CSCE 315

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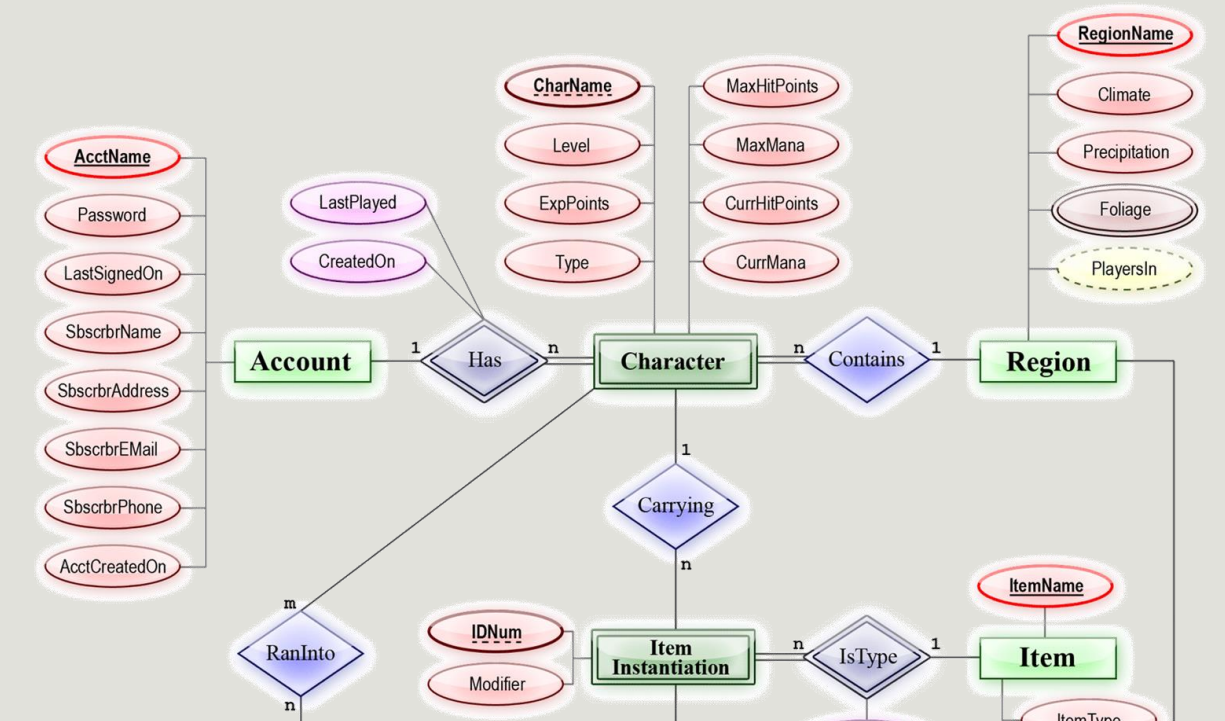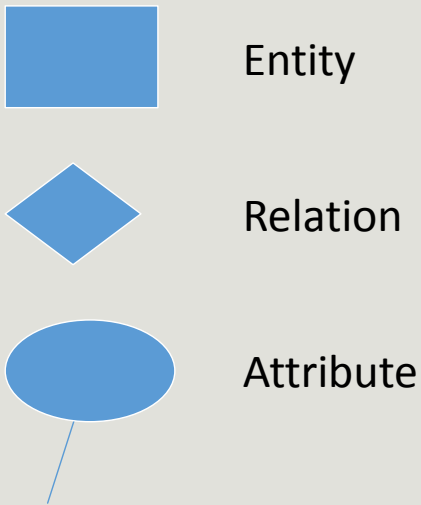
Project 1: Database Management System

- <u>Design Document</u>
- DB Engine
- Lexical Parser
- DB Engine and Lexical Parser Integration
- DB Application and integration

