



# BIL3203 – DATABASE MANAGEMENT



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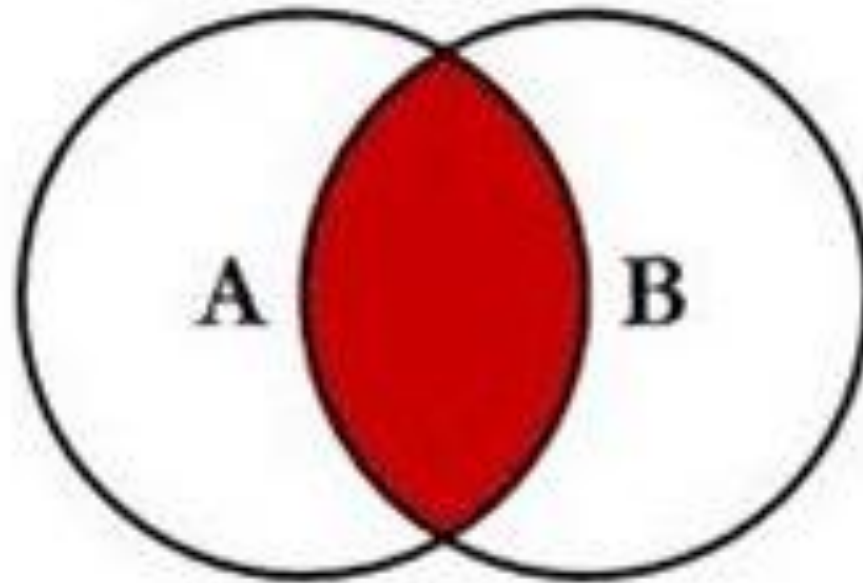
# Inner/Outer JOIN

# INNER JOIN

- BeyazEsysa (urunno, modeli, markakodu, turkodu, fiyati)
- Türler (turkodu, turadi, aciklama) (Ex: 01-Buzdolabi)
- Markalar (markakodu, marka) (Ex: 01-Arçelik, 02-Beko)
- Her markanın kaç ürünü var?
- ```
SELECT marka,count(urunno) as Adet
FROM BeyazEsysa b, Markalar m
WHERE b.markakodu = m.markakodu
GROUP BY marka
```
- ```
SELECT marka,count(urunno) as Adet
FROM Markalar m
INNER JOIN BeyazEsysa b
ON b.markakodu = m.markakodu
GROUP BY marka
```

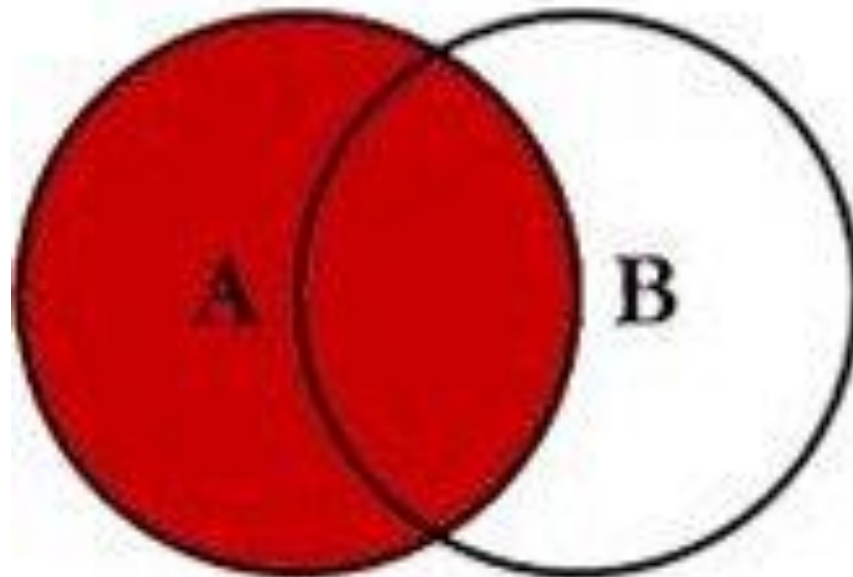
marka	Adet
Arçelik	6
Beko	5
Bosch	4

# SQL – INNER JOIN



```
SELECT <select_list>  
FROM TableA A  
INNER JOIN TableB B  
ON A.Key = B.Key
```

# OUTER JOIN – LEFT OUTER JOIN



```
SELECT <select_list>  
FROM TableA A  
LEFT JOIN TableB B  
ON A.Key = B.Key
```

# OUTER JOIN – LEFT JOIN

- BeyazEsva (urunno, modeli, markakodu, turkodu, fiyati)
- Türler (turkodu, turadi, aciklama) (Ex: 01-Buzdolabi)
- Markalar (markakodu, marka) (Ex: 01-Arçelik, 02-Beko)
- Her markanın kaç ürünü var?
- SELECT marka,count(urunno) as Adet  
FROM Markalar m  
**INNER JOIN** BeyazEsva b  
**ON** b.markakodu = m.markakodu  
GROUP BY marka
- SELECT marka,count(urunno) as Adet  
FROM Markalar m  
**LEFT OUTER JOIN** BeyazEsva b  
**ON** b.markakodu = m.markakodu  
GROUP BY marka

