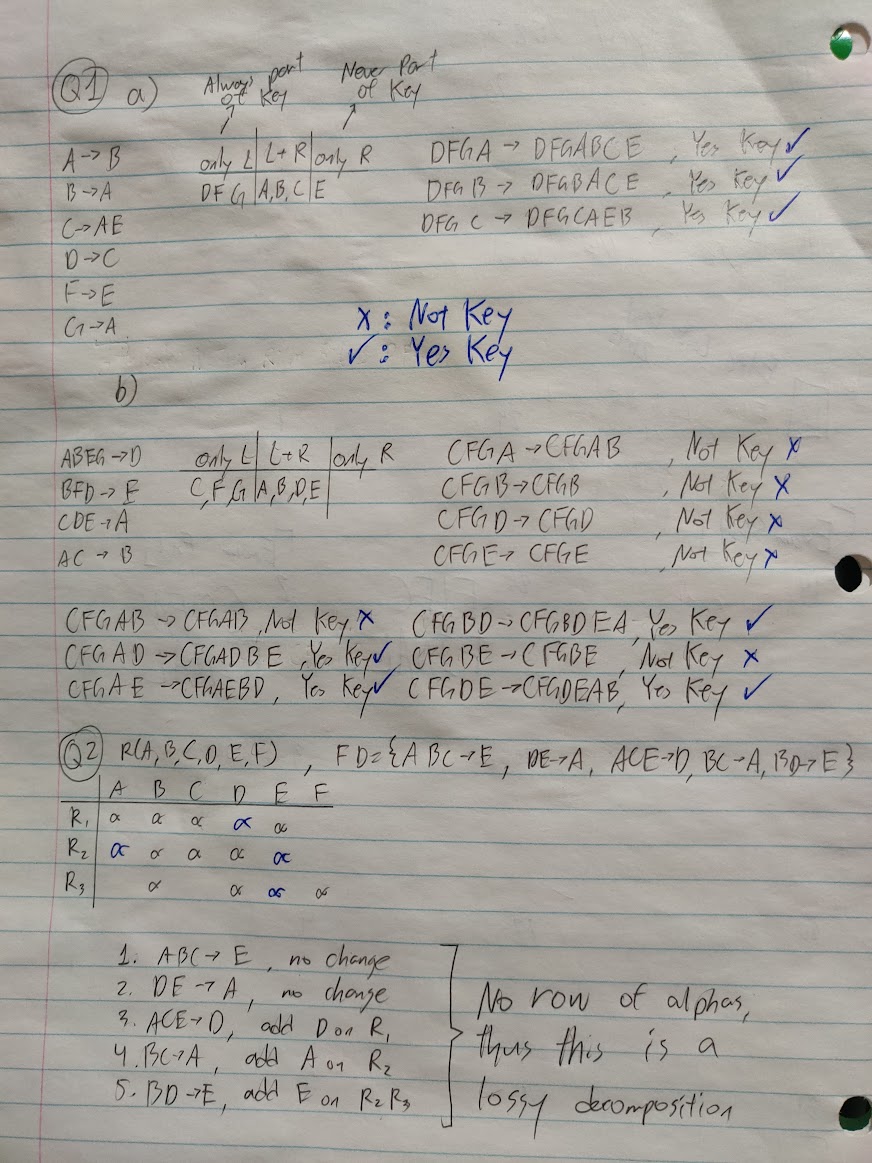
Andre Hei Wang Law

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