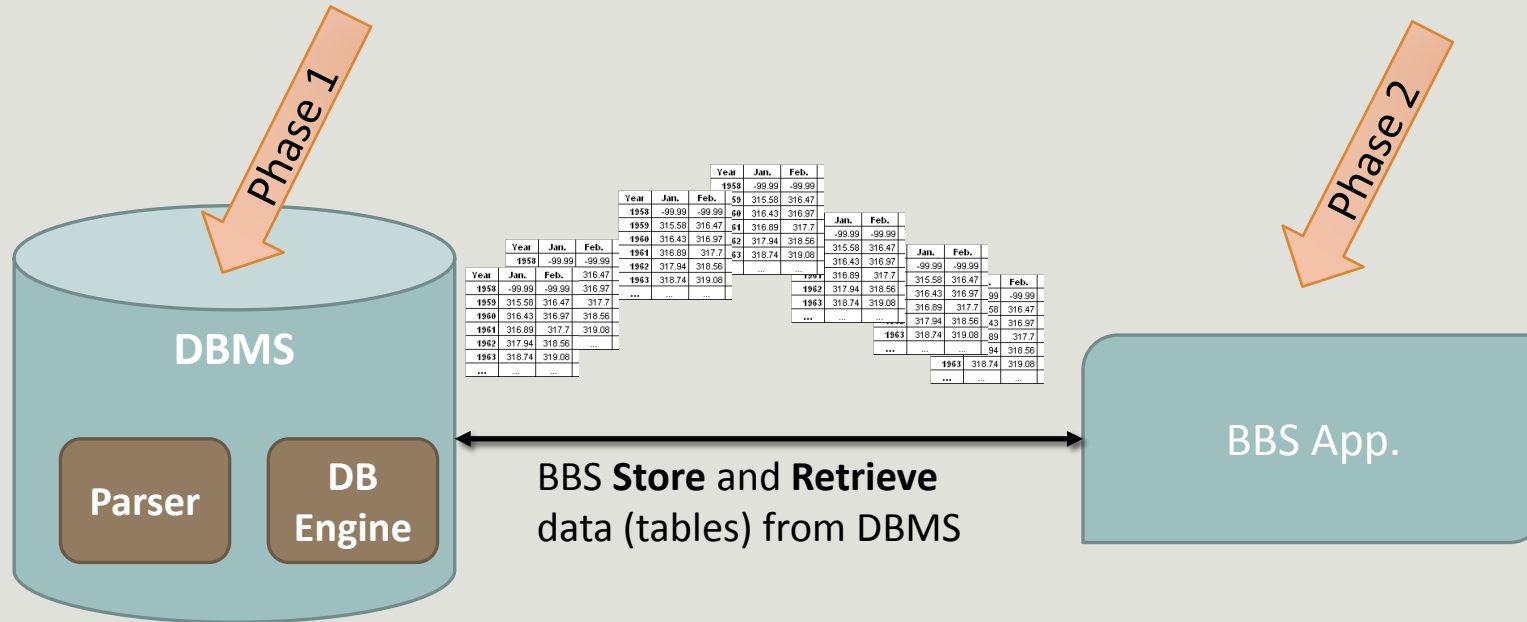# Project 1 – Part 1: Design Document

- **State the purpose of your project/subsystem**
  - What is the objective?

- **Define the high level entities in your design**
  - High level description and diagram illustrating the project.

- **For each entity in the previous section, define the low level design**
  - Usage: entity interfaces, benefits, risks….
  - Configuration: how to configure or initialize each entity
  - Model: What are the attributes, functions, or methods in each entity
  - Interaction: how different objects or entities interact and work together

- **Benefits, assumptions, risks/issues**
  - List all the foreseen issues, challenges, and risks of this project

Entity-Relationship Diagram

• An **entity-relationship diagram (ERD)** is a graphical representation of an information system that shows the relationship between people, objects, places, concepts or events within that system. An ERD is a data modelling technique that can help define business processes and can be used as the foundation for a relational database.
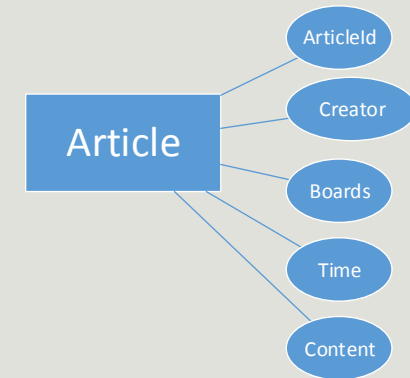
Entity