marka	Adet
Arçelik	6
Beko	5
Bosch	4
Çin Malı	0
Regal	0
Tefal	0

# LEFT OUTER JOIN

- Bolum(BolumNo, BolumAdi)
- Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)
- SELECT Ogrenciadi, BolumAdi  
FROM Ogrenci, Bolum  
WHERE Ogrenci.BolumNo=Bolum.BolumNo

BolumNo	BolumAdi
1	İstatistik
2	Bilgisayar Bilimleri
3	Matematik
4	Fizik
5	Kimya
6	Biyoloji

OgrenciAdi	BolumAdi
Ali Veli	İstatistik
Ayşe Fatma	İstatistik
Hasan Hüseyin	İstatistik
Ahmet Mehmet	Bilgisayar Bilimleri
Leyla Nejla	Bilgisayar Bilimleri
Murat Fırat	Matematik
Jale Lale	Fizik

# LEFT OUTER JOIN

- Bolum(BolumNo, BolumAdi)
- Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)
- SELECT Ogrenciadi, BolumAdi FROM Ogrenci  
INNER JOIN Bolum  
ON Ogrenci.BolumNo=Bolum.BolumNo

BolumNo	BolumAdi
1	İstatistik
2	Bilgisayar Bilimleri
3	Matematik
4	Fizik
5	Kimya
6	Biyoloji

OgrenciAdi	BolumAdi
Ali Veli	İstatistik
Ayşe Fatma	İstatistik
Hasan Hüseyin	İstatistik
Ahmet Mehmet	Bilgisayar Bilimleri
Leyla Nejla	Bilgisayar Bilimleri
Murat Fırat	Matematik
Jale Lale	Fizik



# LEFT OUTER JOIN

- Bolum(BolumNo, BolumAdi)
- Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)
- SELECT Ogrenciadi, BolumAdi FROM Ogrenci

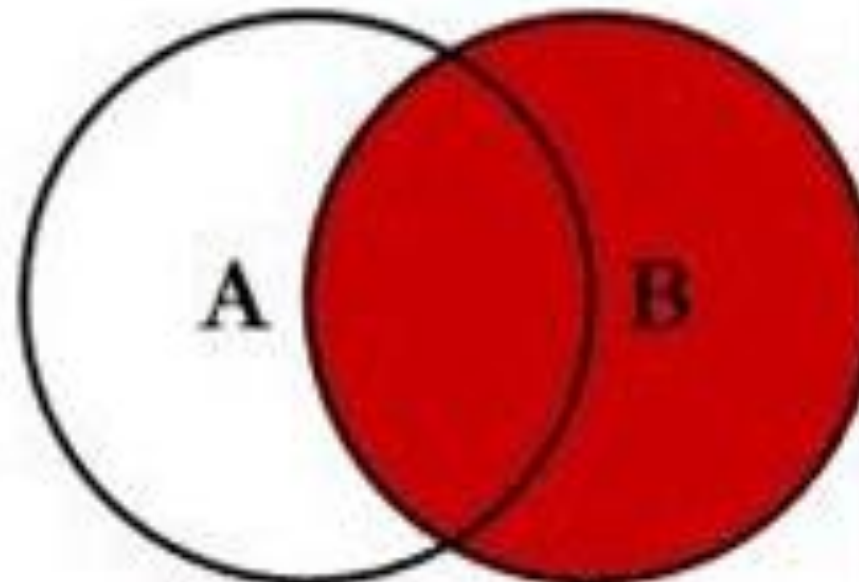
**LEFT OUTER JOIN** Bolum

ON Ogrenci.BolumNo=Bolum.BolumNo

BolumNo	BolumAdi
1	İstatistik
2	Bilgisayar Bilimleri
3	Matematik
4	Fizik
5	Kimya
6	Biyoloji

OgrenciAdi	BolumAdi
Ali Veli	İstatistik
Ayşe Fatma	İstatistik
Hasan Hüseyin	İstatistik
Ahmet Mehmet	Bilgisayar Bilimleri
Leyla Nejla	Bilgisayar Bilimleri
Murat Fırat	Matematik
Jale Lale	Fizik
Osman Orhan	

