



Advanced Database

Lecture 3

EMPLOYEE

Fname	Minit	Lname	<u>Ssn</u>	Bdate	Address	Sex	Salary	Super_ssn	Dno
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DEPARTMENT

Dname	<u>Dnumber</u>	Mgr_ssn	Mgr_start_date
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DEPT_LOCATIONS

<u>Dnumber</u>	<u>Dlocation</u>
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PROJECT

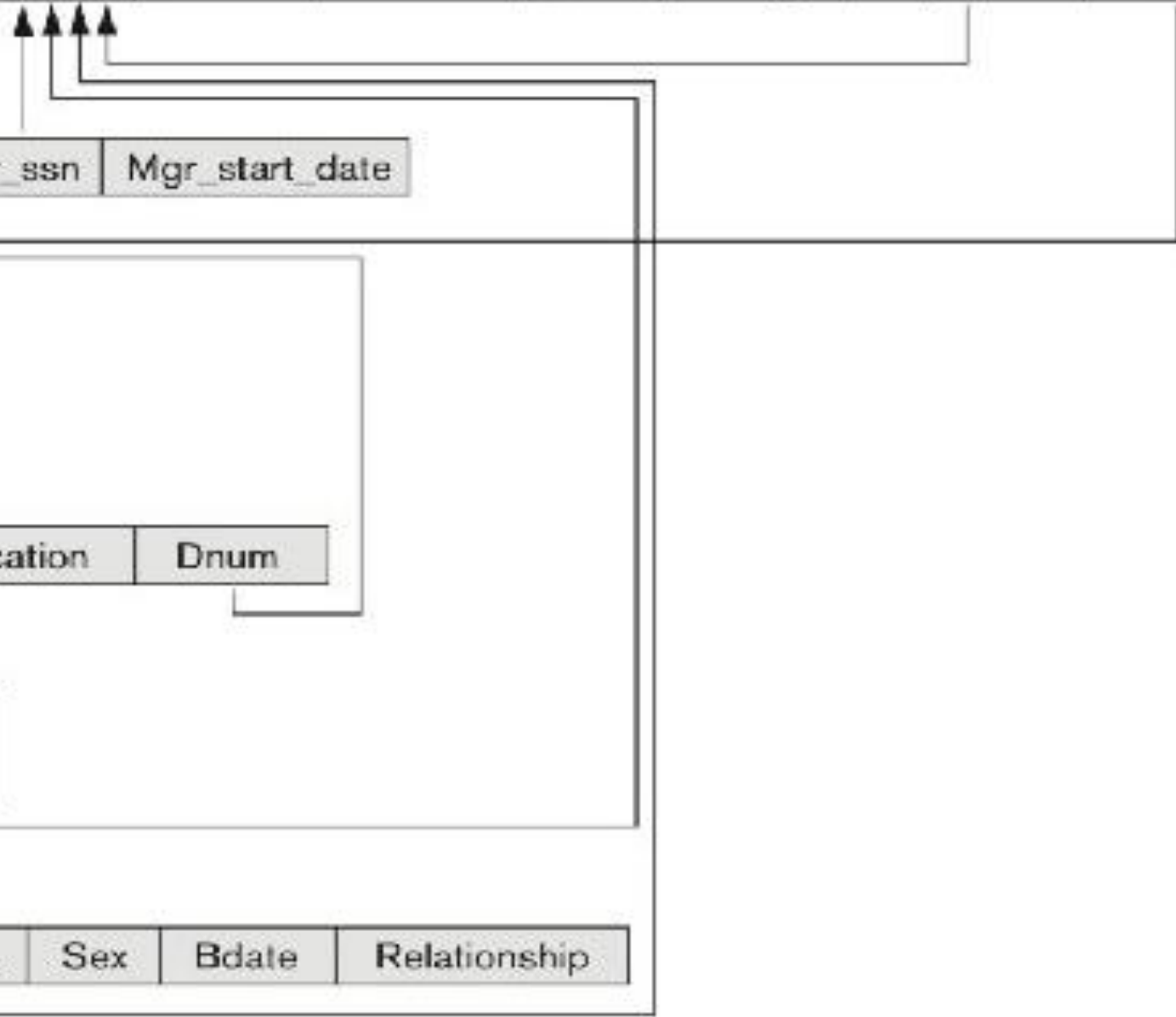
Pname	<u>Pnumber</u>	Plocation	Dnum
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WORKS_ON

