

TEAM

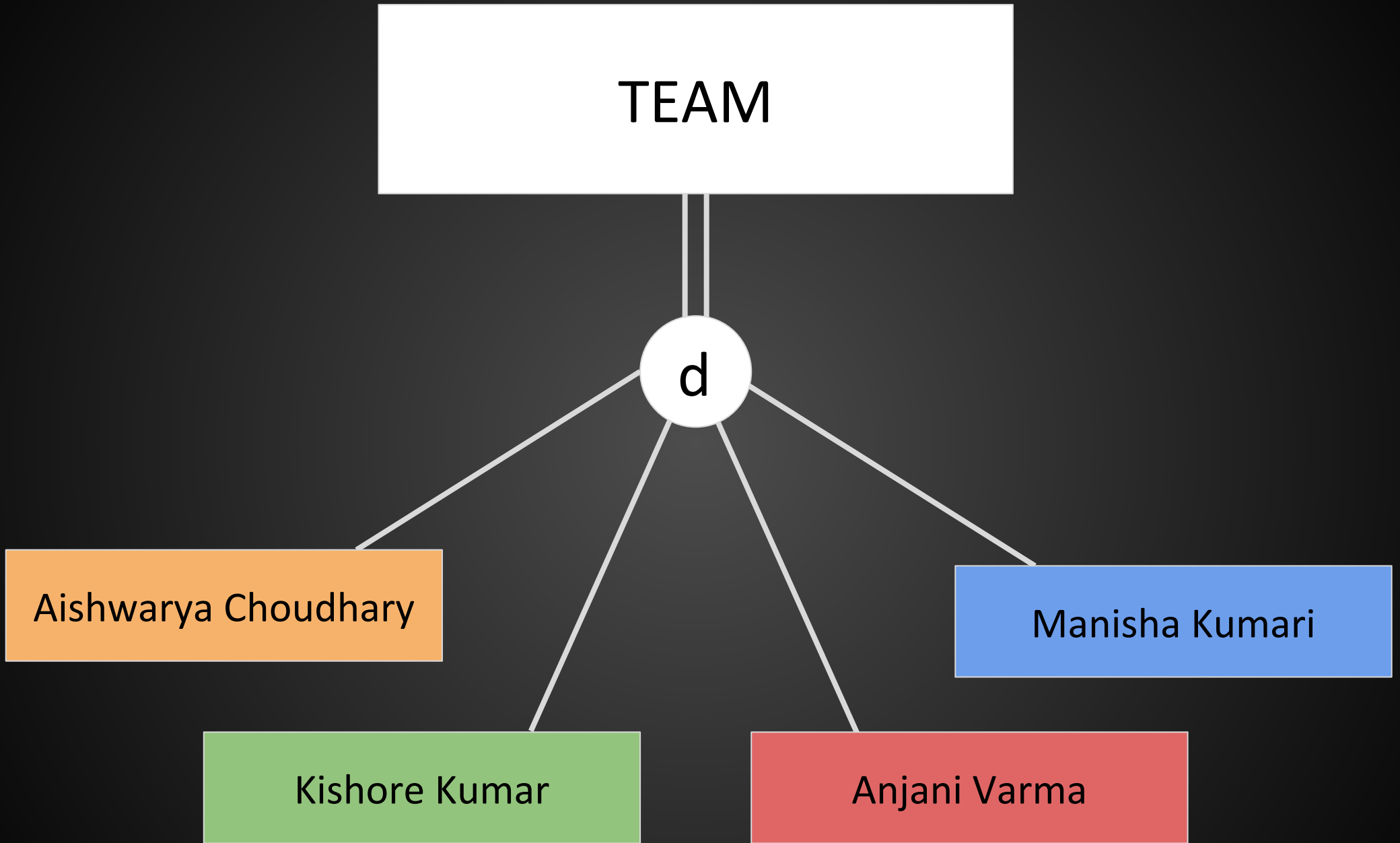
d

Aishwarya Choudhary

Manisha Kumari

Kishore Kumar

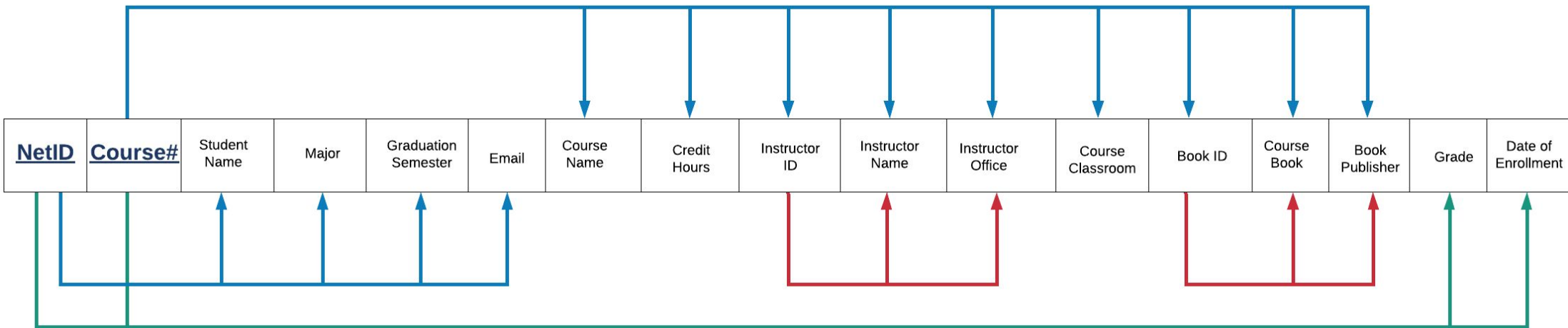
Anjani Varma



Business Rules and Assumptions

1. **Student** should enrol in at least one **course**.
2. Each **course** should have at least one student **enrollment**.
3. A **course** can have only one prescribed **book**.
4. A **book** may or may not be a prescribed course **book** but a **book** may be prescribed for more than one **course**.
5. A **course** must have only one **instructor**.
6. An **instructor** can teach one or more than one **course**.

