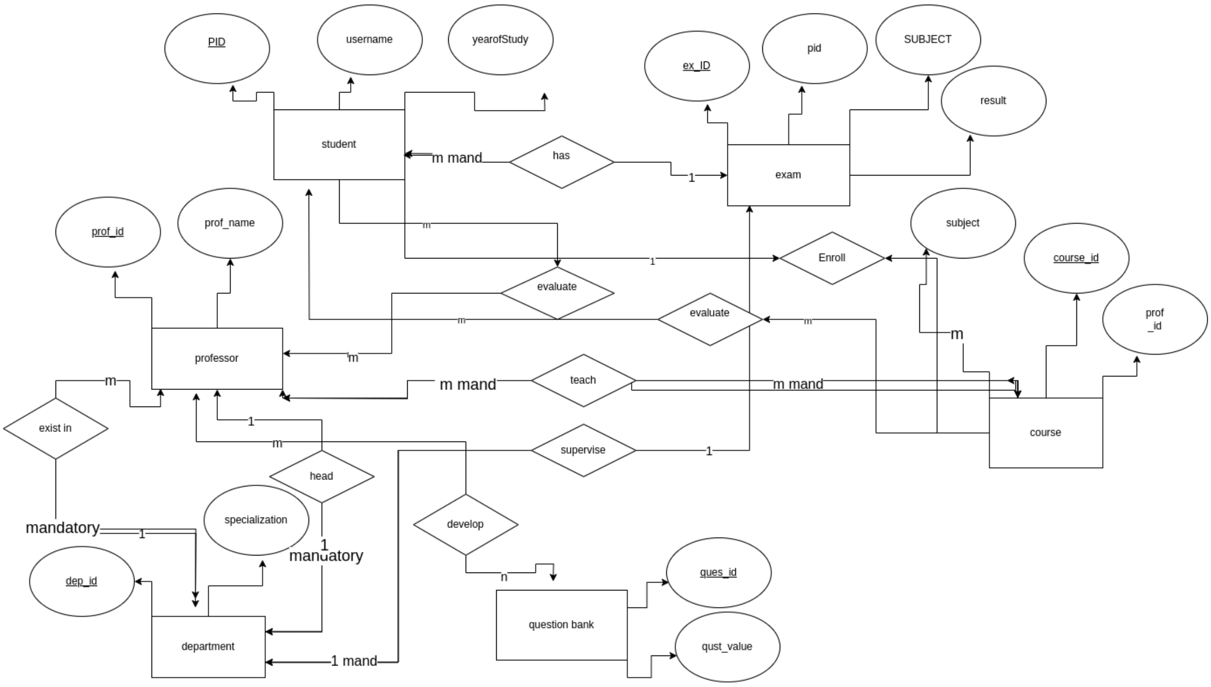
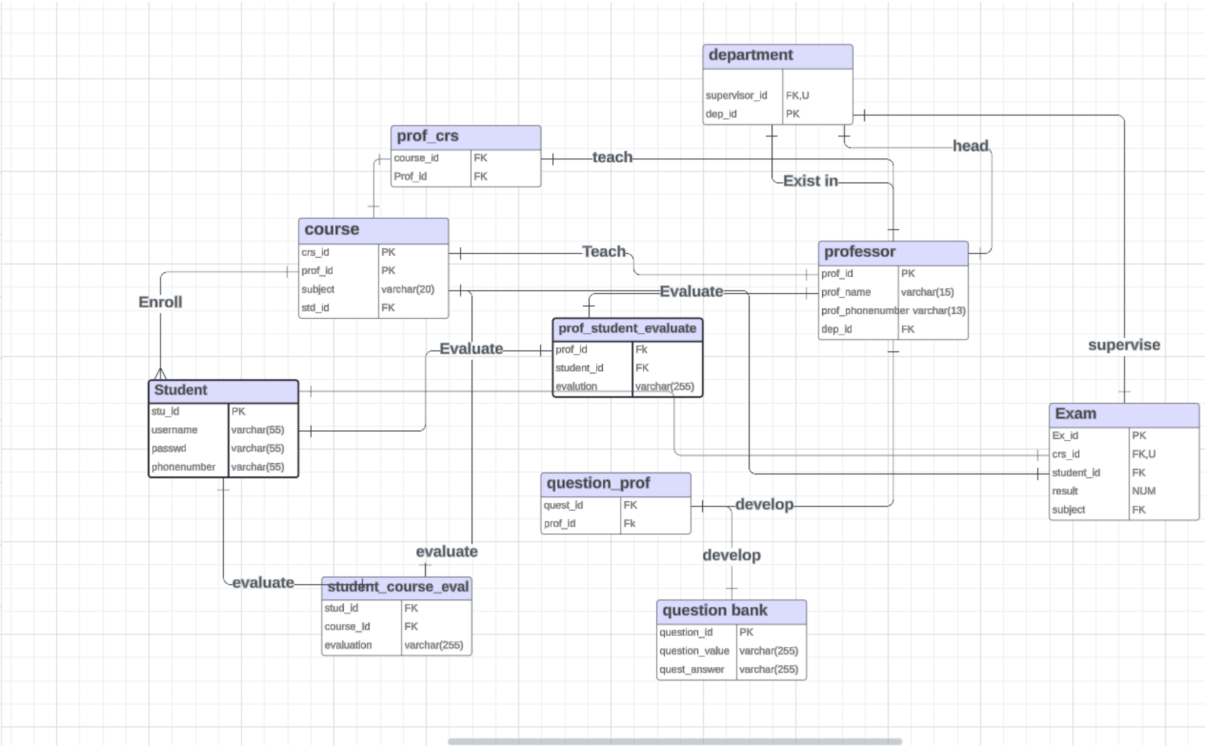
Data base project