# OUTER JOIN – RIGHT OUTER JOIN



```
SELECT <select_list>  
FROM TableA A  
RIGHT JOIN TableB B  
ON A.Key = B.Key
```

# RIGHT OUTER JOIN

- Bolum(BolumNo, BolumAdi)
- Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)
- SELECT Ogrenciadi, BolumAdi FROM Ogrenci

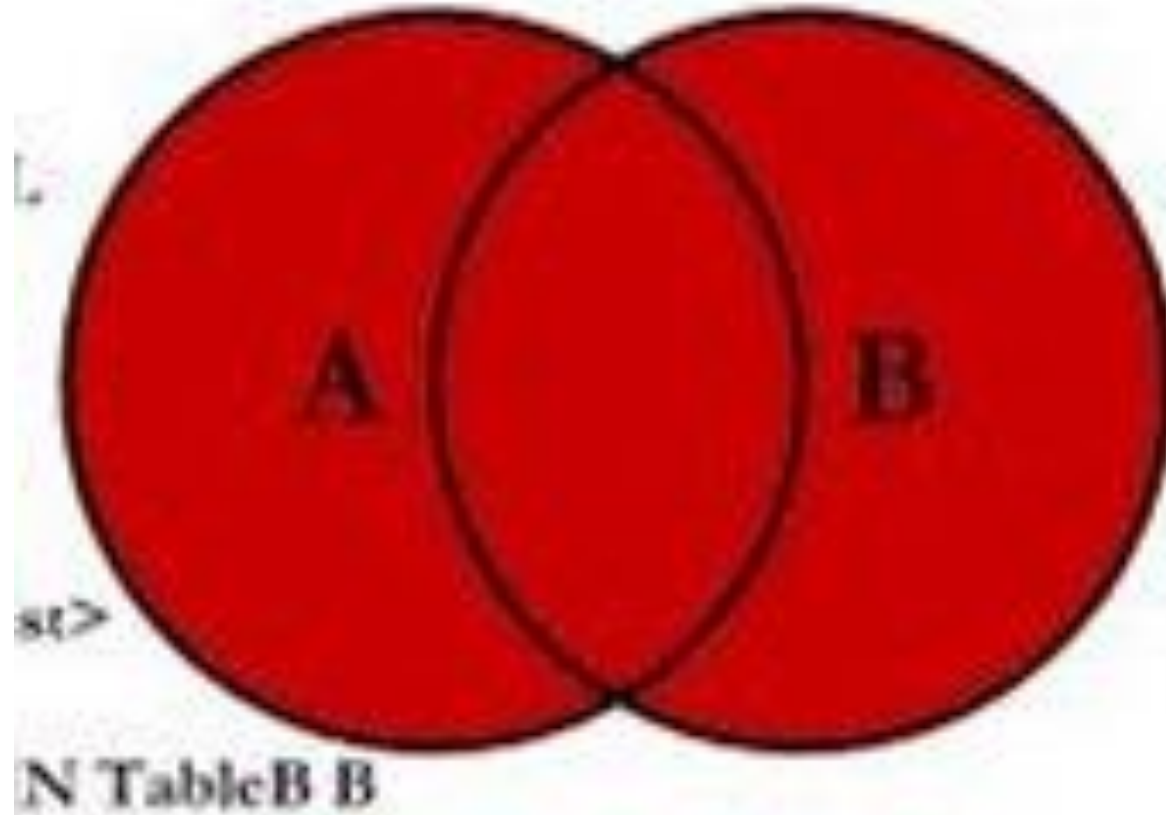
**RIGHT OUTER** JOIN Bolum

ON Ogrenci.BolumNo=Bolum.BolumNo

BolumNo	BolumAdi
1	İstatistik
2	Bilgisayar Bilimleri
3	Matematik
4	Fizik
5	Kimya
6	Biyoloji

OgrenciAdi	BolumAdi
Ali Veli	İstatistik
Ayşe Fatma	İstatistik
Hasan Hüseyin	İstatistik
Ahmet Mehmet	Bilgisayar Bilimleri
Leyla Nejla	Bilgisayar Bilimleri
Murat Fırat	Matematik
Jale Lale	Fizik
	Kimya
	Biyoloji

# OUTER JOIN – FULL OUTER JOIN



# FULL OUTER JOIN

- Bolum(BolumNo, BolumAdi)
- Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)
- SELECT Ogrenciadi, BolumAdi FROM Ogrenci