The Functional Dependency Diagram



Partial Dependency

Transitive Dependency

Full Dependency

Partial Dependency

NetID → StudentName, Major,
GraduationSemester, Email

Course# → CourseName, CreditHours,
InstructorID, InstructorName,
InstructorOffice, CourseClassroom,
BookID, CourseBook, BookPublisher

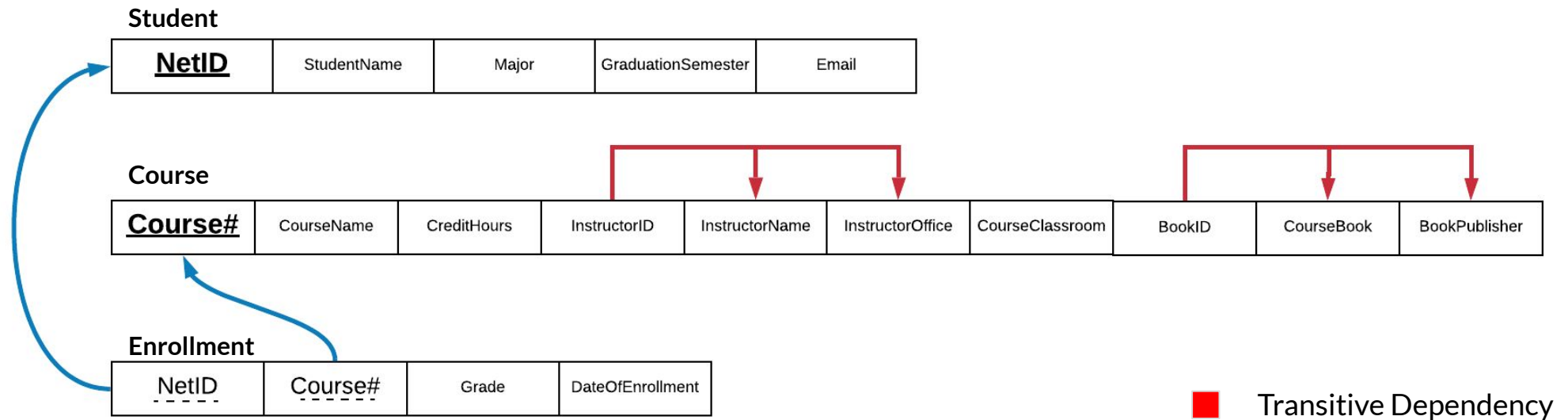
Transitive Dependency

Instructor ID → InstructorName, InstructorOffice
Book ID → CourseBook, BookPublisher

Full Dependency

Net ID, Course# → Grade, DateOfEnrollment

Relational Model - 2NF



Partial Dependency

NetID → StudentName, Major,
GraduationSemester, Email

Course# → CourseName, CreditHours,
InstructorID, InstructorName,
InstructorOffice, CourseClassroom,
BookID, CourseBook, BookPublisher

