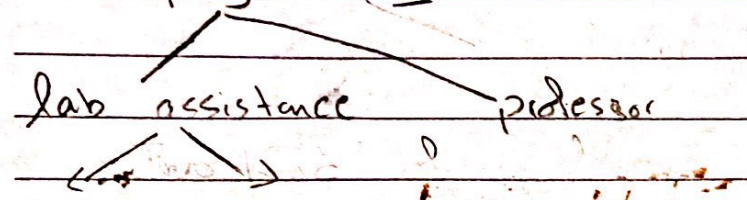
PAGE
DATE

Ziad Sakr Database project

Department Research

. A researcher at college/university is considered an employee or student



*. For each researcher: his/her name, year, DOB, and current position (if any).

*. For each department: name, country

*. For each department name of its school (CS, Eng. ...)

Hint: A school only belongs to one institution, location, budget

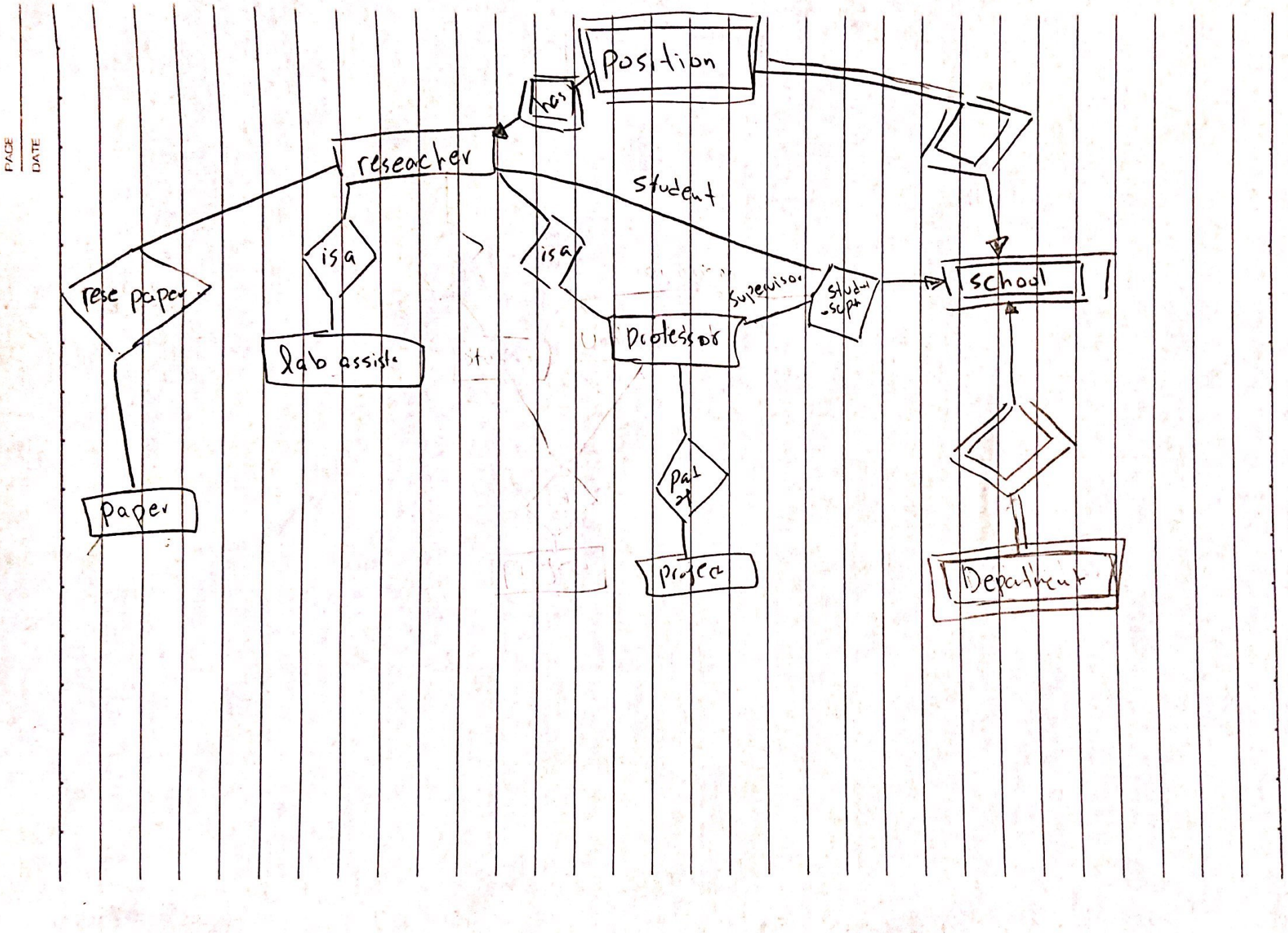
*. As employment: history, including information on all employment (start and end date, position, school name)

