Project PIE (only needs 1 relation as input)

Project is JUST for attributes - its a way to get the columns out of a table.

We Must ensure r and s are compatible

* R and S must have the same degree/arity (same # of attributes)
* Each matching pair of attributes must have compatible data types
  + Ra = Sa, Rb = Sb.
  + Names of the attributes don’t matter, do they have compatible data types.

Names of attributes do not need to match

Output of union operation uses the attribute names of the relation on the left hand side.

PROJECT course\_id (SIGMA semester=”Fall” && year = 2009 (section)) U PROJECT course\_id (SIGMA semester=”Winter” && year = 2010 (section))

Section 2.4 of text

Set Difference Operation

Notation -------- r-s

Defined as

r-s = {t | t ∈ r and t ∉ s)

Set differences must be taken between **compatible** relations

* R and s must have the same arity
* Attribute domains of r and s must be compatible

Example: to find all courses taught in the FALL 2019 semester, but not in the Spring 2010 semester

PROJECT course\_id ( SIGMA semester=”Fall” && year = 2009 (section) ) - PROJECT course\_id (SIGMA semester = “Spring” && year = 2010 (section) )