

## Relational Schema:

Users (username, Id, password, role, email)

UserSearchBachelorProject(id, pid)

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UserSearchBachelorProject.id REFERENCES Users

UserSearchBachelorProject.pid REFERENCES BachelorProject

UserViewBachelorProject(id, pid)

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UserViewBachelorProject.id REFERENCES Users

UserViewBachelorProject.pid REFERENCES BachelorProject

Hardware (n\_of\_needed\_comp, n\_of\_used\_comp, meeting\_point, n\_available\_comp, code, name, type)

ModifyAndSee (code, id)

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ModifyAndSee.id REFERENCES Users

ModifyAndSee.code REFERENCES Hardware

Student(sid, thesis\_grade, defense\_grade, faculty, gpa, birthdate, age, fname, lname, total\_bachelor\_grade,

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major, semester, cumulative\_progress\_grade)

Where Student.age = current\_date – Student.birthdate

Where Student.total\_bachelor\_grade = Student.thesis\_grade + Student.defense\_grade +

Student.cumulative\_progress\_grade

Student.sid REFERENCES Users

StudentPhones(id, phoneNo)

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StudentPhones.id REFERENCES Student

StudentAssigned(SID, PID)

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StudentAssigned.SID REFERENCES Student

StudentAssigned.PID REFERENCES BachelorProject

Student-Lecturer-Industrial(sid, lid, pid)

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Student-Lecturer-Industrial.sid REFERENCES Student

Student-Lecturer-Industrial.lid REFERENCES Lecturer

Student-Lecturer-Industrial.pid REFERENCES Industrial

StudentBooksMeeting(sid, mid)

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StudentBooksMeeting.sid REFERENCES Student

StudentBooksMeeting.mid REFERENCES Meeting

StudentEnrolledMajor(sid, major\_code, faculty\_code)

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StudentEnrolledMajor.sid REFERNECES Student

StudentEnrolledMajor.(major\_code, faculty\_code) REFERNECES Major

Student-AbroadProject-ExternalSupervisor(sid, pid, id)

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Student-AbroadProject-ExternalSupervisor.sid REFERENCES Student

Student-AbroadProject-ExternalSupervisor.pid REFERENCES AbroadProject

Student-AbroadProject-ExternalSupervisor.id REFERENCES ExternalSupervisor

StudentMakePreference(sid, pid , pref\_num)

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StudentMakePreference.sid REFERENCES Student

StudentMakePreference.pid REFERENCES BachelorProject

StudentSubmitThesis(sid, tid)

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StudentSubmitThesis.sid REFERENCES Student

StudentSubmitThesis.(tid, sid) REFERENCES Thesis

Company (id, represantative\_name, location,, name)

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Company.id REFERNCES Users

CompanyRegisterEmployee(cid, staff\_id)

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CompanyRegisterEmployee.cid REFERENCES Company

CompanyRegisterEmployee.(cid, staff\_id) REFERENCES Employee

Company-Employee-Industrial(cid, staff\_id, pid)

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Company-Employee-Industrial.cid REFERENCES Company

Company-Employee-Industrial.(cid, staff\_id) REFERENCES Empolyee

Company-Employee-Industrial.pid REFERENCES Industrial

CompanyCreateIndustrial(cid, pid)

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CompanyCreateIndustrial.cid REFERENCES Company

CompanyCreateIndustrial.pid REFERENCES Industrial

Admin (Id)

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Admin.id REFERENCES Users

Admin-Company(cid, uid)

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Admin-Company.cid REFERENCES Company

Admin-Company.uid REFERENCES Admin

Lecturer (id, faculty, schedule)

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Lecturer.id REFERENCES Users

LecturerPhone (lecturer, phone)

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LecturerPhone.lecturer REFERENCES Lecturer

LecturerIntrest(lecturer, intrest)

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LecturerIntrest.lecturer REFERENCES Lecturer

LecturerSuperviseStudent(sid, lid)

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LecturerSuperviseStudent.sid REFERENCES Student

LecturerSuperviseStudent.lid REFERENCES Lecturer

Lecturer-ExternalExaminer-Defense(lid, eid, did, sid, lecturer\_grade, external\_grade)

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Lecturer-ExternalExaminer-Defense.lid REFERENCES Lecturer

Lecturer-ExternalExaminer-Defense.eid REFERENCES ExternalExaminer

Lecturer-ExternalExaminer-Defense.(did,sid) REFERENCES Defense

LecturerIndustrial(lid, pid, sid)

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LecturerIndustrial.sid REFERENCES Student

LecturerIndustrial.lid REFERENCES Lecturer

LecturerIndustrial.pid REFERENCES Industrial

LecturerMakesMeeting(lid, mid)