Relation

Attribute

Project 1

Phase 1 DBMS

A simplified example:
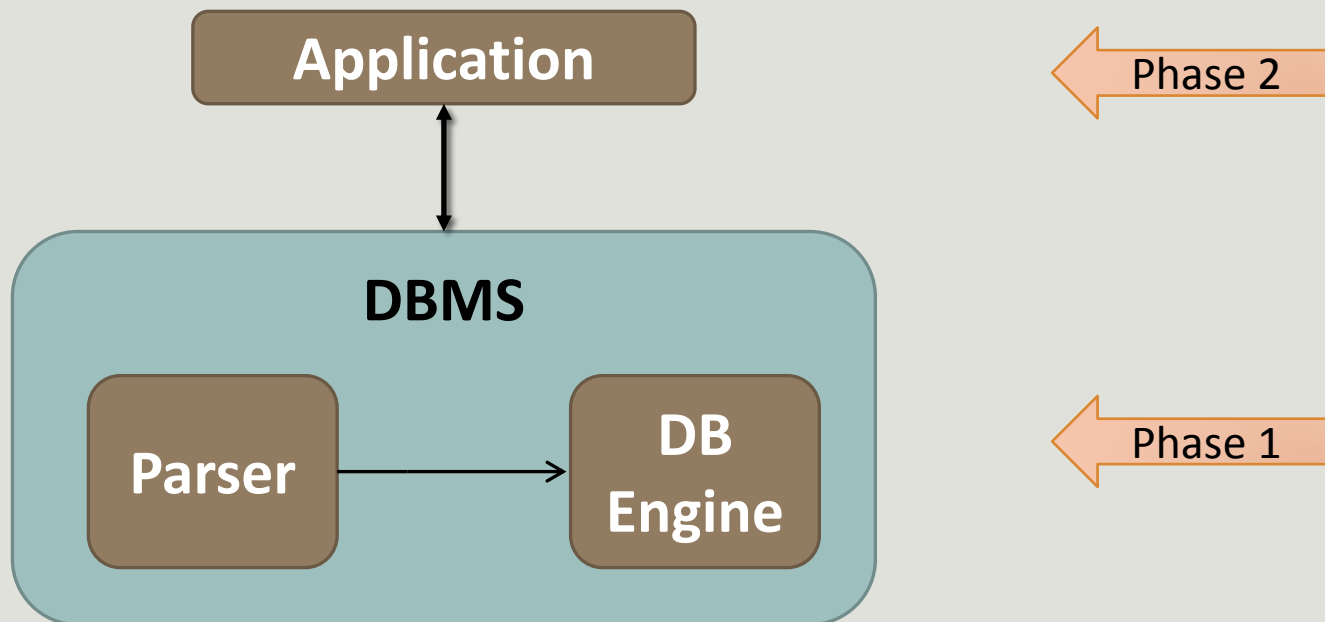
Phase 1 DB Engine

A simplified example:

Relation Operations

Select()
Project()
Rename()
….

Attribute

Name
Type
print()
….

Tuple

Vector<Attr>
Get()
set()
….

DB Command

Open()
Close()
Save()
….

Relation

Vector<Tuple>
Get()
Set()
….

