인문정보 데이터베이스

제6강: SQL 실습(2)-JOIN

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1. 다중 테이블의 데이터 조회: JOIN

2. JOIN 문의 종류와 활용

3. 다중 테이블의 데이터 조회

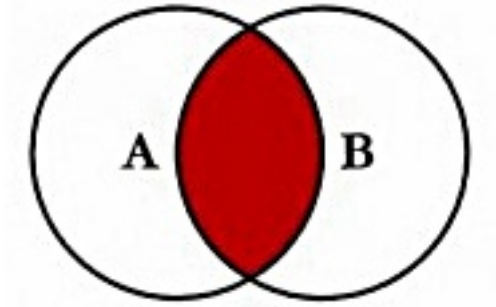
JOIN 문

❖ JOIN 문:

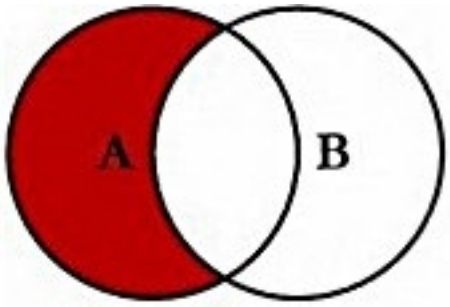
- 두 개 이상의 테이블로부터 하나의 결과 집합을 추출하는 기능.
- 두 테이블이 공동으로 가지고 있는 정보(열, row)를 이용.
- An SQL JOIN clause is used to combine rows from two or more tables, based on a common field between them.

