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HW 1

100

1) Step 1 Identify the entities

- department
- faculty member
- course
- semester
- section
- student

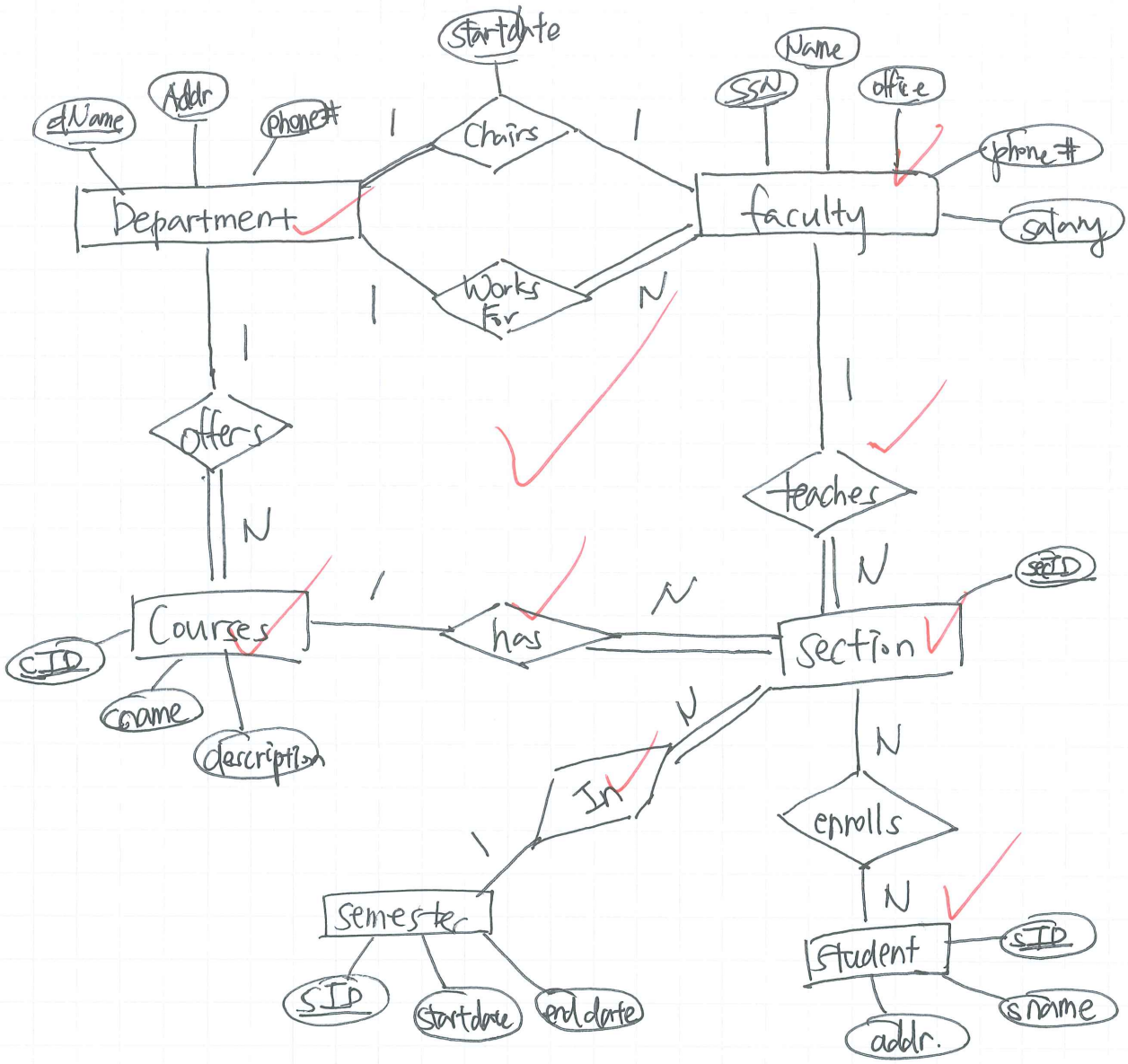
Step 2 attributes/properties

① department
   i) name - key
   ii) address
   iii) phone number
   iv) department chair - relationship
   v) courses - relationship
   vi) faculty - relationship

② faculty
   i) SSN - key
   ii) name
   iii) office
   iv) phone number
   v) salary
   vi) chairs (department)
   vii) works for (department) } relationship.
   viii) teaches (section)

Relationships

	Cardinality ratio	Participation Constraint.
① Chairs (depart : faculty)	1 : 1	total : partial
② Works for (depart : faculty)	1 : N	partial : total
③ Offers (depart : courses)	1 : N	partial : total
④ Teaches (faculty : section)	1 : N	partial : total
⑤ Has (courses : section)	1 : N	partial : total
⑥ In (semester : section)	1 : N	partial : total
⑪ Enrolls (section : student)	N : N	partial : partial