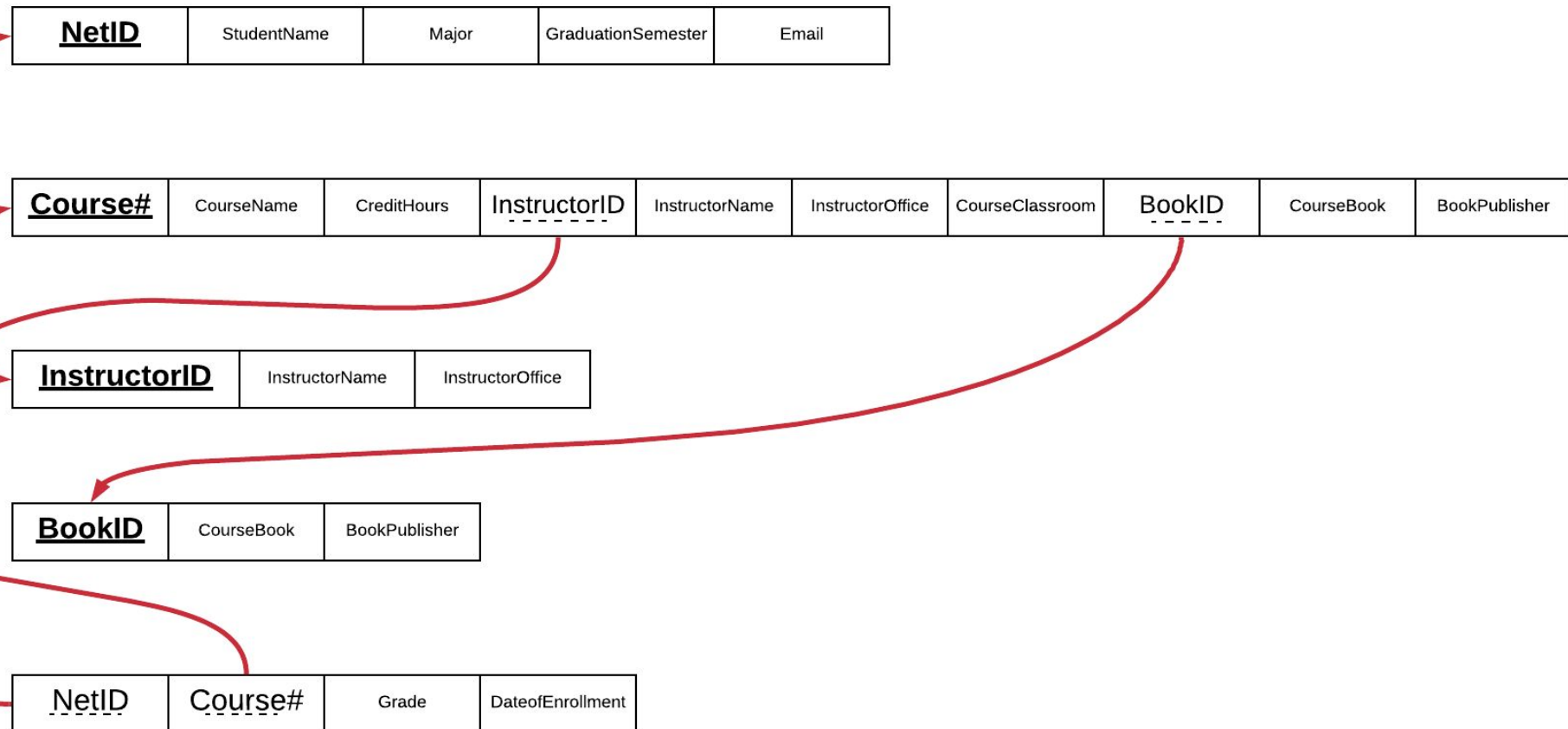
Transitive Dependency

Instructor ID → InstructorName, InstructorOffice
Book ID → CourseBook, BookPublisher

Full Dependency

Net ID, Course# → Grade, DateOfEnrollment

Relational Model - 3NF



Full Dependency

NetID → StudentName, Major, GraduationSemester, Email

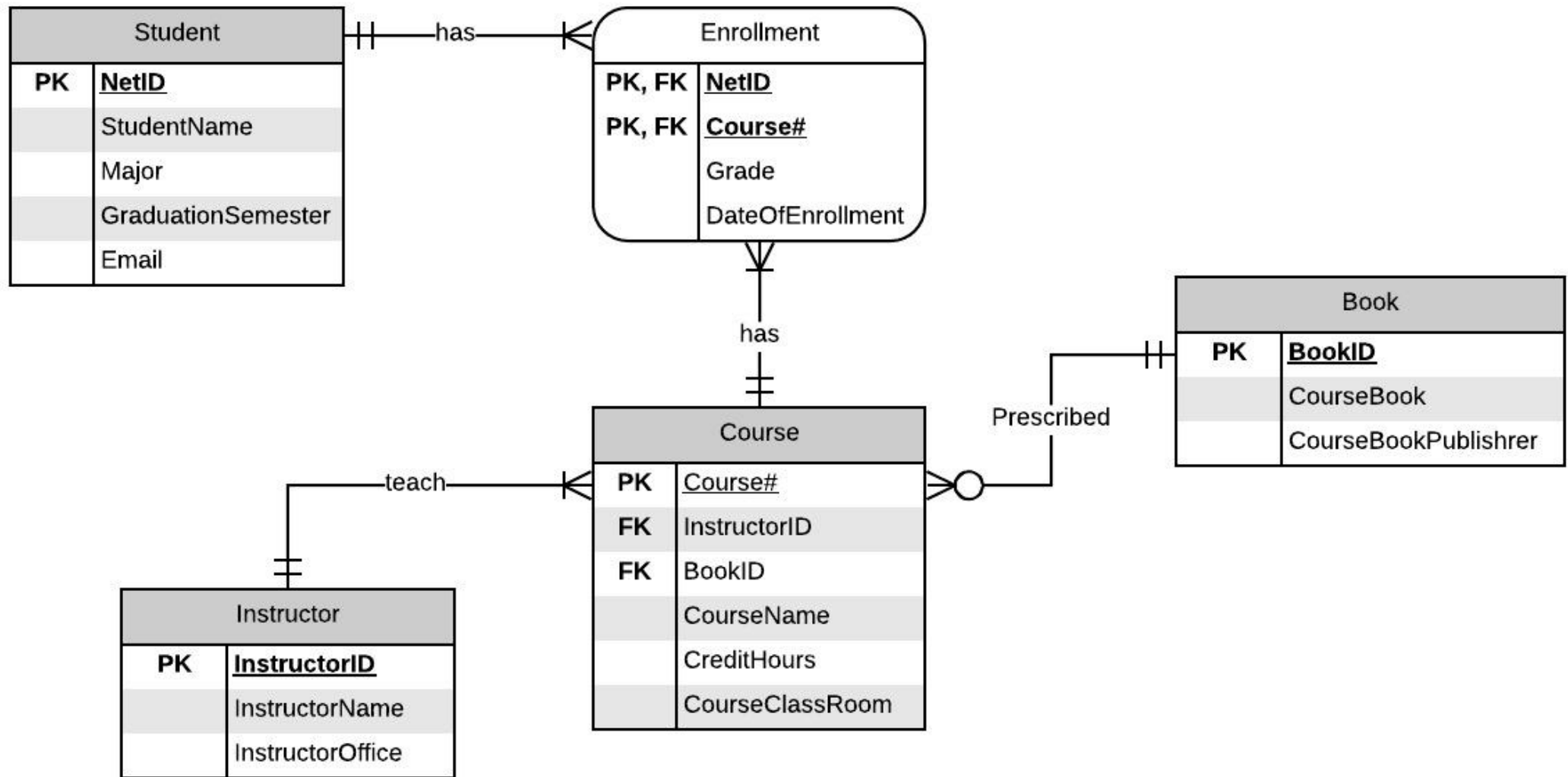
Course# → CourseName, CreditHours, InstructorID, InstructorName, InstructorOffice, CourseClassroom, BookID, CourseBook, BookPublisher