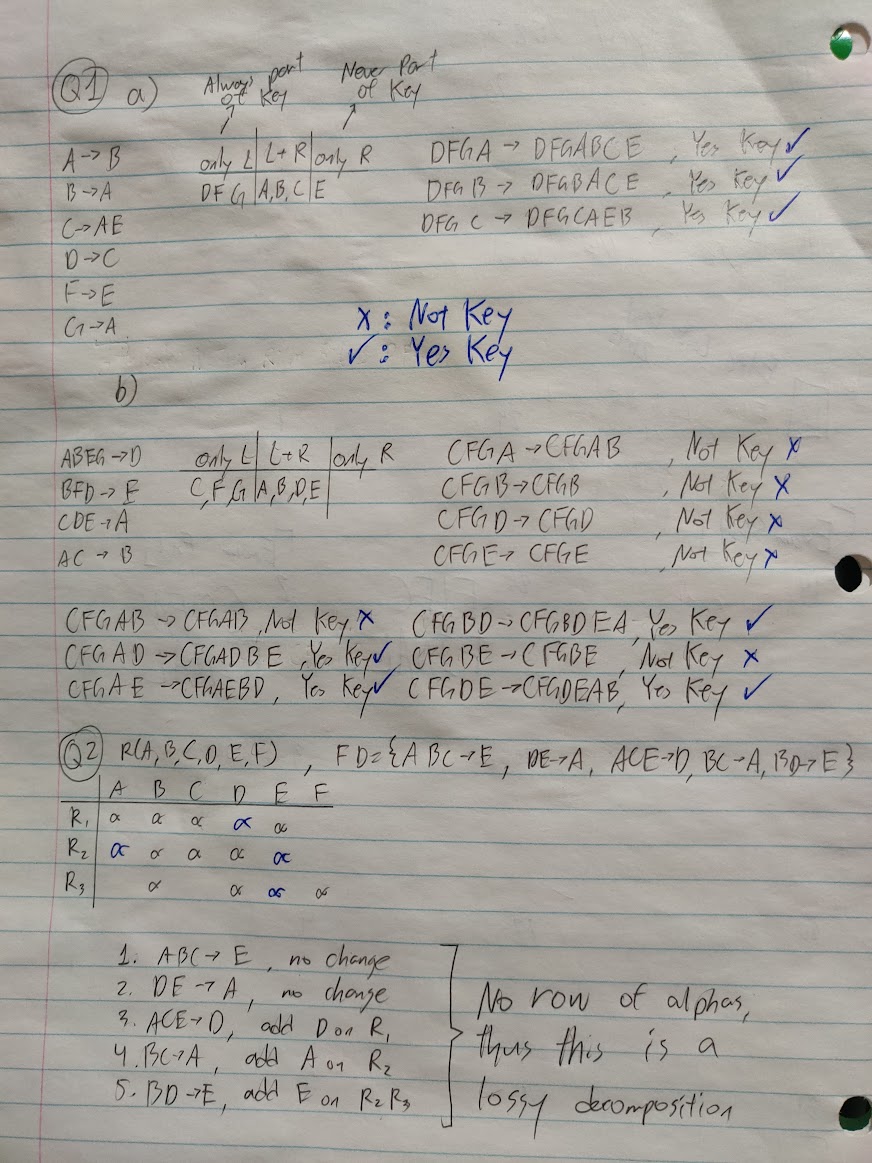
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Comp 353 Assignment 3

