

SQL — Rel. Algebra Mapping

Non-procedural Procedural lang.

Retrieval Query

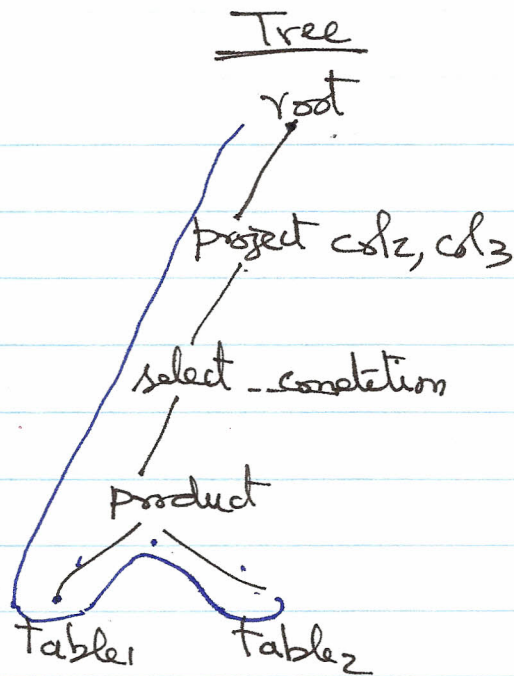
SQL	Execution Seq.	Description	<u>Rel. Algebra</u>
5	SELECT	target columns	project
1	FROM	List of tables	product
2	WHERE	Row search condition	select
3	GROUP BY	Grouping attributes	grouping
4	HAVING	Group selection condition	select
6	ORDER BY	Sorting order of target columns	sort

List the majors and ^{bright} student count with descending count values such that ^{each} student has GPA > 3.5 and the major has at least 100 bright students

```

SELECT major, count(*) as StdCount — 120 rows
FROM Student ————— 54000 rows

WHERE GPA > 3.5 ————— 18000 rows
GROUP BY major ————— 150 Subgroups
HAVING count(*) >= 100 ————— 120 Subgroups
ORDER BY StdCount DESC ————— 120 lines.
    
```



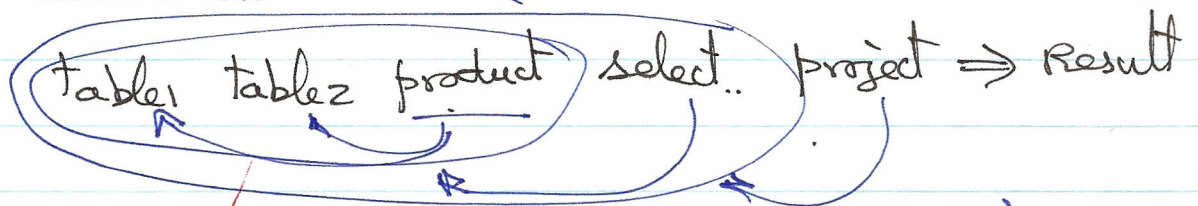
S&L

```

SELECT column2, column3
FROM table1, table2
WHERE condition
  
```

Postorder (Postfix / Polish)

- Visit left branch
- Visit right branch
- Process node value



product (table1, table2)
 select condition
 project cols. ()

Executable code

```

#PS product(-, ,)
select(-, ,)
project(-, ,)
  
```