<u>Essn</u>	<u>Pno</u>	Hours
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DEPENDENT

<u>Essn</u>	<u>Dependent_name</u>	Sex	Bdate	Relationship
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Basic SQL Queries

➡ **Query 0. Retrieve the birth date and address of the employee(s) whose name is 'John B. Smith'.**

➡ **SELECT Bdate, Address**

➡ **FROM EMPLOYEE**

➡ **WHERE Fname='John' AND Minit='B' AND Lname='Smith';**

Basic SQL Queries

➤ For each employee, retrieve the employee's first and last name and the first and last name of his or her immediate supervisor.

```
➤ SELECT  E.Fname,  E.Lname,  S.Fname,  S.Lname  
➤ FROM    EMPLOYEE AS  E, EMPLOYEE AS  S  
➤ WHERE   E.Super_ssn=S.Ssn;
```

Basic SQL Queries

➤ Query 1. Retrieve the name and address of all employees who work for the 'Research' department.

➤ SELECT Fname, Lname, Address

➤ FROM EMPLOYEE, DEPARTMENT

➤ WHERE Dname='Research' AND Dnumber=Dno;

Basic SQL Queries

➤ **Query 2. For every project located in 'Stafford', list the project number, the controlling department number, and the department manager's last name, address, and birth date.**

➤ **SELECT Pnumber, Dnum, Lname, Address, Bdate**

➤ **FROM PROJECT, DEPARTMENT, EMPLOYEE**

➤ **WHERE Dnum=Dnumber AND Mgr_ssn=Ssn AND
Plocation='Stafford';**

Basic SQL Queries

Unspecified WHERE Clause

➤ Queries 9 and 10. Select all EMPLOYEE Ssns (Q9) and all combinations of EMPLOYEE Ssn and DEPARTMENT Dname (Q10) in the database.

➤ Q9: SELECT Ssn

➤ FROM EMPLOYEE;

➤ Q10: SELECT Ssn, Dname

➤ FROM EMPLOYEE, DEPARTMENT;

Basic SQL Queries

➤ **Query 11. Retrieve the salary of every employee (Q11) and all distinct salary values (Q11A).**

➤ **Q11: SELECT ALL Salary**

➤ **FROM EMPLOYEE;**

➤ **Q11A: SELECT DISTINCT Salary**

➤ **FROM EMPLOYEE;**

Basic SQL Queries

➤ **Query 4. Make a list of all project numbers for projects that involve an employee whose last name is 'Smith', either as a worker or as a manager of the department that controls the project.**

```
(SELECT DISTINCT Pnumber
FROM PROJECT, DEPARTMENT, EMPLOYEE
WHERE Dnum=Dnumber AND Mgr_ssn=Ssn AND Lname='Smith')
UNION
( SELECT DISTINCT Pnumber
FROM PROJECT, WORKS_ON, EMPLOYEE
WHERE Pnumber=Pno AND Essn=Ssn AND Lname='Smith' );
```

Basic SQL Queries

➡ **Query 12. Retrieve all employees whose address is in Houston, Texas.**

```
SELECT Fname, Lname
```

```
FROM EMPLOYEE
```

```
WHERE Address LIKE '%Houston,TX%';
```

Basic SQL Queries

Query 12A. Find all employees who were born during the 1950s.

SELECT Fname, Lname

➤ FROM EMPLOYEE

➤ WHERE Bdate LIKE '__ 5 _ _ _ _ _ _ _';