Instructor ID → InstructorName, InstructorOffice

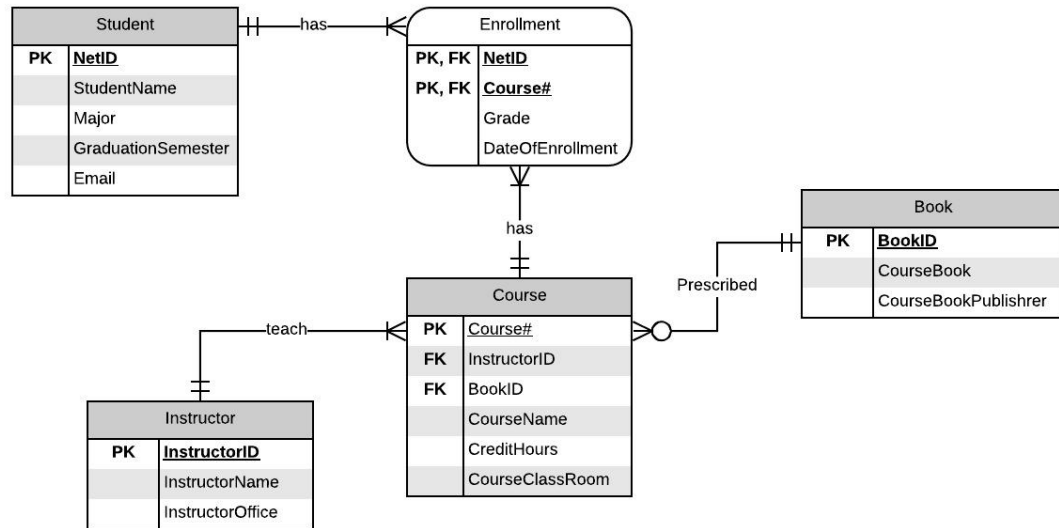
BookID → CourseBook, BookPublisher

Net ID, Course# → Grade, DateOfEnrollment

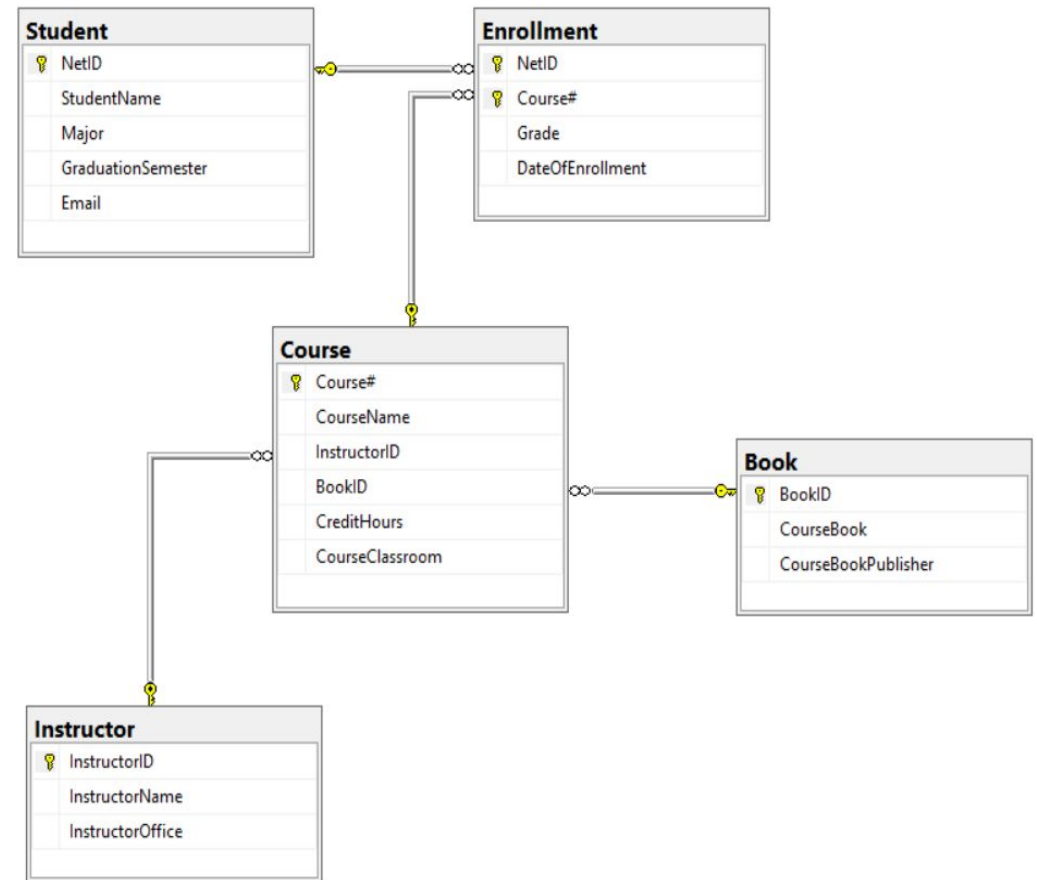
ER Diagram



ER Diagram



Database Diagram



Content of SCHEDULE DATABASE

each table in the database

```
select top 2* from student;
```

Results		Messages			
	NetID	StudentName	Major	GraduationSemester	Email
1	af6376	Aishwarya Choudhary	MSBA	Spring 2020	achoudhary8@horizon.csueastbay.edu
2	bh7852	Peter Smith	MSBA	Fall 2018	psmith9@horizon.csueastbay.edu

```
select top 2* from course;
```