JOIN 문의 결과 집합

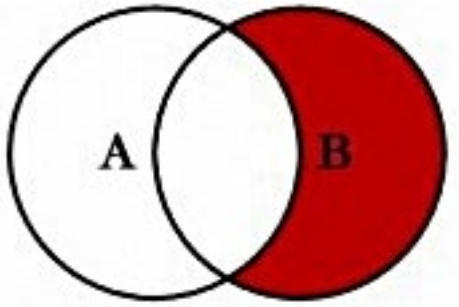
❖ **JOIN 문으로 얻을 수 있는 결과 집합의 종류**



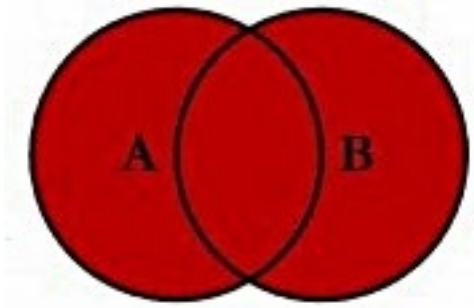
INNER JOIN

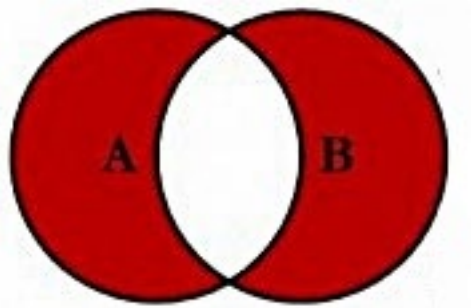


LEFT OUTER JOIN



RIGHT OUTER JOIN





FULL OUTER JOIN

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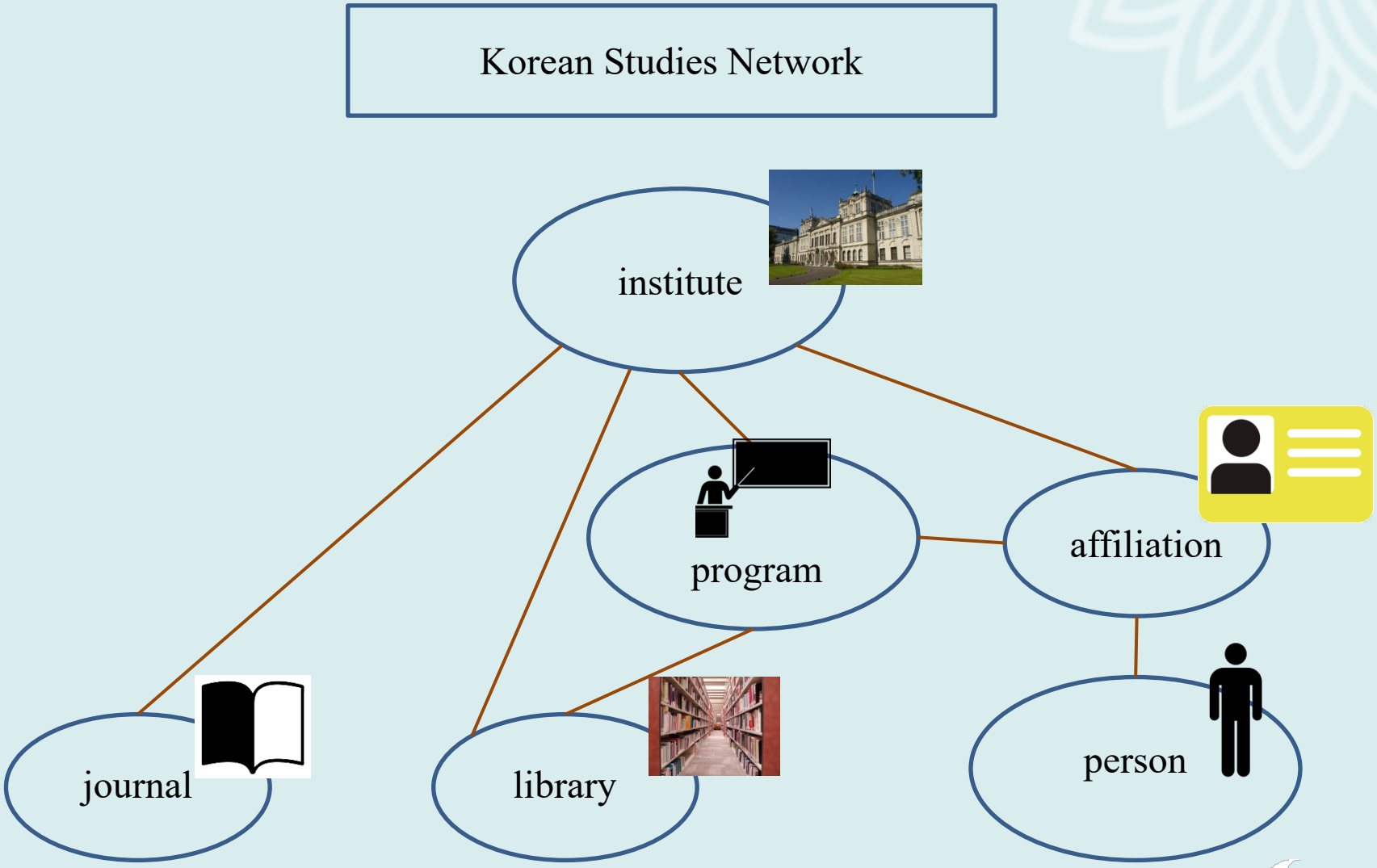
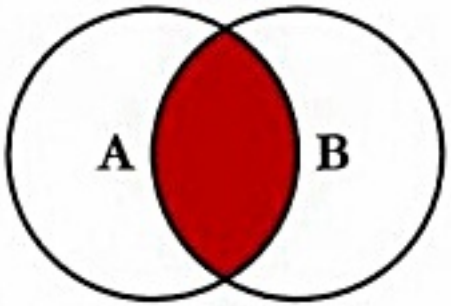
Data Table 사이의 관계



INNER JOIN

❖ INNER JOIN:

```
select [열] from [테이블 A]
    inner join [테이블 B]
    on A.key = B.key
```

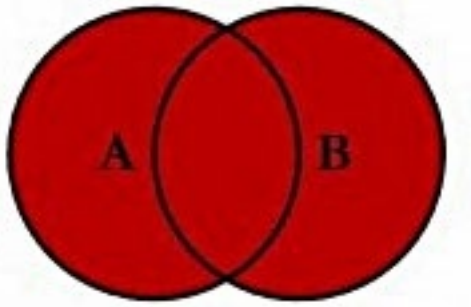


- select program_id, institute_id, program_name, phd, homepage from program where phd=1
- select institute_id, institute_name from institute
- select program_id, institute_name, program_name, phd, homepage
  from program
  inner join institute
  on program.institute_id = institute.institute_id
  where phd=1

FULL OUTER JOIN(1)

❖ **FULL OUTER JOIN:**

```
select [열] from [테이블 A]
    full outer join [테이블 B]
    on A.key = B.key
```

