LOANS) ⋈ (Branch_id = Branch_id)(BRANCH_NAME)
c. LOAN_DUE ← σ (due_date = today/current date) (LOAN_DETAILS)
d. BORROWER_DETAILS ← π (Name, Address) ((LOAN_DETAILS) ⋈(Card_no = Card_no) (BORROWER))
e. BOOK_DETAILS ← π (Title) ((LOAN_DETAILS) ⋈(Book_id = Book_id) (BOOK))
f. FINAL ← (BORROWER_DETAILS) X (BOOK_DETAILS)

F.

a. LOAN_COUNT ← Book_id, Card_no ℨ COUNT No_Of_Copies (BOOK_LOANS)
b. MORE_THAN_5 ← σ (No_Of_Copies > 5) (LOAN_COUNT)
c. BOOK_DETAILS ← π (Title,No_Of_Copies) (MORE_THAN_5 ⋈ (Book_id = Book_id) BOOK)
d. BORROWER_DETAILS← π (Name, Address) (MORE_THAN_5 ⋈(Card_no = Card_no) (BORROWER)
e. FINAL ← (BORROWER_DETAILS) X (BOOK_DETAILS)

Part 2:

A.

NO_PLAYGROUND_CITY ← π (name) (CITY) - π (city_ name) (PLAYGROUND)

B.

LEAST_POPULATION ← name ℨ MIN population (CITY)

C.

PARENTS ← ((KIDS) ⋈ (p1_SIN = SIN ∪ p2_SIN = SIN) (EMPLOYEE))
PARENTS_DETAILS ← π (name, SIN) (PARENTS)

D.

PARENTS ← ((KIDS) ⋈ (p1_SIN = SIN ∪ p2_SIN = SIN) (EMPLOYEE))
KIDS_CITY ← π (city_name) (PARENTS)
FINAL ← (π (city_name) (PLAYGROUND)) - (KIDS_CITY)