* ___ (underlined) is key attribute

2)

step 1 entities

- student
- department
- course
- grade
- section — 'weak' entity

step 2 properties / attributes

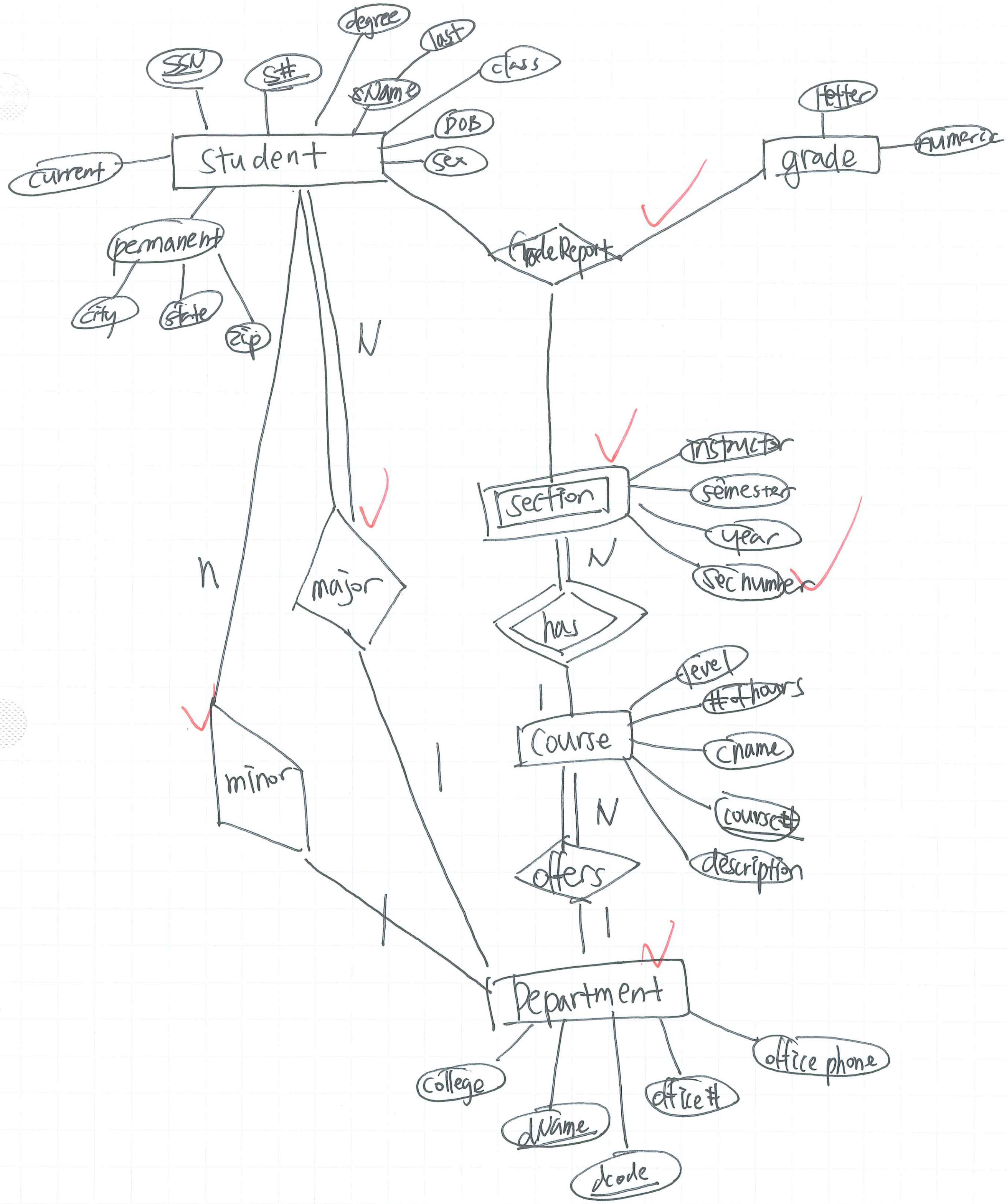
① student

i) name
   a. last
ii) student number - key
iii) SSN - key
iv) current address & phone
v) permanent address & phone
   a. city
   b. state
   c. zip
vi) birthdate (DOB)
vii) sex
viii) class
ix) degree
x) major
xi) minor
xii) grade

} relationship

Relationships

	Cardinality ratio	Participation constraint
① Major (student : depart)	N : 1	total : partial
② Minor (student : depart)	N : 1	total : partial
③ offers (depart : course)	1 : N	partial : total
④ Has (course : section)	1 : N	partial : total ⇒ Identifying relationship.
⑤ Grade Report (student : section : grade)	–	– (not binary relationship)



Student
SSN
S#
degree
last
sName
class
DOB
sex
current
permanent
city
state
zip
GradeReport
grade
letter
numeric
section
instructor
semester
year
Sec number
has
Course
level
# of hours
cname
course#
description
offers
major
minor
Department
college
dName
dcode
office#
office phone
N
n
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