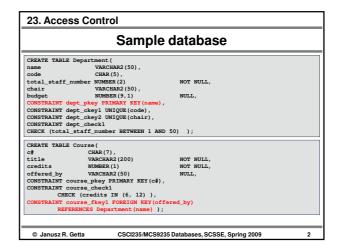
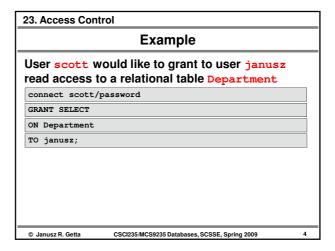
## Access Control Access Control



GRANT statement

GRANT statement is applied by a user to authorise various kinds of access to his/her relational tables/views by another user or class of users

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Example

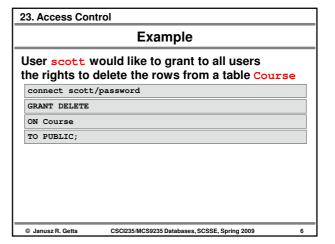
User janusz would like to grant to user scott full access to a view Course\_view

connect janusz/password

GRANT ALL

ON Course\_view

TO scott;



```
Privileges

GRANT SELECT ON Department TO janusz;
GRANT ALL ON Course_view TO scott;
GRANT DELETE ON Course TO PUBLIC;
GRANT UPDATE ON qqq TO scott WITH GRANT OPTION;

SELECT

DELETE

INSERT

UPDATE < list of columns>

REFERENCES < list of columns>

ALL

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```

Objects

GRANT SELECT ON Department TO janusz;
GRANT ALL ON Course view TO scott;
GRANT DELETE ON Course TO PUBLIC;
GRANT UPDATE ON qqq TO scott WITH GRANT OPTION;
Relational tables
Views

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GRANT SELECT ON Department TO janusz;
GRANT ALL ON Course\_view TO scott;
GRANT DELETE ON Course TO PUBLIC;
GRANT UPDATE ON qqq TO scott WITH GRANT OPTION;
Users
PUBLIC

GRANT SELECT ON Department TO janusz;
GRANT ALL ON Course\_view TO scott;
GRANT DELETE ON Course TO PUBLIC;
GRANT UPDATE ON qqq TO scott WITH GRANT OPTION;
WITH GRANT OPTION

Examples

User scott grants SELECT access rights on Course table to user janusz

GRANT SELECT ON Course TO janusz;

User janusz selects from Course table

SELECT \*
FROM scott.Course;

To eliminate a reference to scott user janusz creates a synonym

CREATE SYNONYM SCourse FOR scott.Course;

SELECT \*
FROM SCourse;

## Examples User janusz uses a synonym Scourse to selects from Course table SELECT \* FROM SCourse; User janusz grants UPDATE access rights on the columns name, budget from Department table to user scott GRANT UPDATE (name, budget) ON Department TO scott; User scott updates attribute budget UPDATE janusz.Department SET budget = budget + 100;

```
Examples

User scott grants ALL access rights to a relational table Student to everyone

GRANT ALL ON Student to PUBLIC;

Now, anyone can delete a row from Students table

DELETE FROM scott.Student
WHERE s# = 6509353;
```

```
Examples

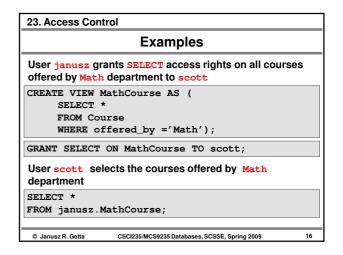
User scott grants the reference access rights on a relational table Department to janusz

GRANT REFERENCES (name) ON Department to janusz;

Then, user janusz is allowed to reference column dname when creating a relational table BigDepts

CREATE TABLE BigDepts (
dname VARCHAR (30) NOT NULL,
... ... ...,
)

CONSTRAINT BigDepts_fkey FOREIGN KEY (dname)
    REFERENCES scott.Department (name);
```



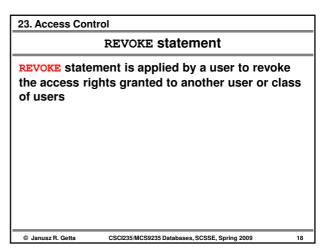
```
Examples

User janusz grants SELECT with grant option on a relational table Course to scott

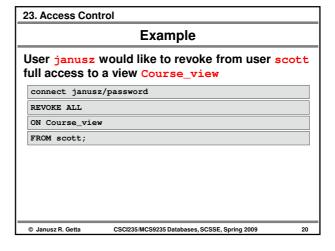
GRANT SELECT ON Course to scott
WITH GRANT OPTION;

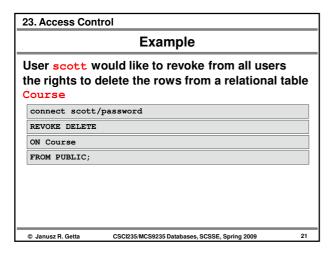
User scott is allowed to grant SELECT access rights on a table Course to user joan

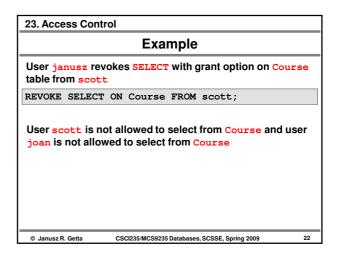
GRANT SELECT ON janusz.Course TO joan;
```



## Example User scott would like to revoke from user janusz read access to a relational table Department connect scott/password REVOKE SELECT ON Department FROM janusz;







## References Elmasri R., Navathe S. B., Database Systems, chapter 25.2 Ramakrishnan R., Gehrke J., Database Management Systems, chapters 21.1, 21.2, 21.3 https://sai.uow.edu.au/oradocs/ SQL Reference, GRANT statement https://sai.uow.edu.au/oradocs/ SQL Reference, REVOKE statement