Results		Messages				
	Course#	CourseName	InstructorID	BookID	CreditHours	CourseClassroom
1	BAN601	Tech Fundamentals	jdh7852	IO13	3	VBT103
2	BAN602	Quantitative Fundamentals	nfh7412	SF71	3	VBT114

```
select top 2* from book;
```

Results		Messages	
	BookID	CourseBook	CourseBookPublisher
1	BO78	Organisational Synergy	Synergy Centre
2	DG22	Strategic Management	McGraw Hill

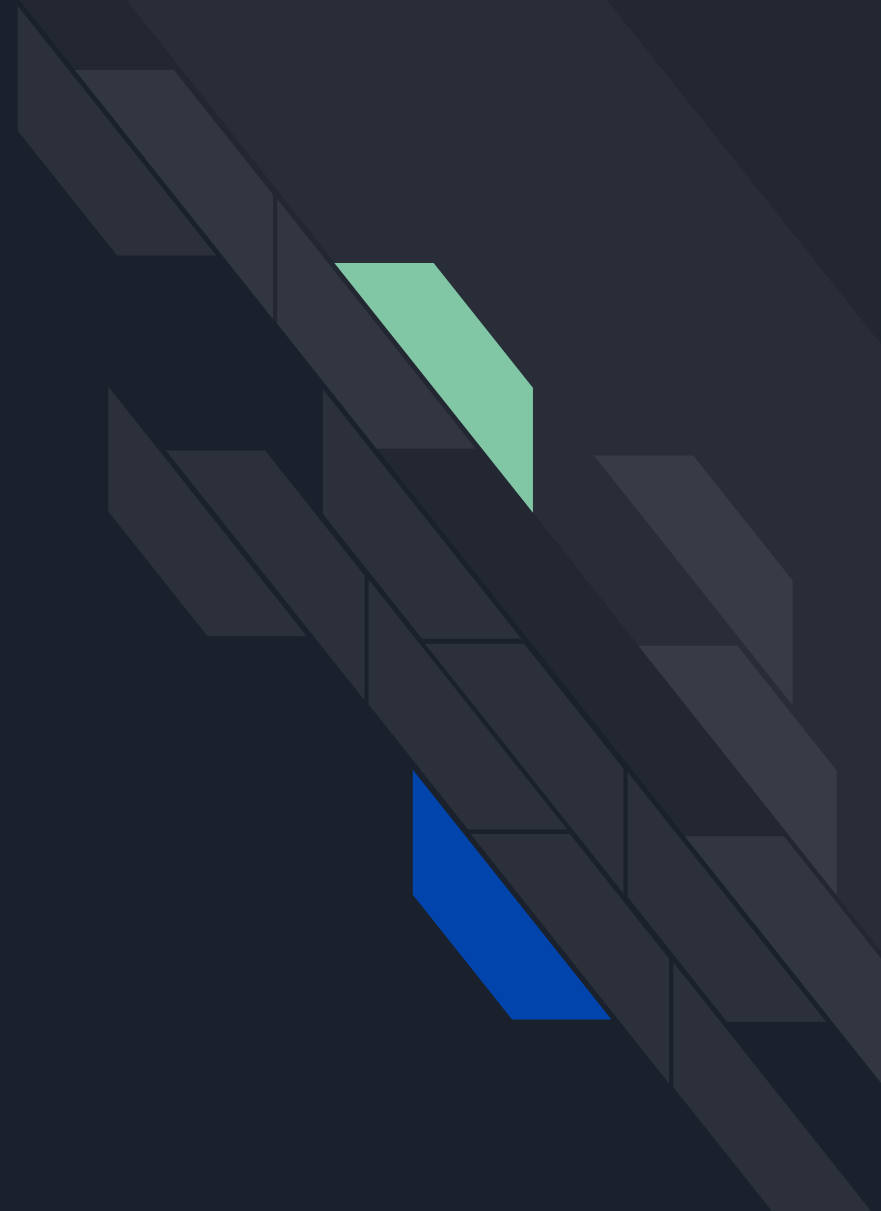
```
select top 2* from enrollment;
```

Results		Messages		
	NetID	Course#	Grade	DateOfEnrollment
1	af6376	BAN601	B	2018-01-14
2	af6376	BAN602	A	2018-01-14

```
select top 2* from Instructor;
```

Results		Messages	
	InstructorID	InstructorName	InstructorOffice
1	jdh7852	Chongqi Wu	VBT1402
2	jwo9763	Lan Wang	VBT1407

The **test queries** and the
output.

