BASIC SQL

MSiA 413
Week 4 Discussion

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Announcements

- Grades for HW1 should be out.
- HW2 is due tomorrow (!)
- The next discussion section will be a review for the midterm
  - Sample midterm is coming soon

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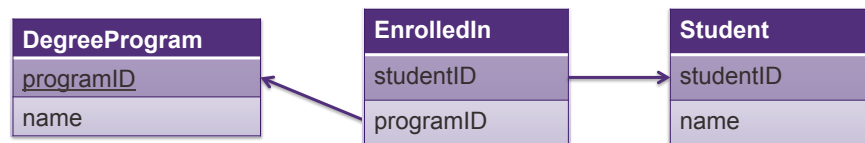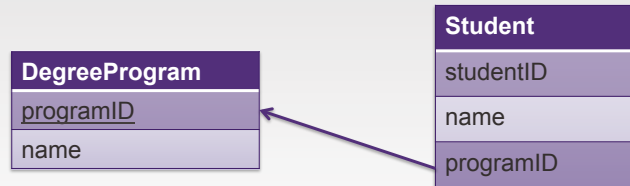
ANY QUESTIONS ON THE HOMEWORK?

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Advanced Data Modeling

- What is the difference between an IS-A and HAS-A relationship?
- Pretend you're the IT administrator for Northwestern University
  - Every degree program HAS students enrolled in them.
  - Every student IS a grad student or undergrad
    - Every student has a studentID, a name, and a phone number
    - Grad students have advisors and dissertations, and undergrads do not
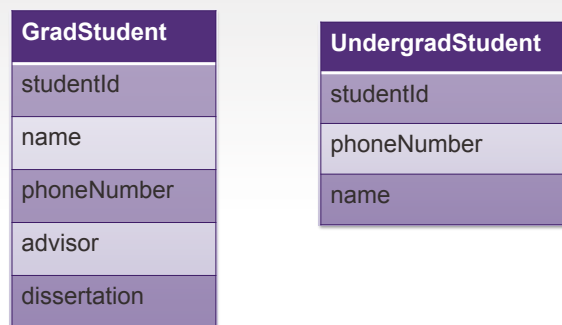 - What are some ways that you can implement this database?
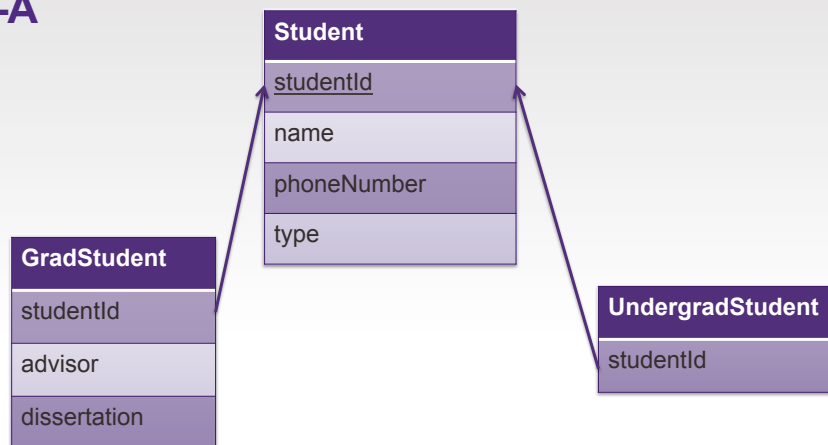
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HAS-A

Student
studentID
name
programID

DegreeProgram
programID
name

DegreeProgram
programID
name

EnrolledIn
studentID
programID

Student
studentID
name

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IS-A

GradStudent
studentId
name
phoneNumber
advisor
dissertation

UndergradStudent
studentId
phoneNumber
name

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IS-A

Student
studentId
name
phoneNumber
type
advisor
dissertation

IS-A

Student
studentId
name
phoneNumber
type

GradStudent
studentId
advisor
dissertation

UndergradStudent
studentId

Evaluating SQL
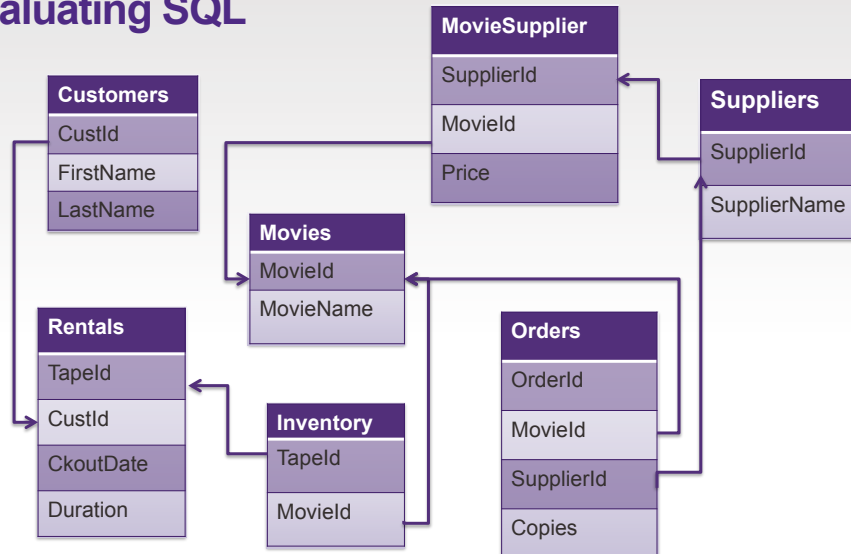
Query #1

Which movies are supplied by "Joe's House of Video" or "Video Warehouse"?