1- erd database



2- erd data model (after mapping)

(1)- mapping



department

supervisor_id	FK,U
dep_id	PK

prof_crs

course_id	FK
Prof_id	FK

course

crs_id	PK
prof_id	PK
subject	varchar(20)
std_id	FK

professor

prof_id	PK
prof_name	varchar(15)
prof_phonenumber	varchar(13)
dep_id	FK

prof_student_evaluate

prof_id	Fk
student_id	FK
evalution	varchar(255)

Student

stu_id	PK
username	varchar(55)
passwd	varchar(55)
phonenumber	varchar(55)

Exam

Ex_id	PK
crs_id	FK,U
student_id	FK
result	NUM
subject	FK

question_prof

quest_id	FK
prof_id	Fk

student_course_eval

stud_id	FK
course_Id	FK
evaluation	varchar(255)

question bank

question_id	PK
question_value	varchar(255)
quest_answer	varchar(255)

(2) normalisation

It'will be no normalisation because there is no

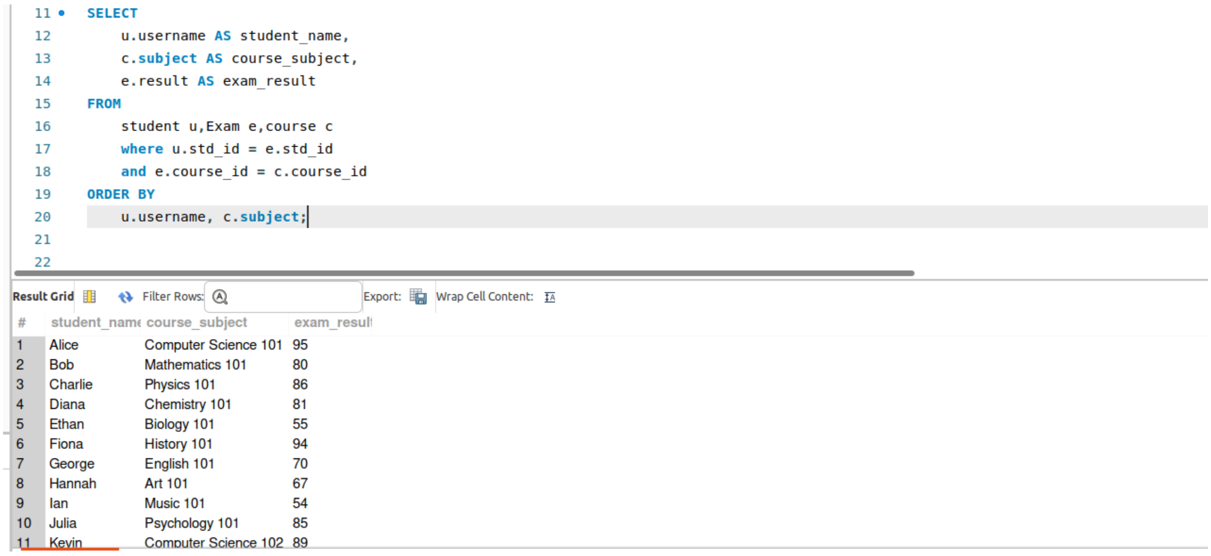
1—> multi values or related group so it's no need to transform to 1st normal form

