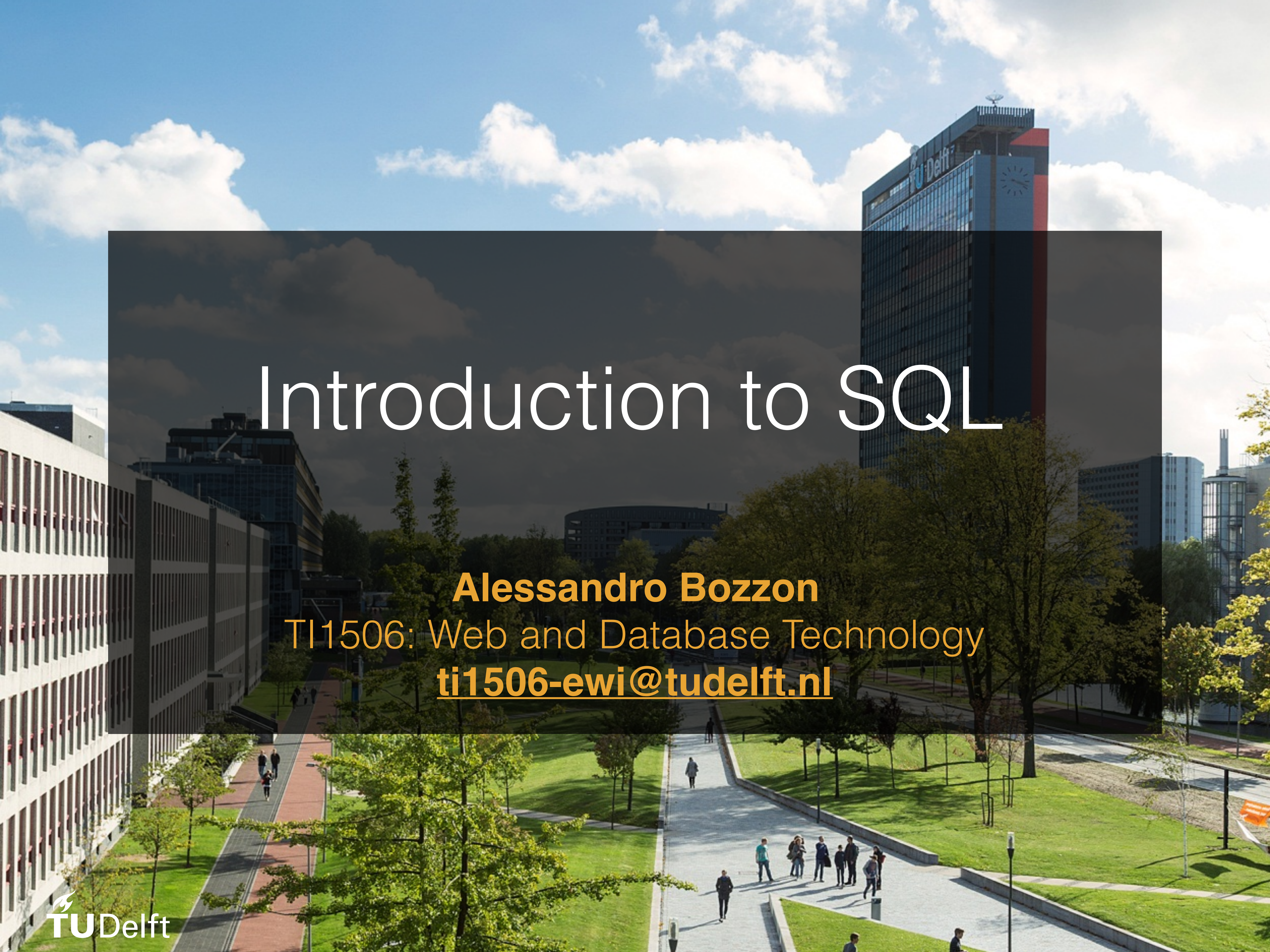

Introduction to SQL

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Strategy: Uniform

QI

1:00

Which of the following statements best describe the result set produced by following SQL query?

```
SELECT r1.actor_id, r2.actor_id
FROM imdb.movies AS m1, imdb.movies AS m2,
     imdb.roles AS r1, imdb.roles AS r2
WHERE m1.name LIKE "A%" and m2.name LIKE "A%"
     AND r1.movie_id = m1.id
     AND r2.movie_id = m2.id
```

A. The names of all the pairs of Actors that played in a Movie having a title that contains the letter A.

B. The permutations of the names of all Actors that played in a Movie having a title that contains the letter A.

C. The names of all Actors, returned 2 at a time, that played in a Movie having a title that starts with the letter A.

D. The permutations of all Actors that played in a movie having a title that starts with the letter A.

Q2

2:00

Which queries return the same result set as the following query?

```
SELECT DISTINCT b.actor_id
FROM imdb.roles AS a,
      imdb.roles AS b,
      imdb.movies AS movies
WHERE a.movie_id = movies.id
  AND b.movie_id = movies.id
  AND a.actor_id <> b.actor_id
  AND a.actor_id = 393411
```

