* Select.sql
* Join.sql
* Joins.sql
  + cross join
  + inner join
  + natural join
  + left join
  + right join
* Notes
  + **left join**, returns all rows from the left relationship, with the matching rows in the right relationship. The result is NULL in the right side when there is no match.
  + **left join** (and right join) give different results when we do "using (A)" and "on R.A = S.A" using (A) means that there is a common attribute A but the values of A in the two tables may not be the same. Therefore, with "left join" and "using (A)" we will only get the column corresponds to the attribute A in the left table left table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Where | On | Using | Order by |
| Cross join | Yes | No | No | Yes |
| Inner join | No | Yes | Yes | Yes |
| Natural join | No | No | No | Yes |
| Right join | No | Yes | Yes | Yes |

* Select \* from R, S on R.S = S.B #produces an error
* inner join needs condition
* "group by" is used with aggregate functions
* Each non-aggregate attribute appears in "select" must show up in "group by"

Select x, y, count(\*)

....

group by x, y