2—> there's no partial dependencies so it's no need to transform it to 2nd normal form

3—-> there 's no transitive dependencies so there's no need to transform it to 3rd normal form

(sql queries)

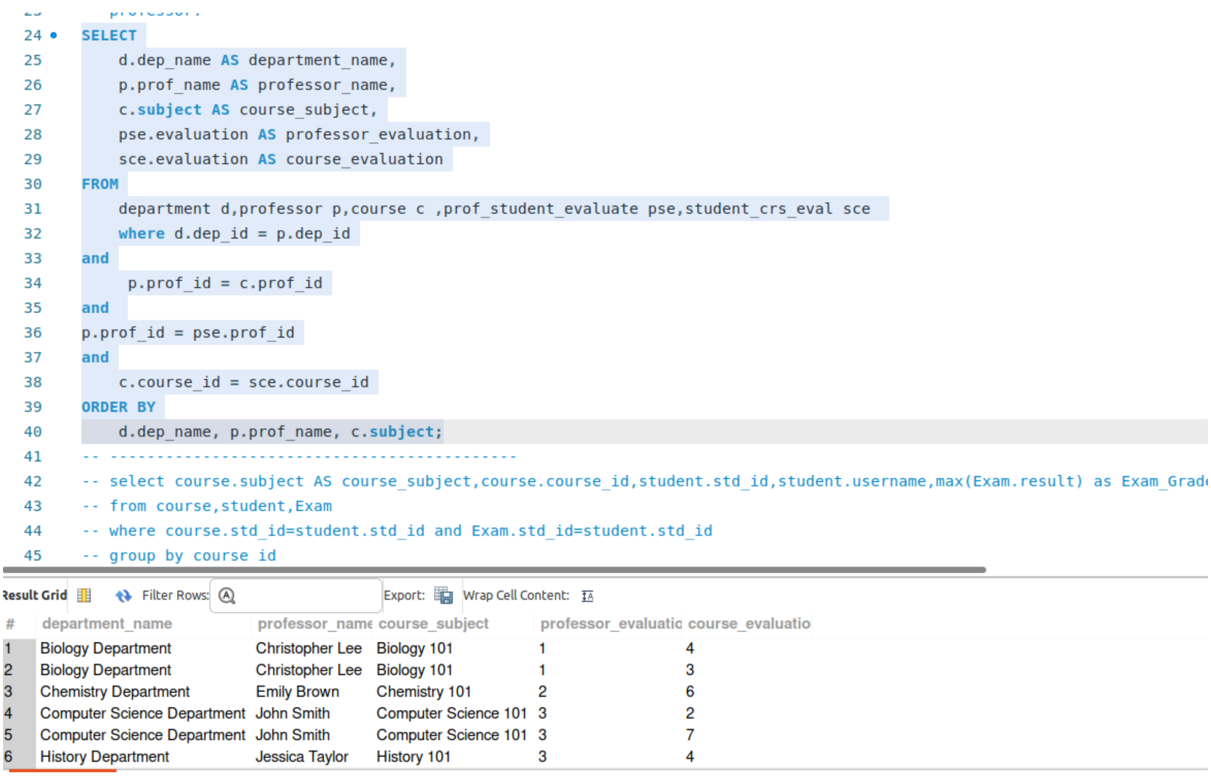
1-



```
SELECT
    u.username AS student_name,
    c.subject AS course_subject,
    e.result AS exam_result
FROM
    student u,Exam e,course c
    where u.std_id = e.std_id
    and e.course_id = c.course_id
ORDER BY
    u.username, c.subject;
```

#	student_name	course_subject	exam_result
1	Alice	Computer Science 101	95
2	Bob	Mathematics 101	80
3	Charlie	Physics 101	86
4	Diana	Chemistry 101	81
5	Ethan	Biology 101	55
6	Fiona	History 101	94
7	George	English 101	70
8	Hannah	Art 101	67
9	Ian	Music 101	54
10	Julia	Psychology 101	85
11	Kevin	Computer Science 102	89