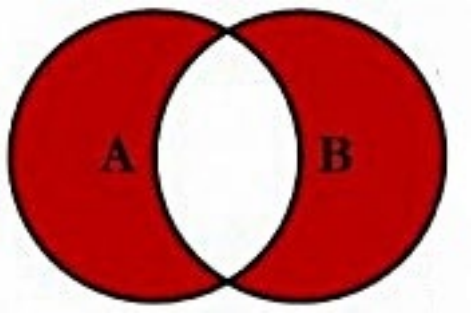


- select person_name, address from person
- select person_name, institute_id, title from affiliation
- select person.person_name, affiliation.person_name, institute_id, title, address
  from person
  inner join affiliation
  on person.person_name = affiliation.person_name
- select person.person_name, affiliation.person_name, institute_id, title, address
  from person
  full outer join affiliation
  on person.person_name = affiliation.person_name

FULL OUTER JOIN(2)

❖ FULL OUTER JOIN:

```
select [열] from [테이블 A]
    full outer join [테이블 B]
    on A.key = B.key
    where A.key is null or B.key is null
```

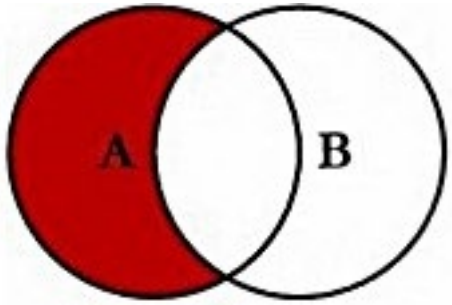


-
```
select person.person_name, affiliation.person_name, institute_id, title, address
        from person
        inner join affiliation
        on person.person_name = affiliation.person_name
```
-
```
select person.person_name, affiliation.person_name, institute_id, title, address
        from person
        full outer join affiliation
        on person.person_name = affiliation.person_name
        where person.person_name is null or affiliation.person_name is null
```

LEFT OUTER JOIN

❖ LEFT OUTER JOIN:

```
select [열] from [테이블 A]
    left join [테이블 B]
    on A.key = B.key
    where B.key is null
```

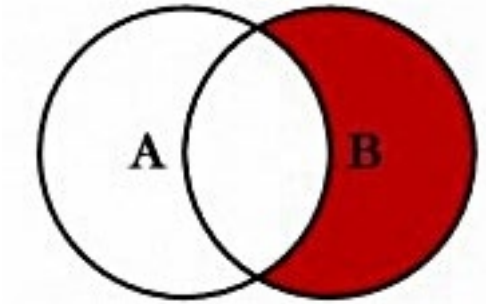


- select person_name from person
- select person_name title from affiliation
- select person.person_name, affiliation.person_name
  from person
  left join affiliation
  on person.person_name = affiliation.person_name
  where affiliation.person_name is null

RIGHT OUTER JOIN

❖ RIGHT OUTER JOIN:

```
select [열] from [테이블 A]
    right join [테이블 B]
    on A.key = B.key
    where A.key is null
```



- select person_name from person
- select person_name title from affiliation
- select person.person_name, affiliation.person_name
  from person
  right join affiliation
  on person.person_name = affiliation.person_name
  where person.person_name is null

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다중 테이블 JOIN

❖ 3개 테이블의 데이터 조회

- 교육기관 중 한국학 프로그램과 한국학 도서관이 있는 기관의 institute_id, institute_name, program_name, library_name

- select * from institute
- select * from program
- select * from library

-
```
select institute.institute_id, institute_name, program_name, library_name
  from institute
  join program
  on institute.institute_id = program.institute_id
  join library
  on institute.institute_id = library.institute_id
  where institute.type='EDU'
```

다중 테이블 JOIN

❖ 4개 테이블의 데이터 조회

- 아시아 지역에서 한국학 저널을 간행하는 기관의 institute_id, institute_name, program_name, library_name, journal_name

-
```
select institute.institute_id, institute_name, program_name, library_name,
journal_name
   from institute
   join program
   on institute.institute_id = program.institute_id
   join library
   on institute.institute_id = library.institute_id
   join journal
   on institute.institute_id = journal.institute_id
   where institute.zone = 4
```

다중 테이블 JOIN

❖ 4개 테이블의 데이터 조회

- 북미 지역에서 한국학 프로그램이 있는 기관의 zone, institute_name, program_name, 그 프로그램에 소속된 연구자의 person_name, 그 연구자의 주소가 있는 경우 그의 address

-
```
select zone, institute_name, program_name, affiliation.person_name,
person.address
  from institute
  join program
  on institute.institute_id = program.institute_id
  join affiliation
  on program.program_id = affiliation.program_id
  left join person
  on affiliation.person_name = person.person_name
  where institute.zone = 5
```