DB
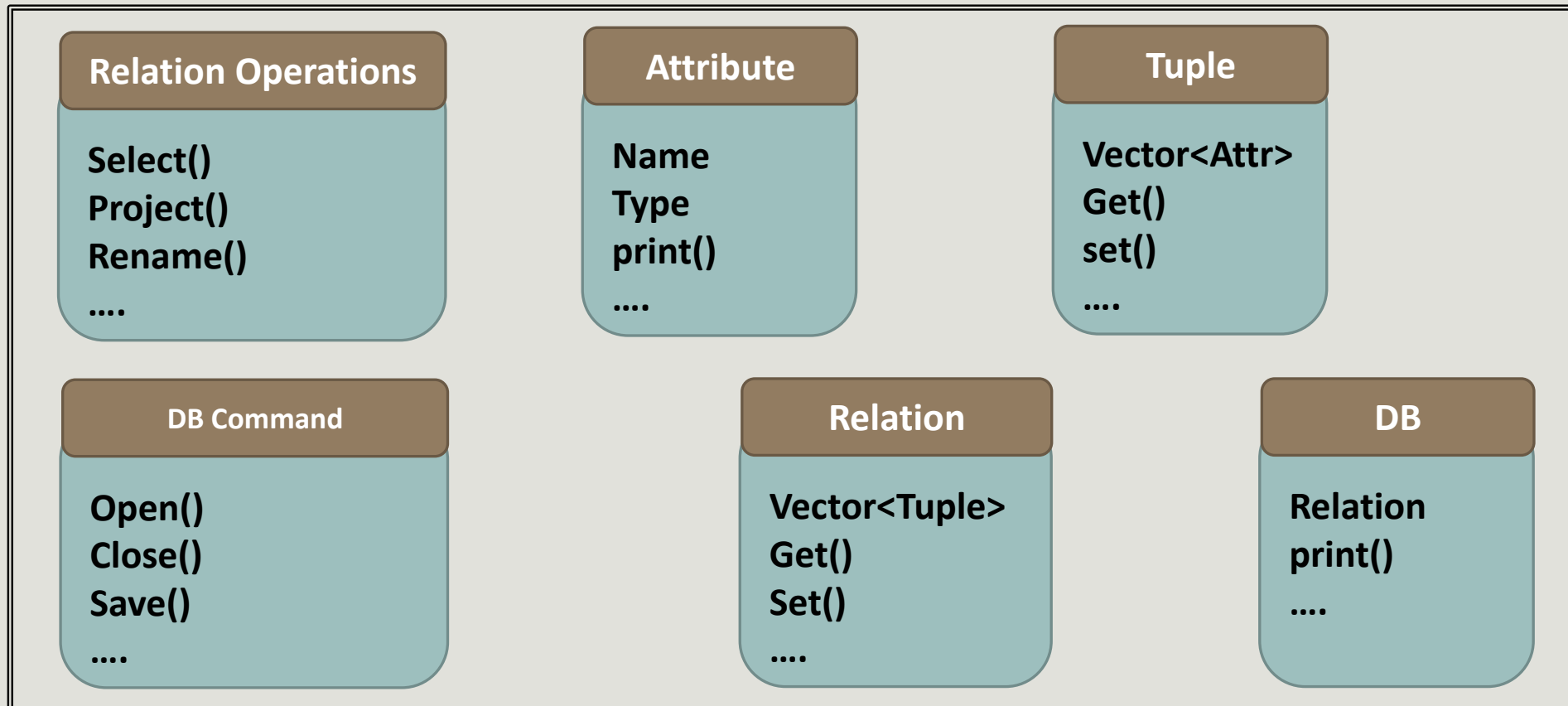
Relation
print()
….
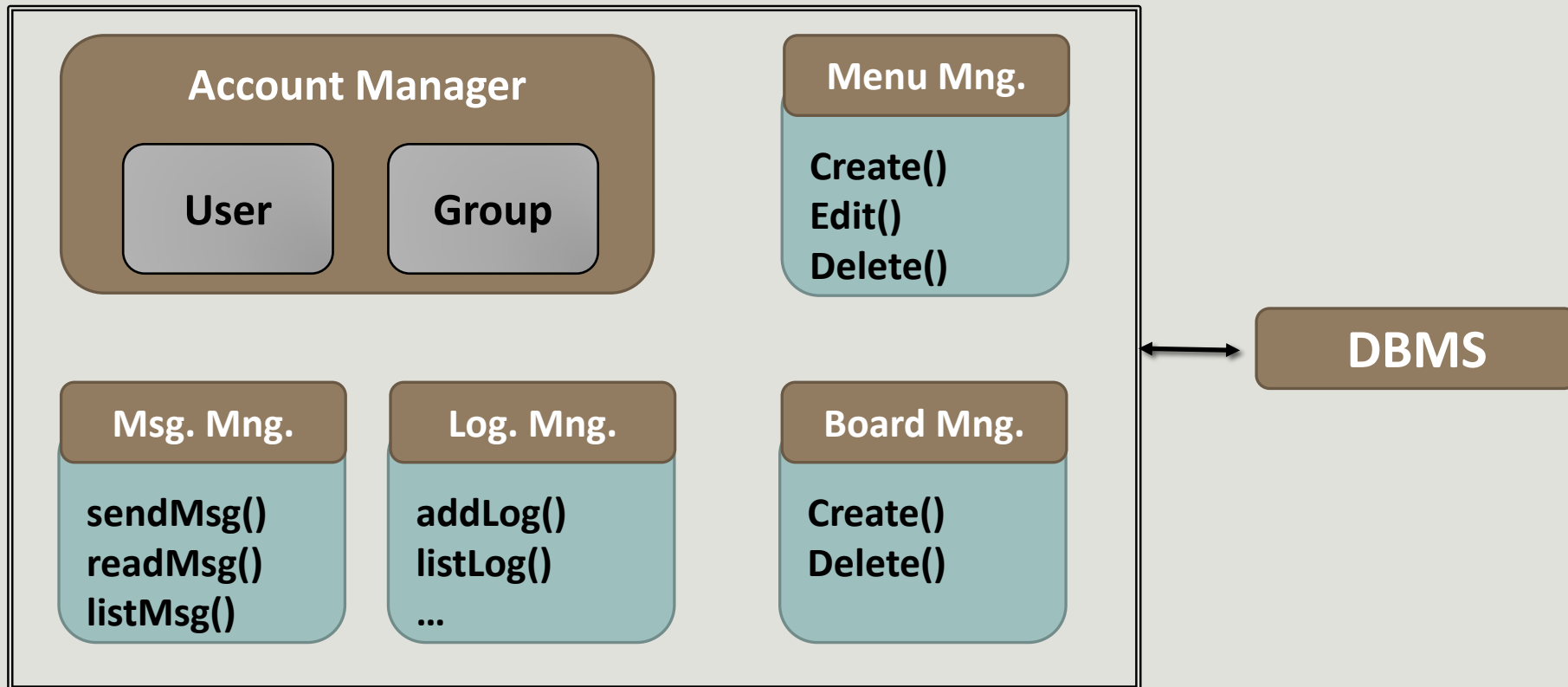