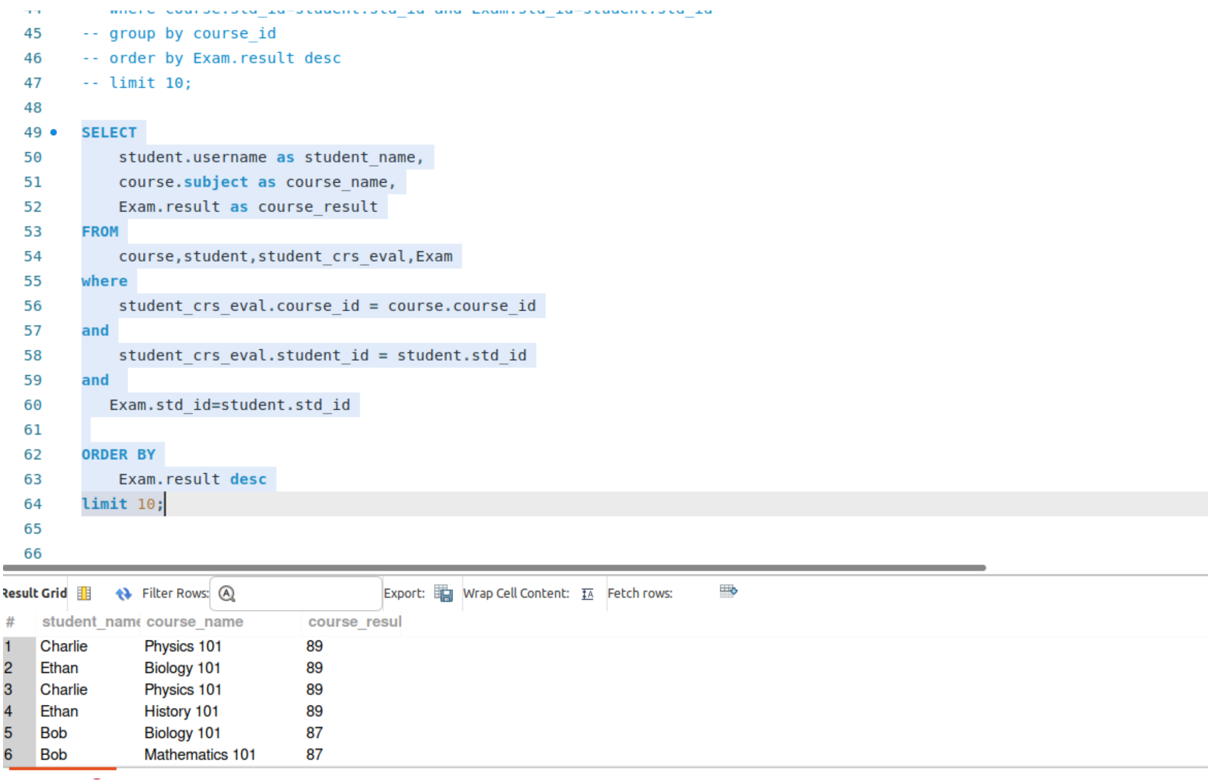
2-



```
    professor.
SELECT
    d.dep_name AS department_name,
    p.prof_name AS professor_name,
    c.subject AS course_subject,
    pse.evaluation AS professor_evaluation,
    sce.evaluation AS course_evaluation
FROM
    department d,professor p,course c ,prof_student_evaluate pse,student_crs_eval sce
    where d.dep_id = p.dep_id
and
     p.prof_id = c.prof_id
and
p.prof_id = pse.prof_id
and
    c.course_id = sce.course_id
ORDER BY
    d.dep_name, p.prof_name, c.subject;
-- -----------------------------------------
-- select course.subject AS course_subject,course.course_id,student.std_id,student.username,max(Exam.result) as Exam_Grade
-- from course,student,Exam
-- where course.std_id=student.std_id and Exam.std_id=student.std_id
-- group by course id
```

#	department_name	professor_name	course_subject	professor_evaluatio	course_evaluatio
1	Biology Department	Christopher Lee	Biology 101	1	4
2	Biology Department	Christopher Lee	Biology 101	1	3
3	Chemistry Department	Emily Brown	Chemistry 101	2	6
4	Computer Science Department	John Smith	Computer Science 101	3	2
5	Computer Science Department	John Smith	Computer Science 101	3	7
6	History Department	Jessica Taylor	History 101	3	4