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LecturerMakesMeeting.mid REFERENCES Meeting

LecturerMakesMeeting.lid REFERENCES Lecturer

TeachingAssistant (id , faculty, schedule )

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TeachingAssistant.id REFERENCES Users

TAPhone(TA, phone)

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TAPhone.TA REFERENCES TeachingAssistant

ExternalExaminer( eid , schedule )

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ExternalExaminer.eid REFERENCES Users

ExaminerPhone ( examiner, phone )

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ExaminerPhone.examiner REFERENCES ExternalExaminer

Externalexaminer-Coordinator-Localproject(eid, pid, cid)

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Externalexaminer-Coordinator-Localproject.eid REFERENCES externalexaminer

Externalexaminer-Coordinator-Localproject.eid REFERENCES coordinator

Externalexaminer-Coordinator-Localproject.pid REFERENCES localProject

AddToSystem(eid,cid)

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AddToSystem.eid REFERENCES externalexaminer

AddToSystem.cid REFERENCES coordinator

Coordinator ( id, faculty)

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Coordinator.id REFERENCES Users

CoordinatorPhone(coordinator, phone)

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CoordinatorPhone.coordinator REFERENCES Coordinator

ExternalSupervisor (eid ,fields\_of\_intrest, office, country\_of\_residence )

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ExternalSupervisor.eid REFERENCES Users

ExternalSupervisorPhone(ExternalID, phone)

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ExternalSupervisorPhone.ExternalID REFERENCES Users

ExternalSupervisorPutInfoAbroadProject(eid, pid)

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ExternalSupervisorPutInfoAbroadProject.eid REFERENCES ExternalSupervisor

ExternalSupervisorPutInfoAbroadProject.pid REFERENCES AbroadProject

Faculty (faculty\_code, name, dean)

Major (major\_code, faculty\_code, name, dean)

Major.faculty\_code REFERENCES Faculty

MajorhaveBachelorProject(pid, m\_code, f\_code)

MajorhaveBachelorProject.pid REFERENCES BachelorProject

MajorhaveBachelorProject.m\_code REFERENCES Major

MajorhaveBachelorProject.f\_code REFERENCES Major

Cluster (cluster\_id, name, description)

BachelorProject(Project\_id, name, description)

ClusterHaveBP(pid, cid)

ClusterHaveBP.pid REFERENCES BachelorProject

ClusterHaveBP.cid REFERENCES Cluster

SubmittedMaterialsProj(Project\_id, Materials)

SubmittedMaterialsProj.Project\_id REFERENCES BachelorProject

BachelorResources(Project\_id, Resources)

BachelorResources.Project\_id REFERENCES BachelorProject

AbroadProject(pid, inst\_name, country\_name)

AbroadProject.pid REFERENCES BachelorProject

LocalProject(pid)

LocalProject.pid REFERENCES BachelorProject

Industrial(p\_id)

Industrial.p\_id REFERENCES LocalProject

Academic(p\_id)

Academic.p\_id REFERENCES LocalProject

Thesis (sid, thesis\_id, deadline, title, pdf\_document, grade, employeeGrade, companyGrade, cid, staff\_id,

eid, lid, lecturerGrade, ExternalGrade)

Thesis.sid REFERENCES Student  
 Thesis.cid REFERENCES Company  
 Thesis.(cid, staff\_id) REFERENCES Employee  
 Thesis.eid REFERENCES ExternalExaminer  
 Thesis.lid REFERENCES Lecturer

Where: Thesis.grade = Thesis.employeeGrade + Thesis.companyGrade  
 Where: Thesis.grade = Thesis.LecturerGrade +Thesis. ExternalGrade

ThesisAssignedToLocalProject(tid, sid, pid)

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ThesisAssignedToLocalProject.tid REFERENCES Thesis  
 ThesisAssignedToLocalProject.sid REFERENCES Thesis  
 ThesisAssignedToLocalProject.pid REFERENCES ThesisLocalProject

Employee (staff\_id, cid, email, phone\_num, field, name)

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Employee.cid REFERENCES Company

Employee-industrial(eid,pid,grade)

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Employee-industrial.eid REFERENCES Employee  
 Employee-industrial.pid REFERENCES industrial

Defense (DefenseId, sid location, date, content, time, grade,companyID, Staff\_ID, companyGrade,  
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 employeeGrade)

Defense.sid REFERENCES Student  
 Defense.companyID REFERENCES Company  
 Defense .(Staff\_ID,companyID) REFERENCES Employee

Where Defense.grade = Defense.companyGrade + Defense.employeeGrade  
 Where: Defense.grade = Defense.LecturerGrade +Defense.ExternalGrade