SELECT MovieName FROM Movies, MovieSupplier, Suppliers
WHERE Movies.MovieID == MovieSupplier.MovieID
AND MovieSupplier.SupplierID == Supplier.SupplierID AND
(Supplier.SupplierName == 'Joes House of Video'
OR Supplier.SupplierName == 'Video Warehouse');

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Query #2

Which movie was rented for the longest duration (by any customer)?

```
SELECT MovieName FROM Movies, Rentals, Inventory
WHERE Movies.MovieID == Inventory.MovieID
AND Inventory.TapeId == Rentals.TapeID
 AND Rentals.Duration == (
          SELECT MAX(Duration) FROM Rentals
)
```

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10/23/18
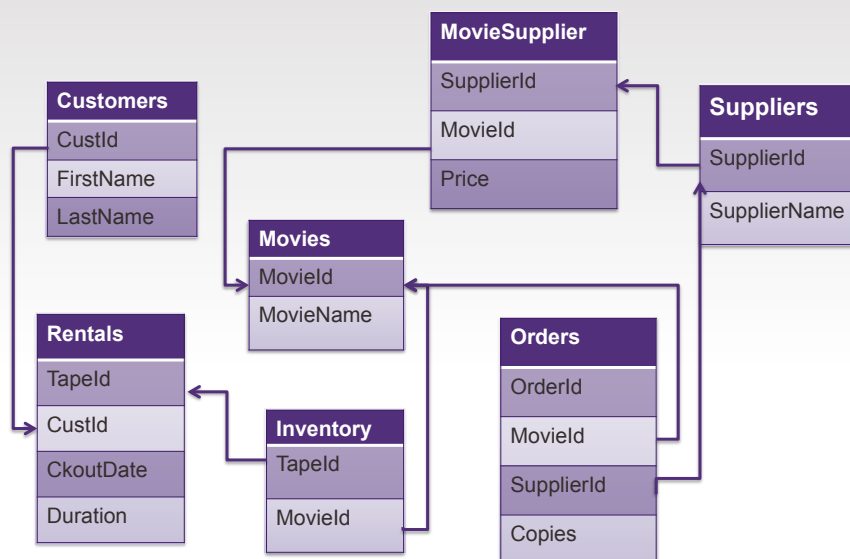
Query #3

Which customers rented any movies in the Star Wars franchise?

```
SELECT DISTINCT Customers.LastName
FROM Customers, Rentals, Movies
WHERE Customers.CustomerId == Rentals.CustomerId
AND Rentals.MovieId == Movies.MovieId
AND Movies.MovieName LIKE 'Star Wars%'
```
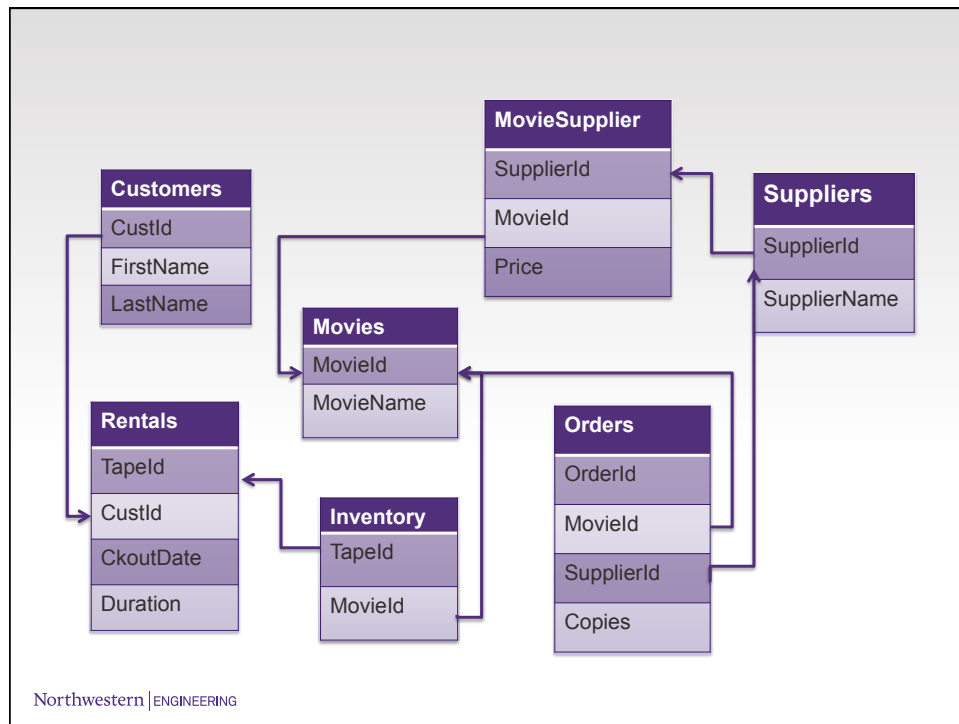
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Query #4