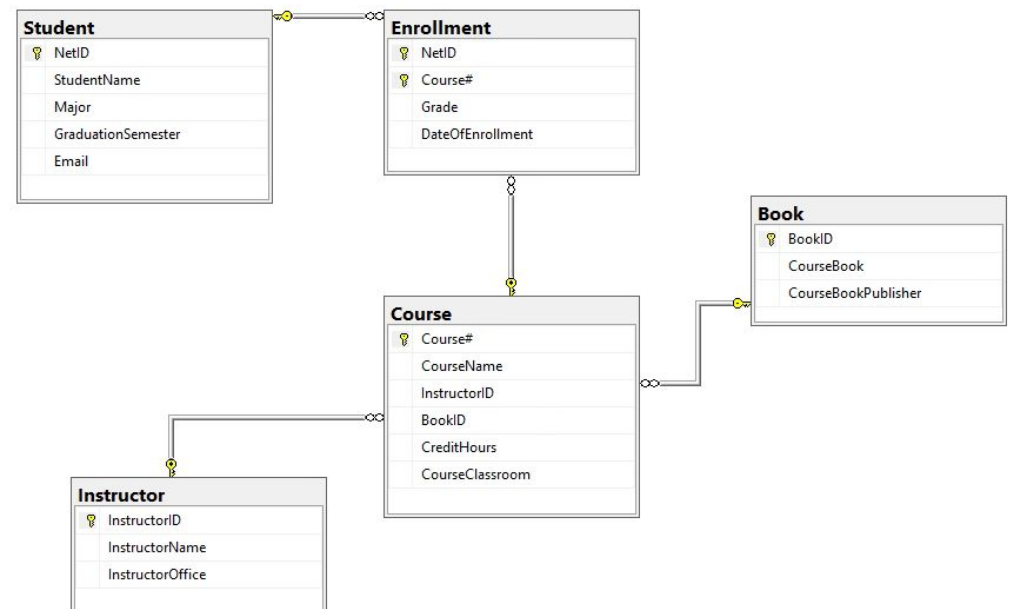


The test queries and the outputs. (1/5)

--1. Count the number of students who are graduating in the same semester.

```
select GraduationSemester, count(*) as 'No Of Students'
from Student
group by GraduationSemester
```

	Results	Messages
	GraduationSemester	No_Of_Students
1	Fall 2018	3
2	Fall 2019	3
3	Fall 2020	3
4	Spring 2019	2
5	Spring 2020	1

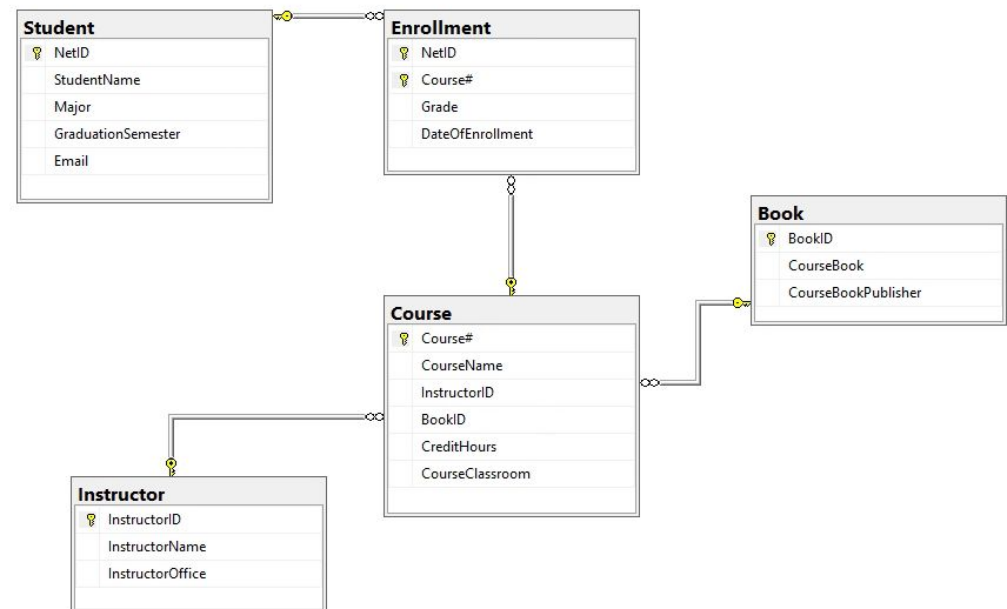


The test queries the outputs. (2/5)

--2. Display the students name and major who have taken BAN 610.

```
select s.StudentName, s.Major
from student s inner join Enrollment e on s.NetID=e.NetID
where e.Course#='BAN610'
```

	StudentName	Major
1	Aishwarya Choudhary	MSBA
2	Peter Smith	MSBA
3	John Smith	MSBA
4	George Mason	MSBA
5	Manisha Kumari	MSBA
6	Anna Picore	MSBA
7	Kishore Kumar Nakka	MSBA
8	Anjani Vama Chintalapati	MSBA