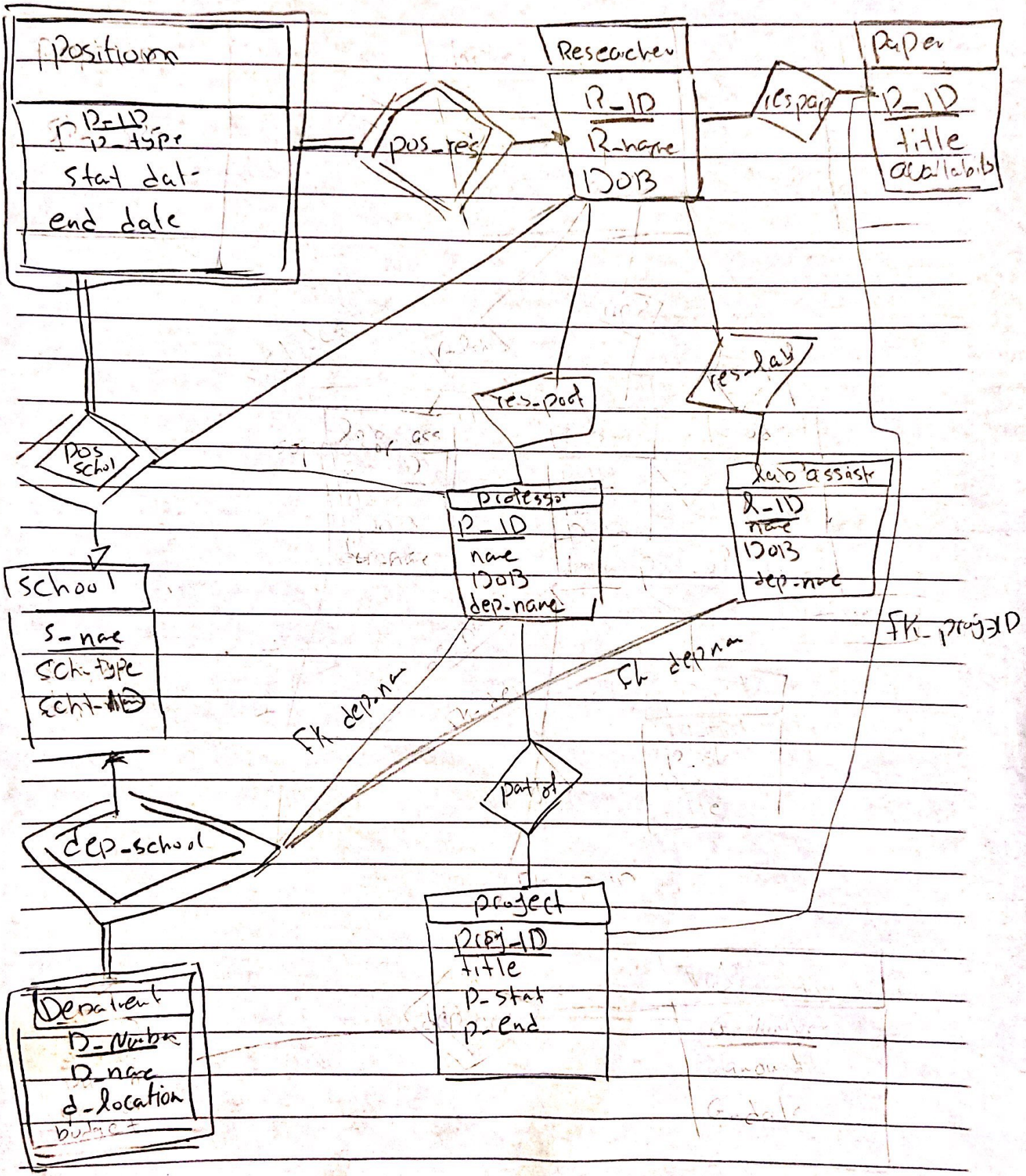
*. A lab Assistat: name, DOB, graduation year, major

*. Research Paper: Title of paper, start and end date of work (if any), employee/student working on pape

*. For each researcher: information on their position (student, profess lab assistance), dep-name, school name, and their research salay

*. For each professor: information on their bachgroud name, DOB, dep-name (if any)





Relation schema

PAGE
DATE

Entity sets (initial):

position (pos_ID, postype, stat date, end date)
researcher (R_ID, R-name, SchlName, salary)
Paper (paper_ID, title, availability)
school (S_name, schl-type, sch_ID)
Departat (dep-ID, dep-nam, d_location)
projeft (proj-ID, title, p. stat, pend, pID)
professor (PR-ID, name, DOB, dep-nae)
lab_assistance (assID, name, DOB, dep-nae, graduate pos)

relashiop sets (initial)

pos_research (P_ID, R_ID) "may to one"
res_paper (R_ID, paper_ID)
r_lab (R_ID, ass-ID)

r_prof (R_ID, Prof_ID)
pos_school (P_ID, S_name)
dep_school (S_name, d_number)
part_of (P_ID, S_ID, proj-ID)
Studet (st_ID, major, grad_year, DOB, st_nard)

merge many-one cases:
position (P_ID, R_ID, S_nae, P_type, stat_date, enddate)
school (S_nae, dSchltype, dep:nae)

PAGE

DATE

Final:

position(p_ID, R_ID, s_nae, p-type, stat-date, end-date)
researched(R_ID, R_nae, r-position, dep-nae, schl_nae, salay)
paper (empl_ID, title, Pape_nae)
school(s_nae, 'S_ID', s_type)
Depatment(d_number, dep_nae, d_location)
project (prog_ID, p_stat, p_end, title, employee_ID)
professor (pr_ID, nae, DOB, dep_nae)

lab_ass(ass_ID, nae, DOB dep_nae, graduate type)

BCNF

The SD From my primay key in professor is pr_ID is my primay and not any other attribute which make it make an ID unique to determine a professor, other than a DOB which it's not unique.

professor (pr_ID, nae, DOB, dep_nae)

relation is in BCNF if and only if each functional depedency pr_ID → nae has a determine pr_ID which is a super key, that is, determines all the other attributes of the relation. We're going to calculate "closure" of determined with respect to the set of of FD. if it Contains all the attributes, then it's super key.

closure of pr_ID

pr_ID^+ = nae, DoB, dep_nae this means that pr_ID is a a super key and the relation is in BCNF.