3-



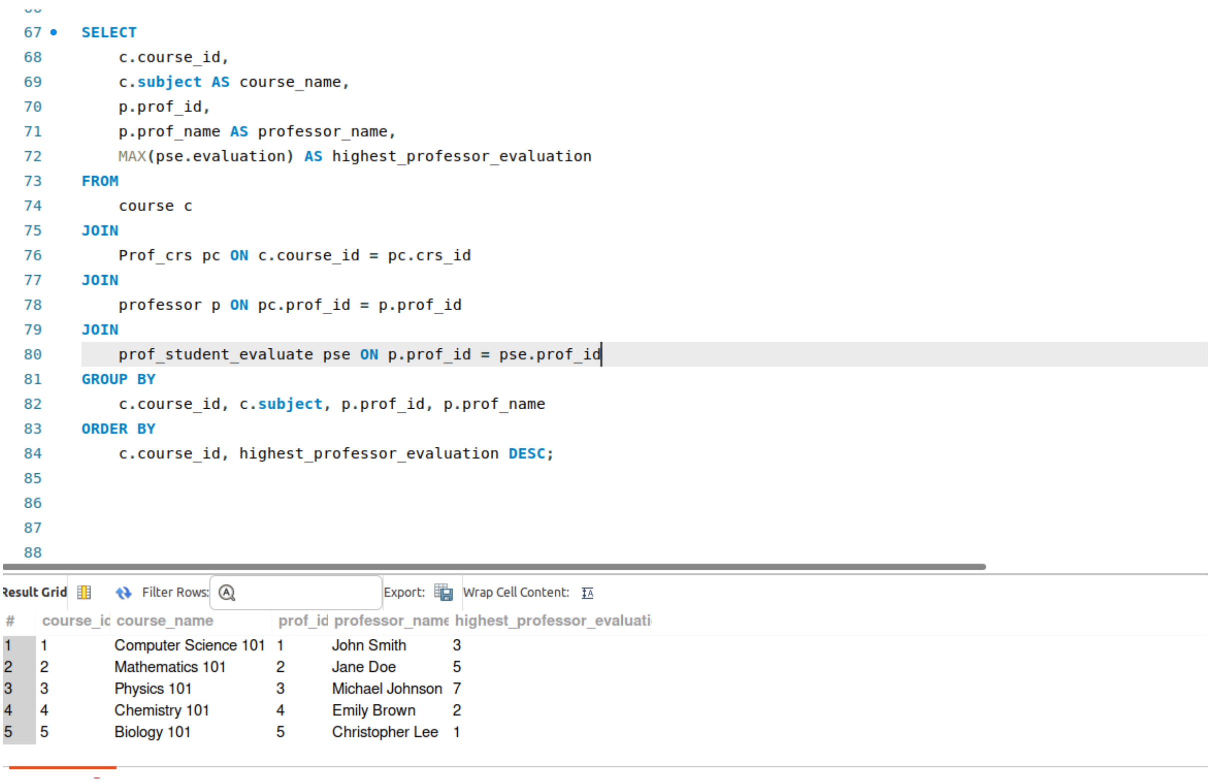
```sql
 where course.std_id=student.std_id and Exam.std_id=student.std_id
-- group by course_id
-- order by Exam.result desc
-- limit 10;

SELECT
    student.username as student_name,
    course.subject as course_name,
    Exam.result as course_result
FROM
    course,student,student_crs_eval,Exam
where
    student_crs_eval.course_id = course.course_id
and
    student_crs_eval.student_id = student.std_id
and
   Exam.std_id=student.std_id

ORDER BY
    Exam.result desc
limit 10;
```

```
#  student_name course_name      course_resul
1  Charlie      Physics 101      89
2  Ethan        Biology 101      89
3  Charlie      Physics 101      89
4  Ethan        History 101      89
5  Bob          Biology 101      87
6  Bob          Mathematics 101  87
```

4-



```sql
SELECT
    c.course_id,
    c.subject AS course_name,
    p.prof_id,
    p.prof_name AS professor_name,
    MAX(pse.evaluation) AS highest_professor_evaluation
FROM
    course c
JOIN
    Prof_crs pc ON c.course_id = pc.crs_id
JOIN
    professor p ON pc.prof_id = p.prof_id
JOIN
    prof_student_evaluate pse ON p.prof_id = pse.prof_id
GROUP BY
    c.course_id, c.subject, p.prof_id, p.prof_name
ORDER BY
    c.course_id, highest_professor_evaluation DESC;
```

```
#  course_ic course_name           prof_id professor_name   highest_professor_evaluati
1  1         Computer Science 101  1       John Smith       3
2  2         Mathematics 101       2       Jane Doe         5
3  3         Physics 101           3       Michael Johnson  7
4  4         Chemistry 101         4       Emily Brown      2
5  5         Biology 101           5       Christopher Lee  1
```