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Discussion 12: Database Joins

SI 206: Data-Oriented Programming

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School of Information
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Deadlines

- HW7 due this Friday (12/01)

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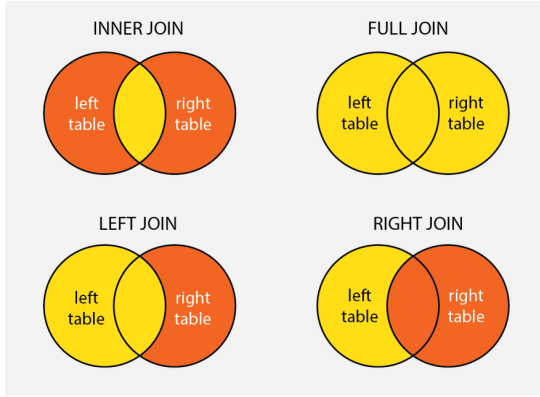
JOIN

- Join data cross different tables in the database
- Build the connections: use foreign keys (usually integers)
- We will focus on inner joins: returns records that have matching values in both tables. If there is no matching row, no results will be returned.



JOIN Syntax

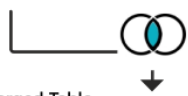

```sql
SELECT *
FROM left_table
JOIN right_table
ON left_table.CountryID = right_table.ID
```

Left Table

Date	CountryID	Units
1/1/2020	1	40
1/2/2020	1	25
1/3/2020	3	30
1/4/2020	2	35

Right Table

ID	Country
3	Panama
4	Spain



Merged Table

Date	CountryID	Units	Country
1/3/2020	3	30	Panama

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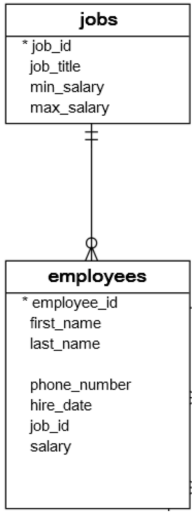
Practice Problems



Task

1. `create_employee_table()`: create 'employees' table `employee_id, first_name, last_name, job_id, hire_date , salary`
2. `add_employee()`: read JSON file contains employee's information and insert them into 'employees' table
3. `job_and_hire_date()`: return the earliest hired job title
4. `problematic_salary()`: Return a list of tuples of employee's first name and last name, whose salary is lower than min or higher than max

Extra Task: Visualize Problematic data

Task

- Draw a scatter plot, whose x-axis is the job title, y-axis is the salary.
- Each data point shows the salary of one employee.
- Then use red "x" to show the upper and lower bound of salary for each job.