**FULL OUTER JOIN** Bolum

ON Ogrenci.BolumNo=Bolum.BolumNo

BolumNo	BolumAdi
1	İstatistik
2	Bilgisayar Bilimleri
3	Matematik
4	Fizik
5	Kimya

OgrenciAdi	BolumAdi
Ali Veli	İstatistik
Ayşe Fatma	İstatistik
Hasan Hüseyin	İstatistik
Ahmet Mehmet	Bilgisayar Bilimleri
Leyla Nejla	Bilgisayar Bilimleri
Murat Fırat	Matematik
Jale Lale	Fizik
Osman Orhan	
	Kimya
	Biyoloji

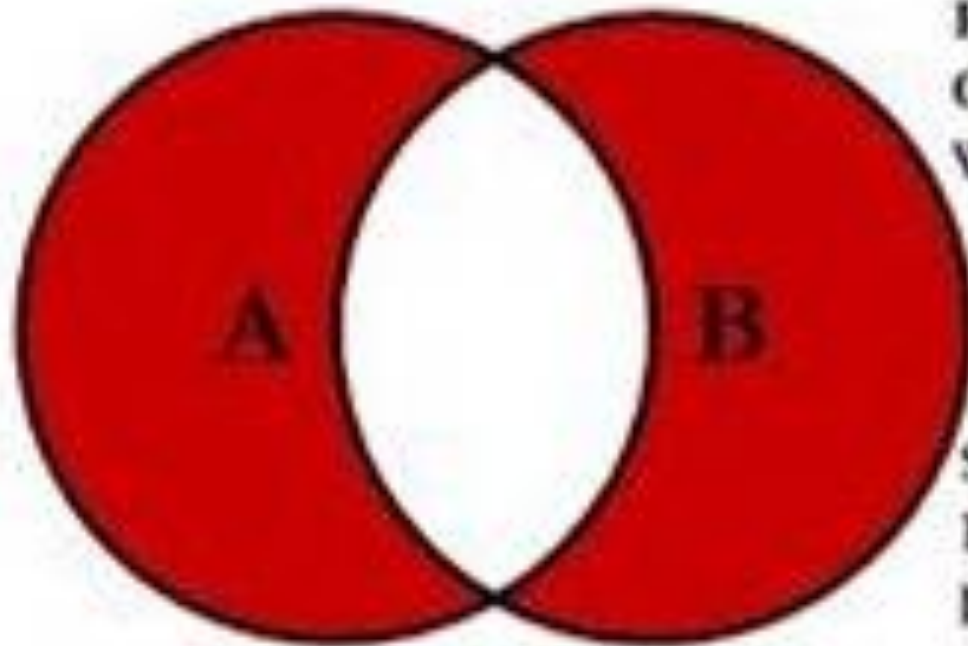
# FULL OUTER JOIN

- Bolum(BolumNo, BolumAdi)
- Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)
- SELECT Ogrenciadi, BolumAdi FROM Ogrenci  
LEFT OUTER JOIN Bolum  
ON Ogrenci.BolumNo=Bolum.BolumNo

## UNION

```
SELECT Ogrenciadi, BolumAdi FROM Ogrenci  
RIGHT OUTER JOIN Bolum  
ON Ogrenci.BolumNo=Bolum.BolumNo
```

# OUTER JOIN – FULL OUTER JOIN



```
RIGHT JOIN TableB B  
ON A.Key = B.Key  
WHERE A.Key IS NULL.
```

```
SELECT <select_list>  
FROM TableA A  
FULL OUTER JOIN TableB B  
ON A.Key = B.Key  
WHERE A.Key IS NULL.
```

# FULL OUTER JOIN

- Bolum(BolumNo, BolumAdi)
- Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)
- SELECT Ogrenciadi, BolumAdi FROM Ogrenci  
FULL OUTER JOIN Bolum  
ON Ogrenci.BolumNo=Bolum.BolumNo  
WHERE Ogrenci.ogrencino IS Null  
OR Bolum.BolumNo IS Null

Ogrenciadi	BolumAdi
	Kimya
Osman Orhan	



# FULL OUTER JOIN

- `Bolum(BolumNo, BolumAdi)`
- `Ogrenci(BolumNo, OgrenciNo, OgrenciAdi)`
- `SELECT Ogrenciadi, BolumAdi FROM Ogrenci  
LEFT OUTER JOIN Bolum  
ON Ogrenci.BolumNo=Bolum.BolumNo  
WHERE Bolum.bolumno is Null`

## UNION

```
SELECT Ogrenciadi, BolumAdi FROM Ogrenci  
RIGHT OUTER JOIN Bolum  
ON Ogrenci.BolumNo=Bolum.BolumNo  
WHERE OgrenciNo is Null
```

# JOIN