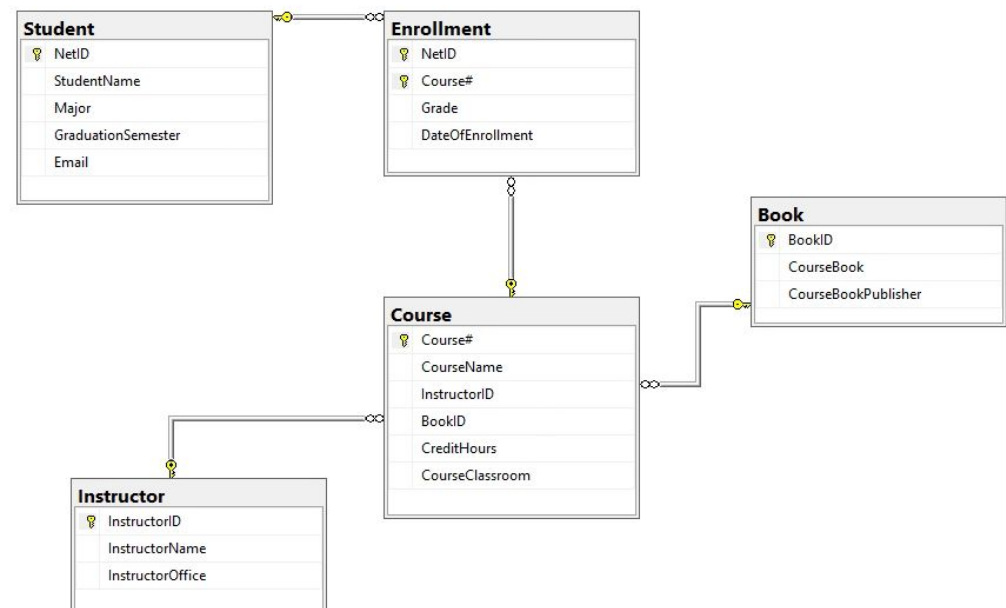


The test queries and the outputs. (3/5)

--3. Display the NetID and student name of the students who have taken more than 8 courses in year 2018 (adjust the number of courses taken so that the query returns at least one result).

```
select x.NetID, x.StudentName
from
(
select e.NetID, s.[StudentName], count(e.course#) as 'count'
from Enrollment e inner join Student s on e.NetID=s.NetID
where year([DateOfEnrollment])='2018'
group by e.[NetID], s.[StudentName]
having count(course#)>8
)as x where x.[count]>8
```

Results			Messages	
	NetID	StudentName		
1	dr8965	Jerry Jones		

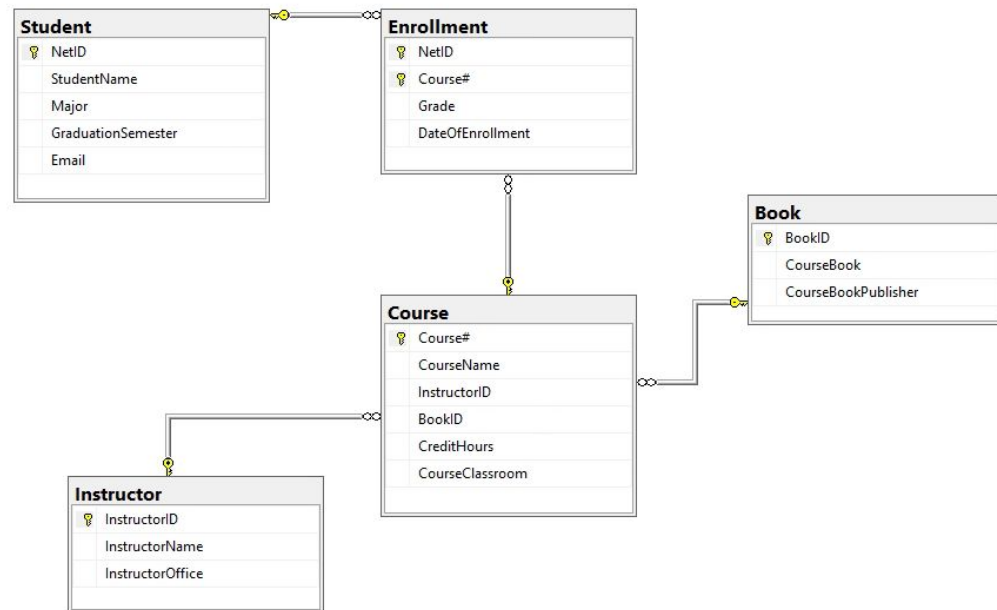


The test queries and the outputs. (4/5)

--4. Display the NetID and the total credit hours taken by each student in 2018.

```
select s.NetID, sum(c.CreditHours) as 'CreditHours'
from [dbo].[Student] s
inner join [dbo].[Enrollment] e on s.NetID=e.NetID
inner join [dbo].[Course] c on e.Course#=c.Course#
where year(DateOfEnrollment)='2018'
group by s.NetID
```

	NetID	CreditHours
1	af6376	12
2	bh9423	9
3	bv5892	15
4	dr8965	30
5	es7896	9
6	ge3698	9
7	hf7898	9
8	hu7874	12
9	nd5674	12
10	qp9228	15
11	re4796	12