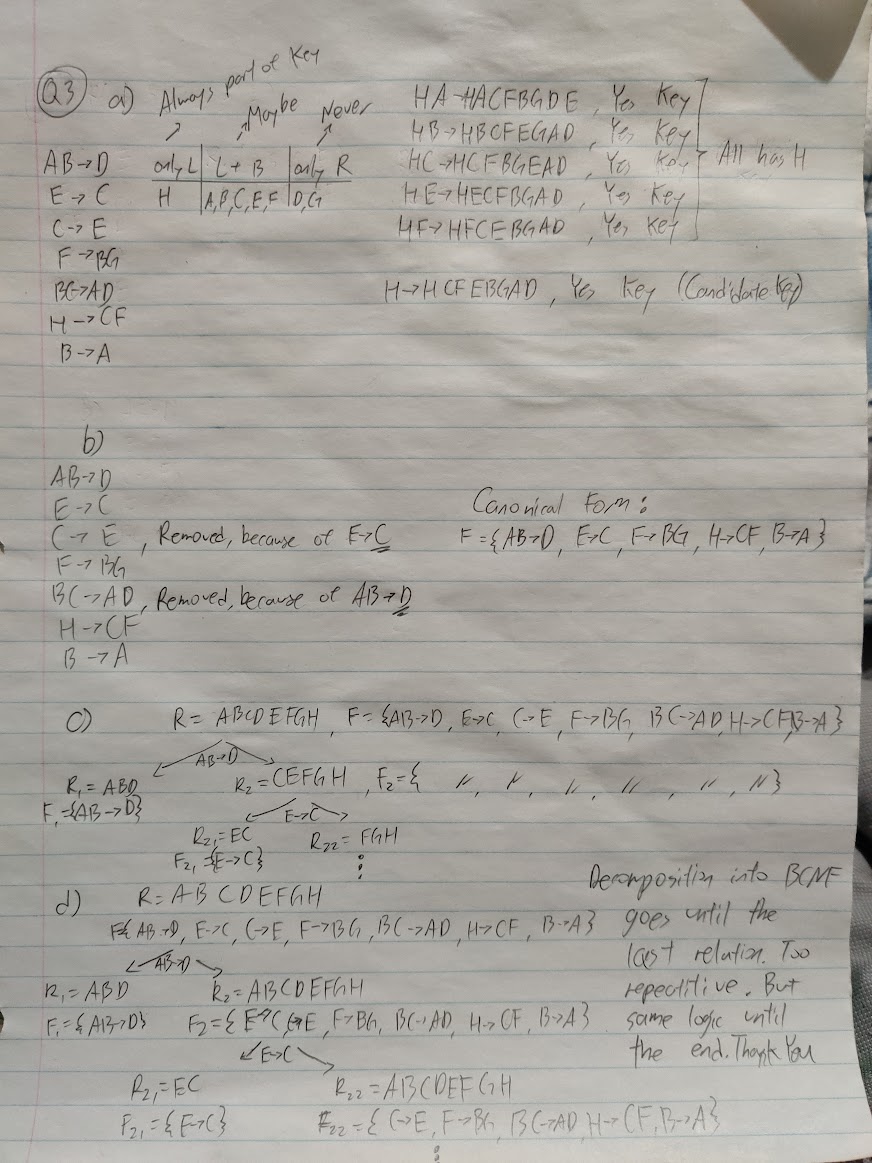
Question 1:



Question 2:



Question 3:



Question 4:

a)

a = π type, gender, locName, name ((Animals ⋈ Admission) ⋈[dateAdmitted >= 20 January 2021 AND dateAdmitted <= 20 February 2021](Adoption ⋈ Adopter))

b)

adopted = π aID (Animals ⋈ Adoption)  
multi\_adopted = π aID ((adopted) ⋈ π aID (adopted))   
b = π aID, type, gender, chipNo (Animals ⋈ multi\_adopted)

c)

adopters = π SIN, name, phone (Adopter)  
adopters\_locations = adopters ⋈ Admission ⋈ HSO\_Location  
c = adopters ⋈[province ≠ province](Adoption ⋈ Admission ⋈ HSO\_Location)

d)

f\_animals = π aID (Animals | gender = "Female")  
adopters\_f\_animals = π SIN ((Adoption ⋈ Animals) ⋈ f\_animals)  
adopters\_only\_f\_animals = adopters\_f\_animals - π SIN (Adoption ⋈ π SIN, aID (Adoption ⋈ (f\_animals - Animals)))  
d = adopters ⋈ adopters\_only\_f\_animals

e)

all\_type = π type (Animals)  
adopters = π SIN, name, phone (Adopter)  
adopters\_with\_all\_type = adopters ÷ π SIN (Adoption ⋈ all\_type)  
e = adopters ⋈ adopters\_with\_all\_type