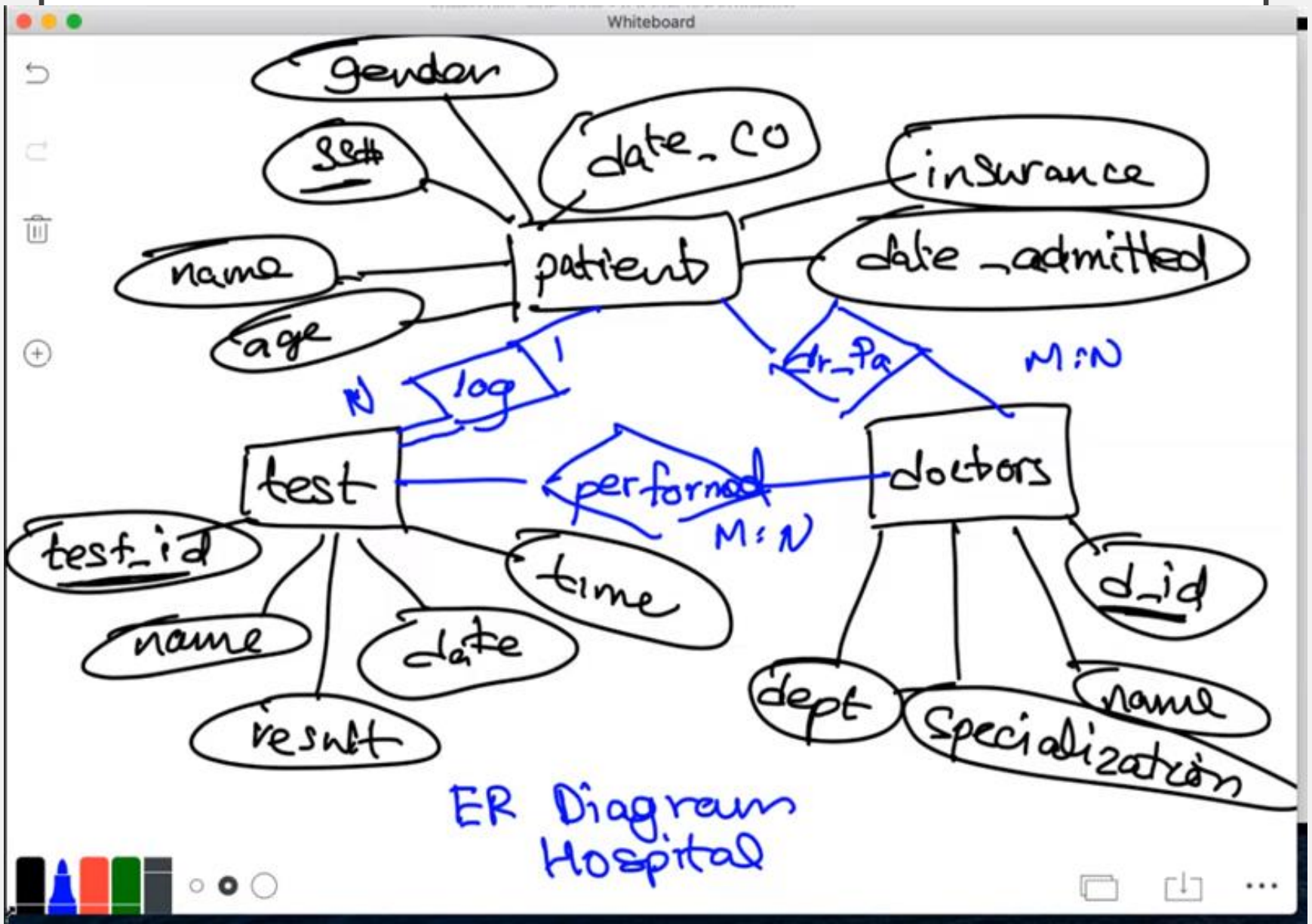
ER DIAGRAM PRACTICE PROBLEMS

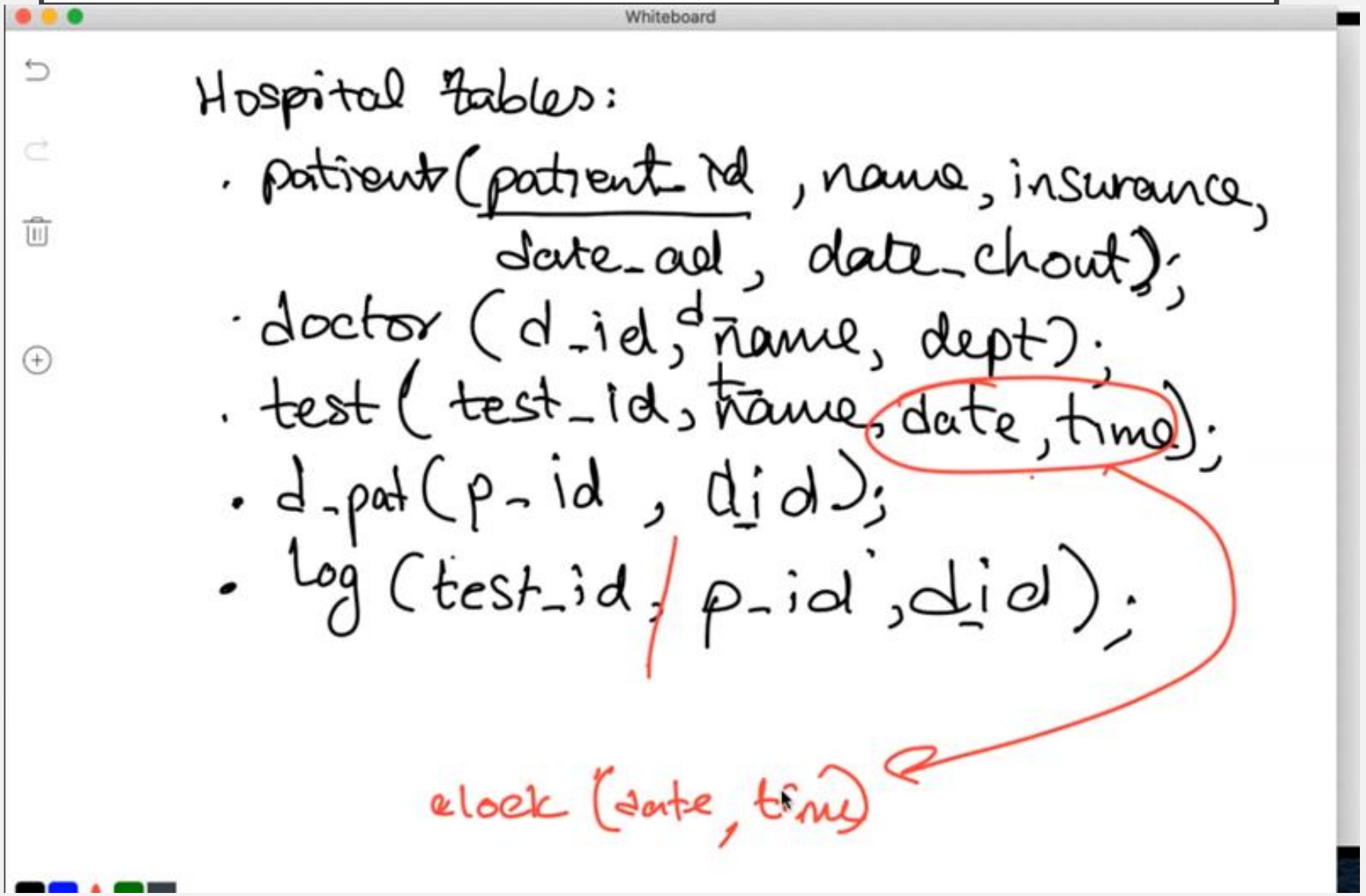
HOSPITAL

Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted.

HOSPITAL


Whiteboard
gender
SSN
date_CO
insurance
name
patient
date_admitted
age
log
1
N
dr_Pa
M:N
test
performed
doctors
M:N
test_id
time
d_id
name
date
dept
name
result
specialization
ER Diagram
Hospital

