

# 3-B Advanced SQL

## Part B



**1** **EXTRACT**

**2** **Primary Keys / Foreign Keys**

**3** **JOIN**

**4** **Subqueries**

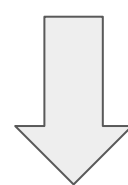
# EXTRACT

```
SELECT EXTRACT(year FROM date) as  
year, COUNT(*) as cnt FROM  
european_soccer.Match  
GROUP BY year  
ORDER BY cnt DESC;
```

- 1 **EXTRACT**
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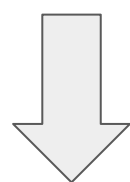
# Primary Keys

# Primary Key



Client_ID	First name	Name	Email	Product_ID
1	Jean	Valjean	jvaljean@gmail.com	1
2	Victor	Hugo	hugobg@gmail.com	1
3	Cécile	From France	cdf@yahoo.fr	3
4	Michel	Delpeche	michou@hotmail.com	2
5	Octave	Parango	99franc@me.com	5
6	Dark	Vader	jesuistonpere@outlook.com	6

# Primary Key

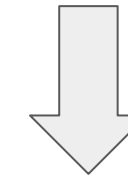


Product_ID	purchased item	Revenues
1	Apples	15
2	Pears	20
3	Bananas	10
4	Hazelnuts	8
5	Mangoes	25
6	Watermelons	12

# Secondary Keys

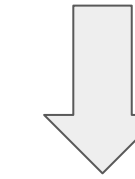


Foreign Key



Client_ID	First name	Name	Email	Product_ID
1	Jean	Valjean	jvaljean@gmail.com	1
2	Victor	Hugo	hugobg@gmail.com	1
3	Cécile	From France	cdf@yahoo.fr	3
4	Michel	Delpeche	michou@hotmail.com	2
5	Octave	Parango	99franc@me.com	5
6	Dark	Vader	jesuistonpere@outlook.com	6

Primary Key



Product_ID	purchased item	Revenues
1	Apples	15
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# INNER JOIN

```
SELECT name, COUNT(*) AS cnt FROM  
`european_soccer.Country` AS Country  
INNER JOIN `european_soccer.Match` AS Match ON  
Country.id = Match.country_id  
GROUP BY name  
ORDER BY cnt DESC;
```

```
SELECT Country.name AS country_name,  
League.name AS league_name FROM  
european_soccer.Country as Country  
JOIN european_soccer.League as League ON  
Country.id = League.country_id;
```

# OUTER JOIN

```
SELECT actor_3_name, movie_title  
FROM `IMDB.third_actors` AS  
Third_actor  
FULL OUTER JOIN `IMDB.movies` AS  
Movies ON Movies.actor_3_id =  
Third_actors.actor_3_id  
WHERE movie_title IS NULL
```

```
SELECT actor_3_name, movie_title  
FROM `IMDB.third_actors` AS  
Third_actors  
LEFT JOIN `IMDB.movies` AS Movies  
ON Movies.actor_3_id =  
Third_actors.actor_3_id  
WHERE movie_title IS NULL;
```



# MULTIPLE JOIN

```
SELECT actor_1_name, actor_2_name, actor_3_name,  
movie_title FROM `IMDB.third_actors` AS Third_actors  
JOIN `IMDB.movies` AS Movies USING(actor_3_id)  
JOIN `IMDB.main_actors` AS Main_actors  
USING(actor_1_id)  
JOIN `IMDB.second_actors` AS Second_actors  
USING(actor_2_id)
```

- 1 **EXTRACT**
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**WITH AS**

```
WITH imdb_score_in_USA AS (  
  SELECT imdb_score FROM `IMDB.movies`  
  WHERE Country = "USA")  
  
SELECT avg(imdb_score) FROM imdb_score_in_USA;
```

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Any questions?

