

Notes

CSC230 Database Technologies for Analytics

18 October 2021

Sets, Domains, and Relations

$$S_0 = \{A, B, C\}$$

$$S_1 = \{a, b, c\}$$

$$S_0 \times S_1 = \{(A, a), (A, b), (A, c), (B, a), (B, b), (B, c), (C, a), (C, b), (C, c)\}$$

$$R = \{(A, a), (B, b), (C, c)\}$$

$$R \subseteq S$$

Vocabulary

Set an unordered collection of distinct elements

Domain the set of all values from which we may select elements for inclusion in a particular set

Tuple an ordered collection of elements

Cartesian product of two sets a set of tuples that together include all possible combinations of elements of the two sets in the product

Relation a subset of a Cartesian product

Function a special kind of relation

Relational Databases

Upper case	Lower case
A	a
B	b
C	c

Vocabulary

Record a row in the table

Column contains attributes

Type domain of elements in a column

1 Terms

ACID Atomicity, Consistency, Isolation, Durability

CRUD Create, Read, Update, and Delete

DBMS Database Management System

ERD Entity Relationship Diagram

RDBMS Relational Database Management System

SQL Structured Query Language