



SQL language

Queries in SQL

Exercise n. 1

MAGAZINE (MId, MName, Publisher)

ARTICLE (AId, Title, Topic, MId)

- ⊃ Find the names of the magazines that have never published any article about motorcycles

Set of data to be excluded: Set of magazines that published at least an article on Motorcycle topic

Exercise n. 1

MAGAZINE (MId, MName, Publisher)

ARTICLE (AId, Title, Topic, MId)

- ⇒ Find the names of the magazines that have never published any article about motorcycles

Set of data to be excluded: Set of magazines that published at least an article on Motorcycle topic

```
SELECT MName
FROM MAGAZINE
WHERE MId NOT IN (SELECT MId
                  FROM ARTICLE
                  WHERE Topic= 'Motorcycle')
```

Exercise n. 2

MAGAZINE (MId, MName, Publisher)

ARTICLE (AId, Title, Topic, MId)

- Find the names of the magazines that have only ever published articles about motorcycles

Set to be excluded: Magazines with at least an article on a topic different than Motorcycle

Exercise n. 2

MAGAZINE (MId, MName, Publisher)
ARTICLE (AId, Title, Topic, MId)

- Find the names of the magazines that have only ever published articles about motorcycles

Set to be excluded: Magazines with at least an article on a topic different than Motorcycle

```
SELECT MName  
FROM MAGAZINE  
WHERE MId IN
```

```
(SELECT MId  
FROM ARTICLE  
WHERE TOPIC = 'Motorcycle')
```

```
AND MId NOT IN
```

```
(SELECT MId  
FROM ARTICLE  
WHERE TOPIC <> 'Motorcycle')
```

Exercise n. 2-Alternative solution

MAGAZINE (MId, MName, Publisher)
ARTICLE (AId, Title, Topic, MId)

- Find the names of the magazines that have only ever published articles about motorcycles

Set to be excluded: Magazines with at least an article on a topic different than Motorcycle

```
SELECT MName
FROM MAGAZINE M, ARTICLE A
WHERE M. MId =A. MId and M.MId NOT IN
      (SELECT MId
       FROM ARTICLE
       WHERE TOPIC <> 'Motorcycle')
```

Exercise n. 3

MAGAZINE (MId, MName, Publisher)

ARTICLE (AId, Title, Topic, MId)

- Find the names of the magazines that publish both articles about motorcycles and articles about cars.

Exercise n. 3

MAGAZINE (MId, MName, Publisher)

ARTICLE (AId, Title, Topic, MId)

- Find the names of the magazines that publish both articles about motorcycles and articles about cars.

```
SELECT MName
FROM MAGAZINE M
WHERE MId IN (SELECT MId
              FROM ARTICLE
              WHERE Topic ='Motorcycle')
AND MId IN (SELECT MId
            FROM ARTICLE
            WHERE Topic ='Car')
```


Exercise n. 3 –Alternative solution

MAGAZINE (MId, MName, Publisher)

ARTICLE (AId, Title, Topic, MId)

- Find the names of the magazines that publish both articles about motorcycles and articles about cars.

```
SELECT MName
FROM MAGAZINE M, ARTICLE A
WHERE M.MId=A.MID AND Topic='Motorcycle'
AND M.MId IN (SELECT MId
              FROM ARTICLE
              WHERE Topic ='Car')
```

Exercise n. 4

SAILOR (SId, SName, Expertise, DateofBirth)

BOOKING (SId, BId, Date)

BOAT(Bid, BName, Color)

- ⊃ Find the codes of the sailors who have never booked a red boat
Set to be excluded: set of sailors who booked a red boat

Exercise n. 4

SAILOR (SId, SName, Expertise, DateofBirth)

BOOKING (SId, BId, Date)

BOAT(Bid, BName, Color)

⇒ Find the codes of the sailors who have never booked a red boat

Set to be excluded: set of sailors who booked a red boat

```
SELECT SId
FROM SAILOR
WHERE SId NOT IN (SELECT SId
                  FROM BOOKING BK, BOAT BT
                  WHERE BK.BID= BT.BID AND Color ='Red')
```

Exercise n. 5

SAILOR (SId, SName, Expertise, DateofBirth)

BOOKING (SId, BId, Date)

BOAT(Bid, BName, Color)

- Find the codes and the names of the sailors who have booked at least a red boat and at least a green boat

Exercise n. 5

SAILOR (SId, SName, Expertise, DateofBirth)

BOOKING (SId, BId, Date)

BOAT(Bid, BName, Color)

- Find the codes and the names of the sailors who have booked at least a red boat and at least a green boat

```
SELECT S.SId, SName
FROM SAILOR
WHERE SId IN (SELECT SId
              FROM BOOKING BK, BOAT BT
              WHERE BK.BID=BT.BID AND Color ='Red' )
AND S.SId IN (SELECT SId
              FROM BOOKING BK1, BOAT BT1
              WHERE BK1.BId=BT1.BId and Color = 'green')
```

Exercise n. 5 – Alternative solution

SAILOR (SId, SName, Expertise, DateofBirth)

BOOKING (SId, BId, Date)

BOAT(Bid, BName, Color)

- Find the codes and the names of the sailors who have booked at least a red boat and at least a green boat

```
SELECT DISTINCT S.SId, SName
FROM BOOKING BK, SAILOR S, BOAT BT
WHERE BK.BId=BT.BId AND S.SId=BK.SId
      AND Color ='Red'
      AND S.SId IN (SELECT SId
                    FROM BOOKING BK1, BOAT BT1
                    WHERE BK1.BId=BT1.BId and Color = 'green')
```

Exercise n. 6

AIRCRAFT (AId, AName, MaximumRange)

CERTIFICATE (AId, PId)

PILOT(PId, PName, Salary)

- Σ Find the codes and the names of the pilots who are qualified to fly on at least two aircrafts that can cover distances greater than 5,000 km ($\text{MaximumRange} \geq 5,000$), and who are qualified to fly on a Boeing

Exercise n. 6 – Alternative solution

AIRCRAFT (AID, AName, MaximumRange)

CERTIFICATE (AID, PID)

PILOT(PID, PName, Salary)

- ∑ Find the codes and the names of the pilots who are qualified to fly on at least two aircrafts that can cover distances greater than 5,000 km (MaximumRange >= 5,000), and who are qualified to fly on a Boeing

```
SELECT PID, PName
FROM PILOT
WHERE PID IN (SELECT PID
              FROM AIRCRAFT A, CERTIFICATE C
              WHERE A.AID=C.AID AND MaximumRange >= 5,000
              GROUP BY P.PID
              HAVING COUNT(*) >=2)
AND PID IN (SELECT PID
            FROM AIRCRAFT A1, CERTIFICATE C1
            WHERE A1.Aid=C1.AID AND AName ='Boeing')
```


Exercise n. 6 – Alternative solution

AIRCRAFT (AId, AName, MaximumRange)

CERTIFICATE (AId, PIId)

PILOT(PIId, PName, Salary)

- ∑ Find the codes and the names of the pilots who are qualified to fly on at least two aircrafts that can cover distances greater than 5,000 km (MaximumRange >= 5,000), and who are qualified to fly on a Boeing

```
SELECT P.PID, PName
FROM AIRCRAFT A, CERTIFICATE C, PILOT P
WHERE A.AID=C.AID AND C.PID=P.PID
AND MaximumRange >= 5,000
AND P.PID IN (SELECT PID
              FROM AIRCRAFT A1, CERTIFICATE C1
              WHERE A1.AID=C1.AID AND AName = 'Boeing')
GROUP BY P.PID, PName
HAVING COUNT(*) >=2
```