Which customers rented movies for 5 days or more?

```
SELECT DISTINCT Customers.LastName
FROM Customers, Rentals
WHERE Customers.CustomerId == Rentals.CustomerId
AND Rentals.Duration >= 5
```

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Query #5

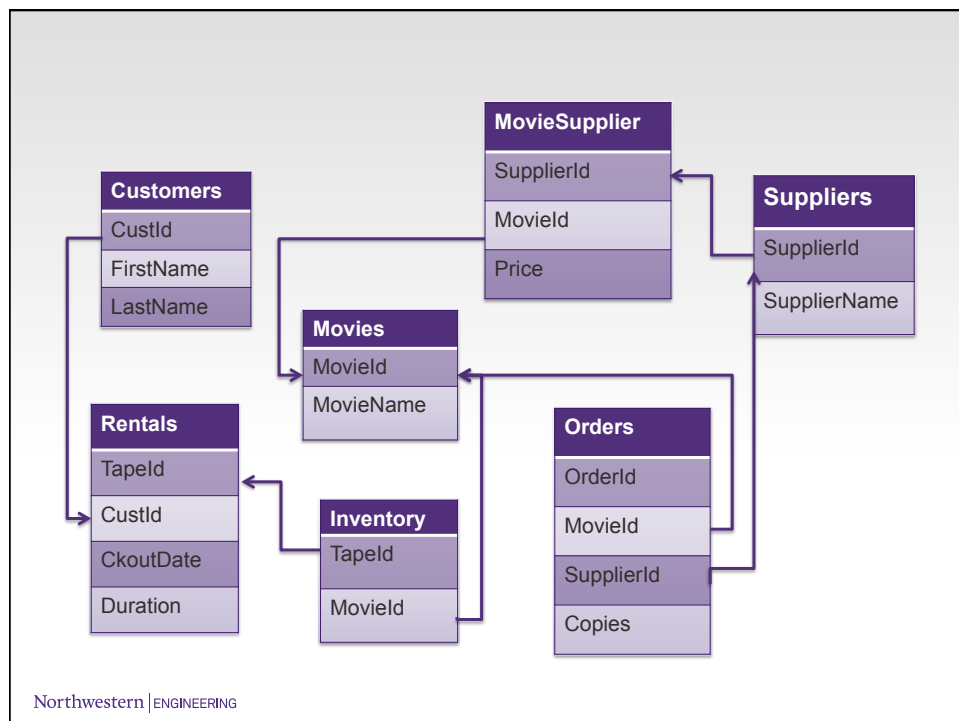How many movies in the inventory does each supplier supply?

    SELECT Suppliers.SupplierName, COUNT(DISTINCT MovieID)
    FROM Suppliers, MovieSupplier, Inventory
    WHERE Suppliers.SupplierID = MovieSupplier.SupplierID
    AND MovieSupplier.MovieID = Inventory.MovieID
    GROUP BY Suppliers.SupplierName

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Query #6

Which suppliers supply all the movies in the inventory?

```
SELECT Suppliers.SupplierName
FROM Suppliers, MovieSuppliers
WHERE MovieSuppliers.SupplierId == Supplier.SupplierId
AND COUNT(DISTINCT MovieSuppliers.MovieId) = (
        SELECT COUNT(DISTINCT Inventory.MovieId)
        FROM Inventory
)
GROUP BY MovieSuppliers.SupplierId
```

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Query #5

How many movies in the inventory does each supplier supply?

```
SELECT Suppliers.SupplierName, COUNT( DISTINCT MovieID)
FROM Suppliers, MovieSupplier, Inventory
WHERE Suppliers.SupplierID = MovieSupplier.SupplierID
AND MovieSupplier.MovieID = Inventory.MovieID
GROUP BY Suppliers.SupplierName
```

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Query #6

Which suppliers supply all the movies in the inventory?

```
SELECT Suppliers.SupplierName
FROM Suppliers, MovieSuppliers
WHERE MovieSuppliers.SupplierId == Supplier.SupplierId
AND COUNT(DISTINCT MovieSuppliers.MovieId) = (
        SELECT COUNT(DISTINCT Inventory.MovieId)
        FROM Inventory
)
GROUP BY MovieSuppliers.SupplierId
```

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