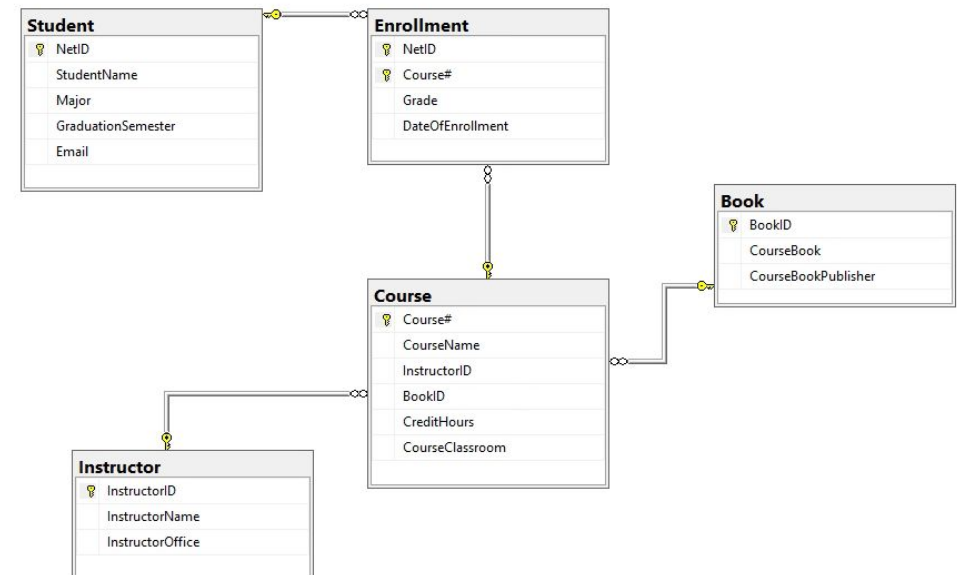


The test queries and outputs. (5/5)

--5. Display the instructors name and the number of course books prescribed by each instructor.

```
select i.InstructorName, count(b.BookID) as 'No Of Course Books Prescribed'  
from [dbo].[Instructor] i  
inner join [dbo].[Course] c on i.InstructorID=c.InstructorID  
inner join [dbo].[Book] b on c.BookID=b.BookID  
group by i.InstructorName, i.InstructorID
```

	InstructorName	No_Of_Course_Books_Prescribed
1	Chongqi Wu	2
2	Lan Wang	2
3	Surendra Samikar	2
4	Glenn Taylor	2
5	Jiming Wu	2
6	Micah Frankel	1
7	Jyotishka Ray	2
8	Asha Rao	1
9	Peng Xie	2
10	Joseph Kuehn	2
11	Zinovy Radovilsky	2
12	Balaraman Rajan	1
13	Bo Peng	1



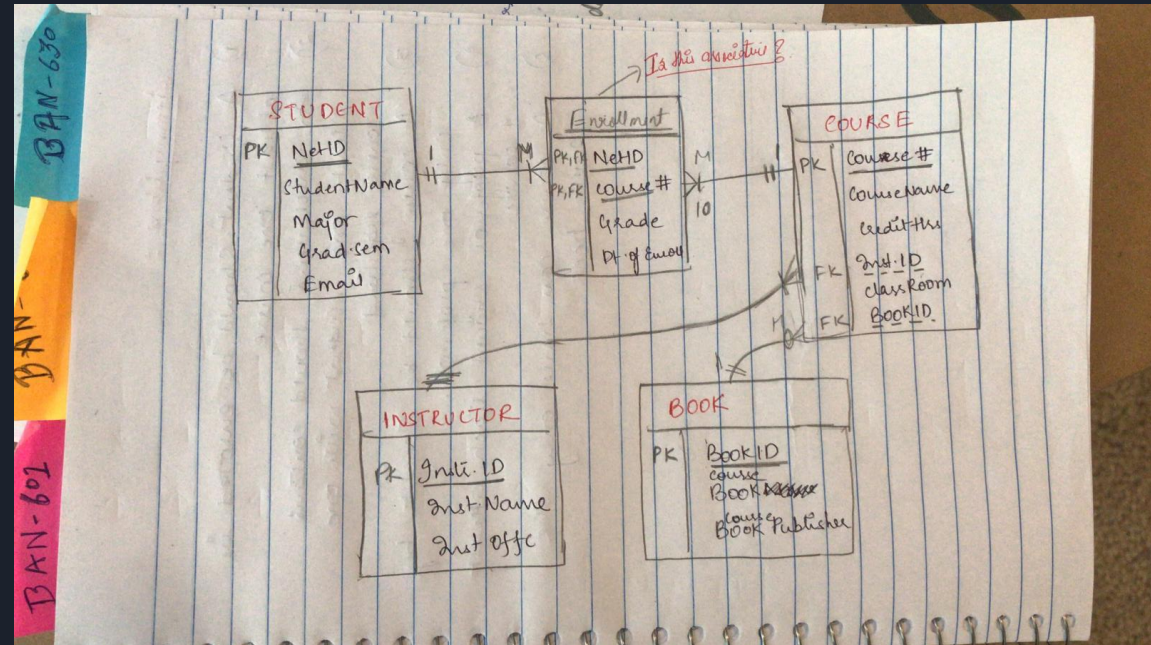
Difficulties that we
encountered in creating the
database and executing the
queries.

None. 🕶️

Coz, We're just **Awesome.**

We know you want to see **BEHIND THE SCENES** 🤪

Very few papers that are remaining of the 17+ torn from our works on the paper



3NF

Student				
<u>Net ID</u>	Student Name	Major	Grad Sem	Email

Course					
<u>Course #</u>	Course Name	Credit Hrs	<u>Inst Name</u>	Classroom	<u>Book</u>

Instructor	
<u>Inst. Name</u>	Inst. Office

Book	
<u>Book</u>	Book Publisher

<u>Net ID</u>	<u>Course #</u>	Grade	Dt. of Enroll.
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+ Inst. ID. (name will not be used)
+ Book ID (remove book update in Book table)
Remove account
Remove account

2NF

Student				
<u>Net ID</u>	Student Name	Major	Grad Sem	Email

Course							
<u>Course #</u>	Course Name	Credit Hrs	<u>Inst. Name</u>	<u>Inst. Office</u>	Classroom	<u>Book</u>	<u>Book Publisher</u>

<u>Net ID</u>	<u>Course #</u>	Grade	Dt. of Enrollment
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Thank you