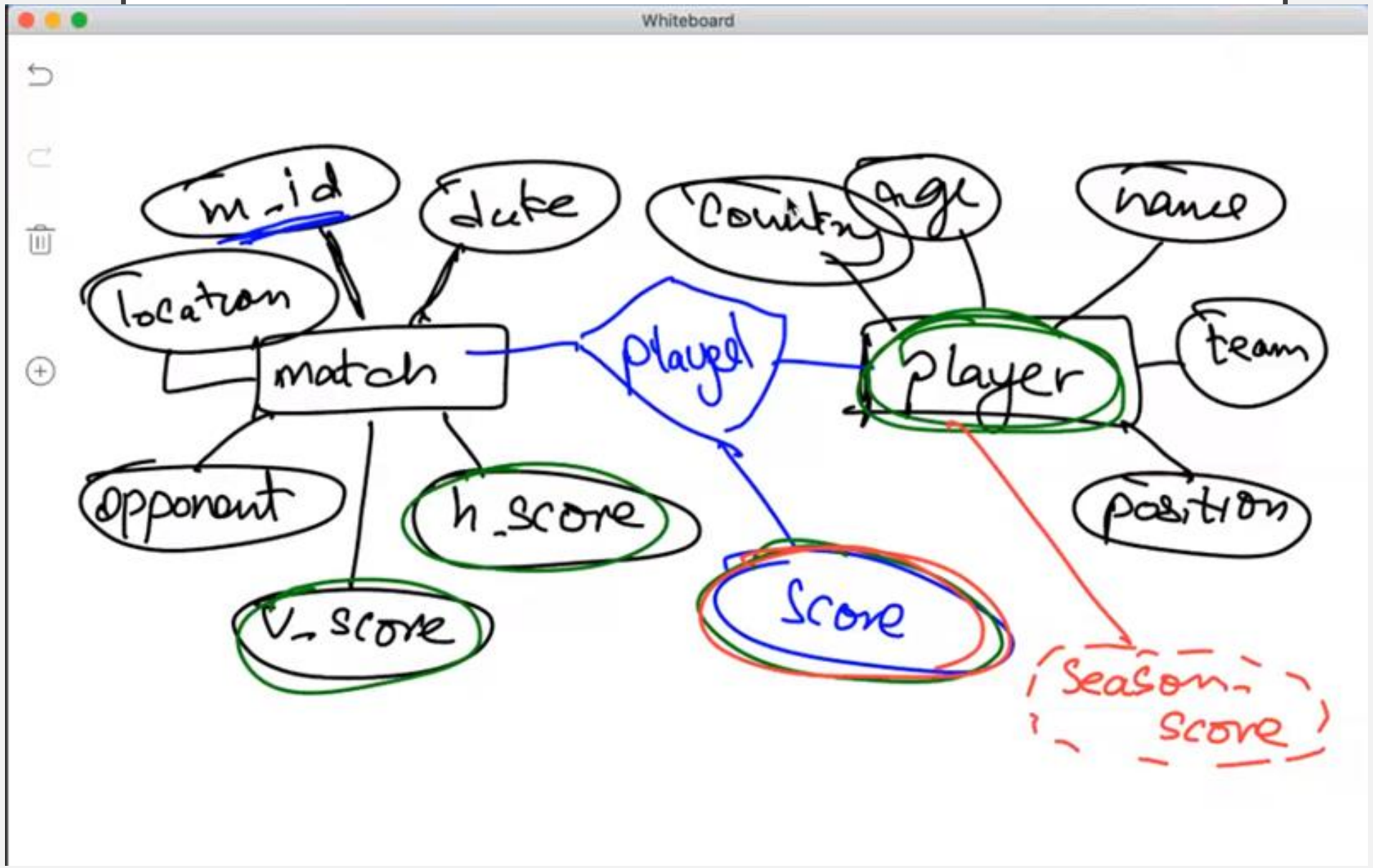
HOSPITAL


Whiteboard
Hospital tables:
. patient(patient_id, name, insurance, date_adl, date_chout);
. doctor (d_id, name, dept);
. test (test_id, name, date, time);
. d_pat(p_id, d_id);
. log (test_id, p_id, d_id);
clock (date, time)

SPORTS TEAMS

Design an E-R diagram for keeping track of the exploits of your favourite sports team. You should store the matches played, the scores in each match, the players in each match and individual player statistics for each match. Summary statistics should be modeled as derived attributes.