CoordinatorScheduleDefense(did, sid, cid)

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CoordinatorScheduleDefense.(sid,did) REFERENCES Defense  
 CoordinatorScheduleDefense.cid REFERENCES Coordinator

ProgressReport(progressID, sid, grade, content, data,cid, eid, LecturerGrade, companyGrade)

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ProgressReport.sid REFERENCES Student  
 ProgressReport.cid REFERENCES Company  
 ProgressReport.(eid,cid) REFERENCES Employee

Where ProgressReport.grade = ProgressReport..LecturerGrade + ProgressReport.companyGrade

LecturerFillPR(pid, sid, lid)

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LecturerFillPR.(sid,pid) REFERENCES ProgressReport

LecturerFillPR.lid REFERENCES Lecturer

TAUpdatePR(tid, pid, sid)

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TAUpdatePR.tid REFERENCES TeachingAssistant

TAUpdatePR.(pid,sid) REFERENCES ProgressReport

EmployeeFillPR(staff\_id, rep\_name, pid, sid)

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EmployeeFillPR.staff\_id REFERENCES Employee

EmployeeFillPR.rep\_name REFERENCES Employee

EmployeeFillPR.sid REFERENCES ProgressReport

EmployeeFillPR.pid REFERENCES ProgressReport

Meeting (mid, todo\_list, date, e\_time, duration, lecturer\_id, meet\_point, s\_time)

Where: Meeting.duration = e\_time – s\_time

MeetingAttdEmail (meeting, emails)

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MeetingAttdEmail.meeting REFERENCES Meeting

Lecturer-ExternalExaminer-LocalProject(lid, eid, pid)

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Lecturer-ExternalExaminer-LocalProject.lid REFERENCES Lecturer

Lecturer-ExternalExaminer-LocalProject.eid REFERENCES ExternalExaminer

Lecturer-ExternalExaminer-LocalProject.pid REFERENCES LocalProject

LecturerAcademic(lid, pid)

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LecturerAcademic.lid REFERENCES Lecturer

LecturerAcademic.pid REFERENCES Academic

Lecturer-LocalProject-Cluster(lid, pid, cid)

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Lecturer-LocalProject-Cluster.lid REFERENCES Lecturer

Lecturer-LocalProject-Cluster.cid REFERENCES Cluster

Lecturer-LocalProject-Cluster.pid REFERENCES LocalProject

TeachingAssistant-Coordinator( tid, cid)

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TeachingAssistant-Coordinator.tid REFERENCES TeachingAssistant

TeachingAssistant-Coordinator.cid REFERENCES Coordinator

TeachingAssistant-Academic(tid, pid)  
TeachingAssistant-Academic.pid REFERENCES academic  
TeachingAssistant-Academic.tid REFERENCES TeachingAssistant

TAMeeting(tid, mid)  
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TAMeeting.tid REFERENCES TeachingAssistant  
TAMeeting.mid REFERENCES Meeting

FacultyProject(faculty\_code, pid)  
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FacultyProject.faculty\_code REFERENCES Faculty  
FacultyProject.pid REFERENCES BachelorProject

Company-Defense-Employee(did, cid, staff\_id, company\_grade, employee\_grade, total\_grade,  
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lecturer\_grade, TeachingAssistant\_grade)  
Company-Defense-Employee.did REFERENCES Defense  
Company-Defense-Employee.cid REFERENCES Company  
Company-Defense-Employee.staff\_id REFERENCES Employee

Where total\_grade = company\_grade + employee\_grade  
Where total\_grade = lecturer\_grade + TeachingAssistant\_grade

LecturerGradePR(sid, pid, lid, lecturer\_grade)  
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LecturerGradePR.sid REFERENCES ProgressReport  
LecturerGradePR.pid REFERENCES ProgressReport  
LecturerGradePR.lid REFERENCES Lecturer

Lecturer-Company-ProgressReport(lid, sid, pid, cid, lecturer\_grade, company\_grade)  
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Lecturer-Company-ProgressReport.lid REFERENCES Lecturer  
Lecturer-Company-ProgressReport.(sid ,pid) REFERENCES ProgressReport  
Lecturer-Company-ProgressReport.cid REFERENCES Company

Company-Employee-Thesis(tid, staff\_id, cid, sid, employee\_grade, company\_grade)  
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Company-Employee-Thesis.tid REFERENCES Thesis  
Company-Employee-Thesis.sid REFERENCES Thesis  
Company-Employee-Thesis.cid REFERENCES Company  
Company-Employee-Thesis.(cid, staff\_id) REFERENCES Employee