1

```
SELECT DISTINCT b.actor_id FROM imdb.roles AS a INNER JOIN
imdb.movies AS movies ON a.movie_id = movies.id WHERE a.actor_id
<> b.actor_id AND a.actor_id = 393411
```

2

```
SELECT DISTINCT b.actor_id FROM imdb.roles AS a INNER JOIN
imdb.movies AS movies ON a.movie_id = movies.id INNER JOIN
imdb.roles AS b ON b.movie_id = movies.id WHERE a.actor_id =
393411
```

3

```
SELECT DISTINCT b.actor_id FROM imdb.roles AS a INNER JOIN
imdb.movies AS movies ON a.movie_id = movies.id INNER JOIN
imdb.roles AS b ON b.movie_id = movies.id WHERE a.actor_id <>
b.actor_id AND a.actor_id = 393411
```

4

```
SELECT DISTINCT b.actor_id FROM imdb.roles AS a LEFT JOIN
imdb.movies AS movies ON a.movie_id = movies.id RIGHT JOIN
imdb.roles AS b ON b.movie_id = movies.id WHERE a.actor_id <>
b.actor_id AND a.actor_id = 393411
```

Q3

1:00

Are these 2 queries on the IMDB database returning the same result?

```
SELECT COUNT(DISTINCT id)
FROM imdb.movies
```

```
SELECT COUNT(DISTINCT movie_id)
FROM imdb.roles
```

A. Yes

B. No

Q4

0:41

Are these 2 queries on the IMDB database returning the same result?

```
SELECT AVG(rank)
FROM imdb.movies
```

```
SELECT SUM(rank)/COUNT(id)
FROM imdb.movies
WHERE rank IS NOT NULL
```

A. Yes
B. No

Q5

2:01

Run the following query on your machine. Discuss with another student, and then report: [open question]

1) What is the meaning of the query?
2) Why does it take so long to execute?

```
SELECT count(*) as total
FROM imdb.roles
GROUP BY movie_id, actor_id
ORDER BY total DESC
```

Q6

1:00

Which answer reports the correct output of the following SQL query?

```
SELECT movie_id, COUNT(actor_id)
FROM imdb.roles
GROUP BY movie_id
HAVING actor_id = 2
```

A. {NULL}
B. {<280088, 1>,<396232,1>}
C. {<2>}
D. The database returns an error because the query is not correct

Q7

1:00

Which of the following SQL statements best defines the ‘actors’ table in the IMDB database?

1

```
CREATE TABLE `actors` (
  `id` int(11),
  `first_name` varchar(100), `last_name` varchar(100),
  `gender` char(1) default NULL,
   ‘primary_key’ int(11) NOT NULL default ‘0')
```

2

```
CREATE TABLE `actors` (
  `id` int(11) NOT NULL default ‘0',
  `first_name` varchar(100) default NULL,
  `last_name` varchar(100) default NULL,
  `gender` char(1) default NULL )
```

3

```
CREATE TABLE `actors` (
  `id` varchar(100) NOT NULL default ‘0',
  `first_name` string default NULL,
  `last_name` string default NULL,
  `gender` [M,F] default NULL )
```

Q8

1:30

Consider the IMDB database schema

Which of the attributes of the ‘Movies’ and ‘Roles’ tables could be defined as ‘Unique’?

[1] Table “movies”, attribute ‘name’
[2] Table “roles” , attribute ‘movie_id’
[3] Table “roles” , attribute ‘actor_id’

Q9

1:30

Consider the following database schema

AutoWorkshop (WorkshopName, Address, Director)
Repair (WorkshopName, ReceiptNumber, AutoLicense, Type, Date, Cost)
Auto (AutoLicense, Owner)

Which of the following statement(s) is/are correct?

[1] The same Auto cannot be repaired multiple times by the same AutoWorkshop on the same day

[2] Two AutoWorkshops can perform a repair having the same ReceiptNumber.

[3] Two identical Repairs performed by the same AutoWorkshop must have the same cost.

[4] The Director of an AutoWorkshop can be the Owner of an Auto repaired in his/her own AutoWorkshop.

Q10

1:30

Consider the following database schema and SQL statements

AutoWorkshop (WorkshopName, Address, Director)
Repair (WorkshopName, ReceiptNumber, AutoLicense, Type, Date, Cost)
Auto (AutoLicense, Owner)

[1]INSERT INTO Auto (AutoLicense, Owner) VALUES (‘XX-999-XX’, NULL)
[2]UPDATE Auto SET Auto.AutoLicense = ‘YY-1111-YY’
[3]DROP TABLE AutoWorkshop
[4]INSERT INTO Repair (WorkshopName, ReceiptNumber) VALUES (‘DelftAutoRepair’, ‘100’)

Which of the above statements CAN cause the violation of an integrity constraint specified in the relational schema?