SPORTS TEAMS

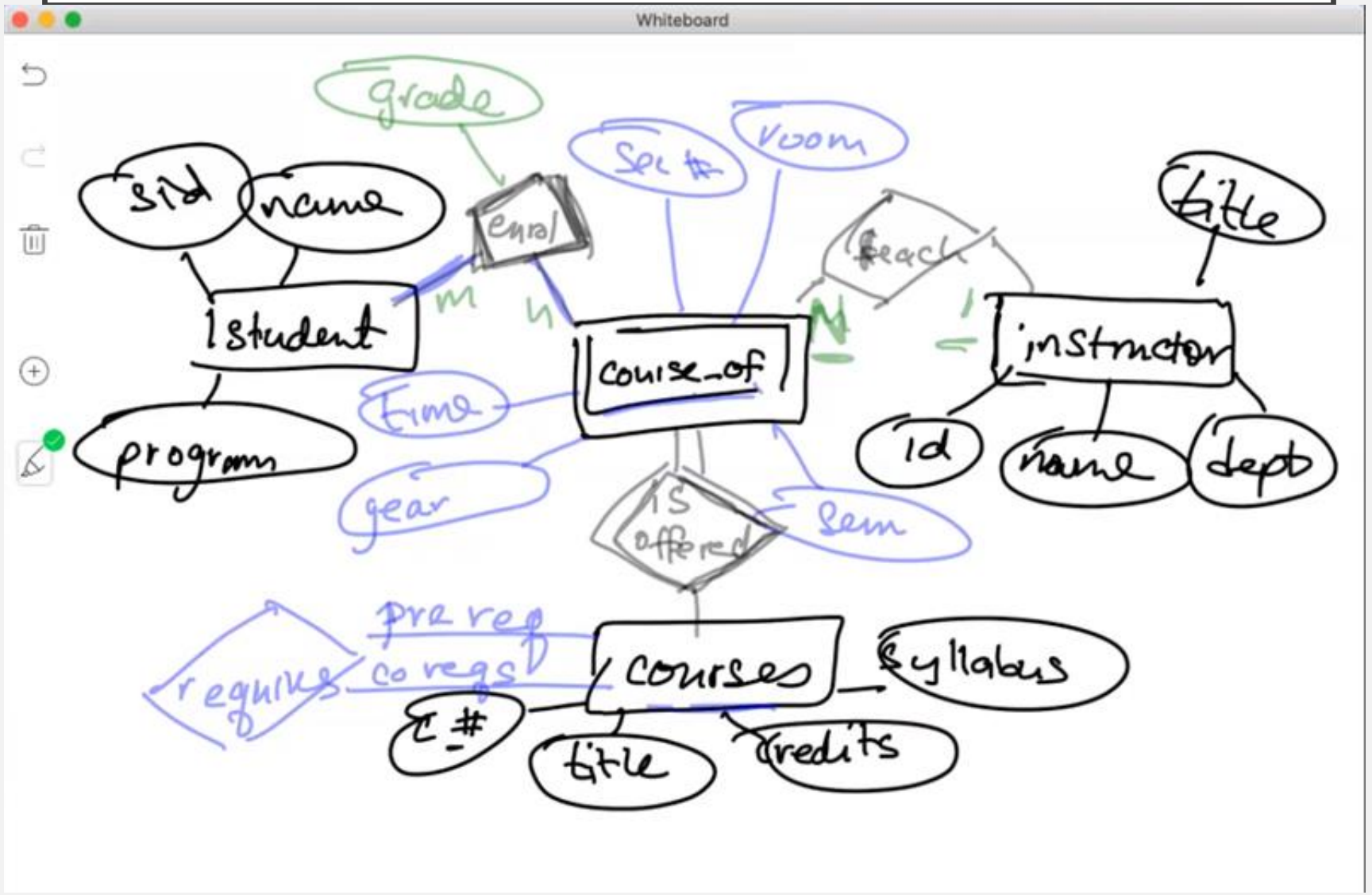


REGISTRAR

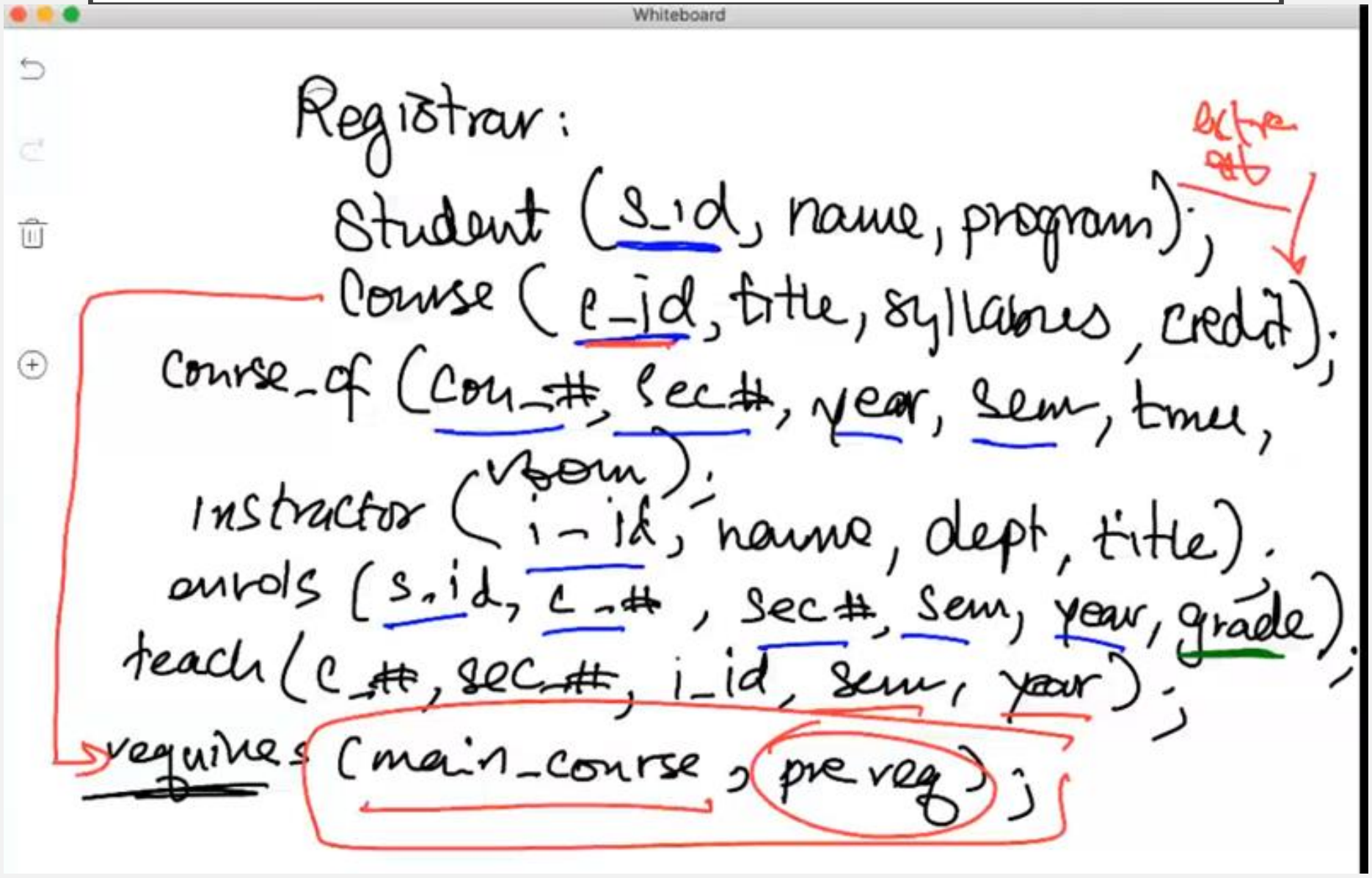
A university registrar's office maintains data about the following entities: (a) courses, including number, title, credits, syllabus, and prerequisites; (b) course offerings, including course number, year, semester, section number, instructor(s), timings, and classroom; (c) students, including student-id, name, and program; and (d) instructors, including identification number, name, department, and title. Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled.

Construct an E-R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints.

REGISTRAR


Whiteboard
grade
sid
name
enrol
sec #
room
student
course_of
time
program
gear
is offered
sem
prereq
coreqs
requires
courses
c_#
title
credits
syllabus
title
instructor
id
name
dept

REGISTRAR


Whiteboard
Registrar:
Student (s_id, name, program);
Course (c_id, title, syllabus, credit);
Course_of (cou_#, sec#, year, sem, time, room);
Instructor (i_id, name, dept, title);
enrols (s_id, c_#, sec#, sem, year, grade);
teach (c_#, sec_#, i_id, sem, year);
requires (main_course, preReq);

