Basic Data Concepts:

Relational Algebra: Query Language

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Objectives

Objective

Utilize relational model and relational algebra

Fundamental Operators

Let **r** and **s** be relations with **schemas R and S**

union	$r \cup s = \{ t \mid t \in r \vee t \in s \}$
difference	$r - s = \{ t \mid t \in r \wedge t \notin s \}$
cartesian_product	$r \times s = \{ t \mid t = t_r t_s \text{ where } t_r \in r \wedge t_s \in s \}$
selection	$\sigma_P(r)$
projection	$\pi_A(r)$

University Examples: Schema and Instance

Cse_majors

id	name	class
1111	Student1	FR
2222	Student2	SO
3333	Student3	JR
4444	Student4	SR
5555	Student5	GR

University Examples: Schema and Instance

cse_profs

name	office
Prof1	Office1
Prof2	Office2

eee_majors

id	name	class
2222	Student2	SO
4444	Student4	SR
6666	Stduent6	SR

University Examples: Schema and Instance

cse_courses

crsid	crstitle
CSE412	Database Management
CSE513	Rules in Database Systems
CSE514	Object Orientated Databases