EXAM

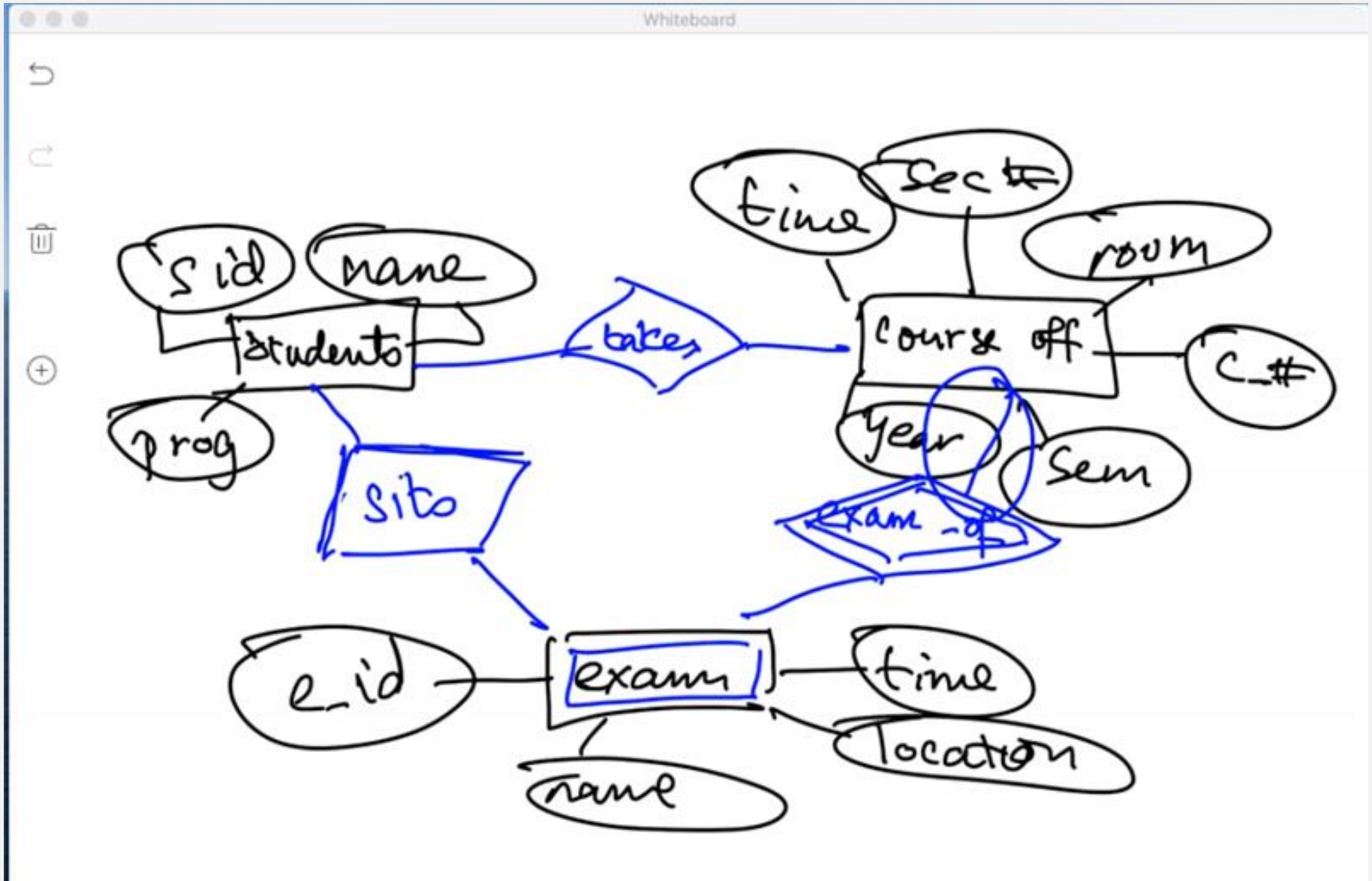
Consider a university database for the scheduling of classrooms for final exams. This database could be modeled as the single entity set *exam*, with attributes *course-name*, *section-number*, *room-number*, and *time*. Alternatively, one or more additional entity sets could be defined, along with relationship sets to replace some of the attributes of the *exam* entity set, as

- *course* with attributes *name*, *department*, and *c-number*
- *section* with attributes *s-number* and *enrollment*, and dependent as a weak entity set on *course*
- *room* with attributes *r-number*, *capacity*, and *building*

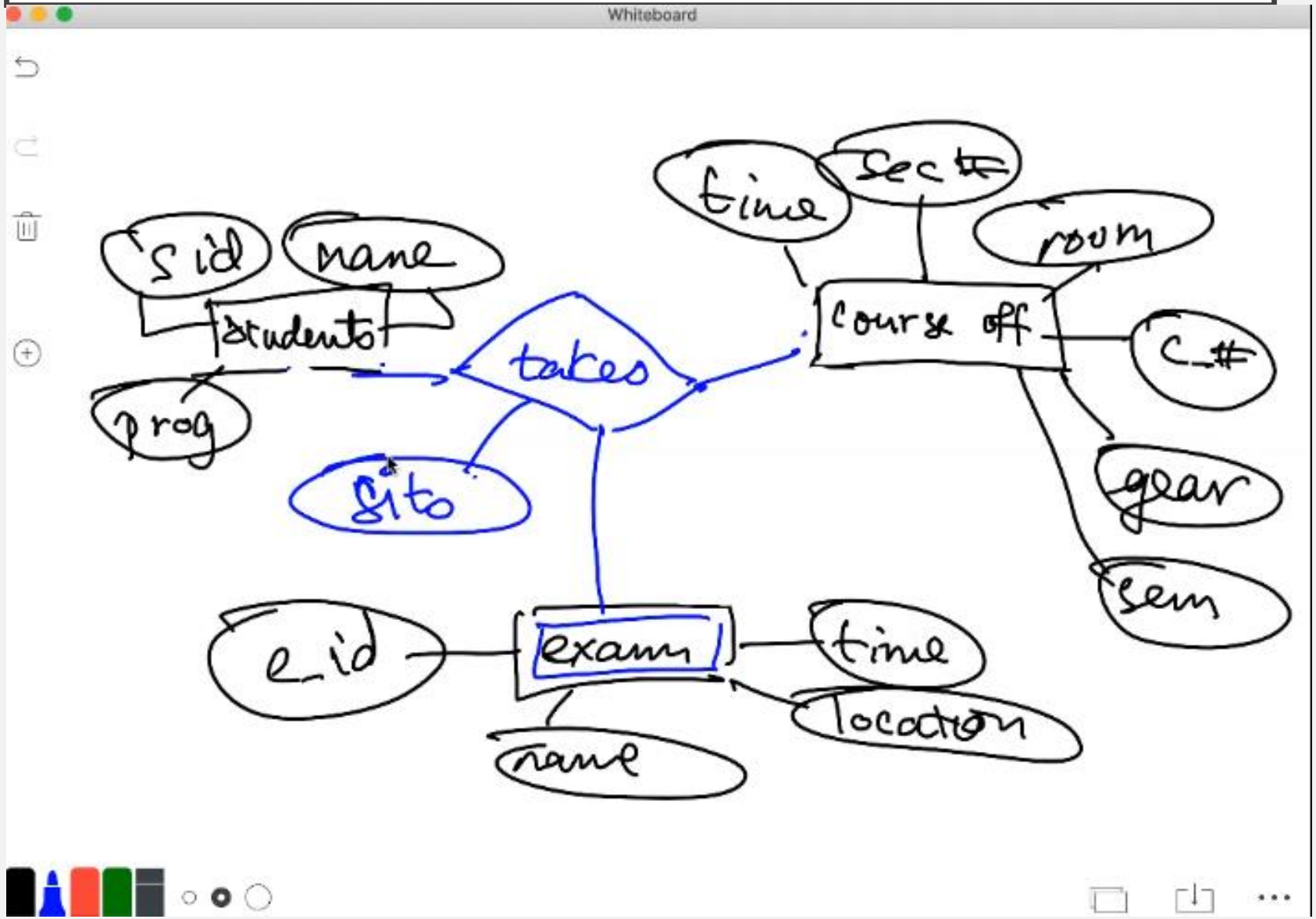
a. Show an E-R diagram illustrating the use of all three additional entity sets listed.

b. Explain what application characteristics would influence a decision to include or not to include each of the additional entity sets.

EXAM


Whiteboard
time
Sect
room
S id
name
takes
Course off
C_#
Students
prog
year
Sem
Sito
exam_of
e_id
exam
time
location
name

EXAM


Whiteboard
time
Sect
room
S id
name
Student
takes
Course off
C_#
prog
Sito
gear
sem
e_id
exam
time
location
name