Phase 1 Recursive-Descent Parser
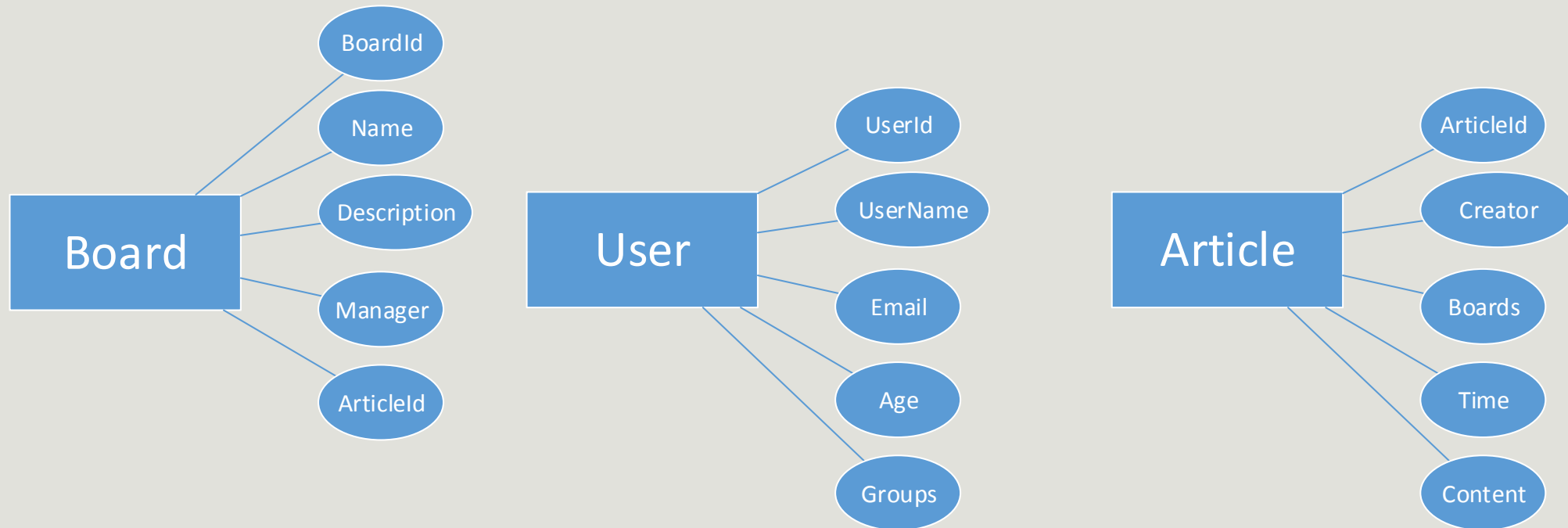
A simplified example:
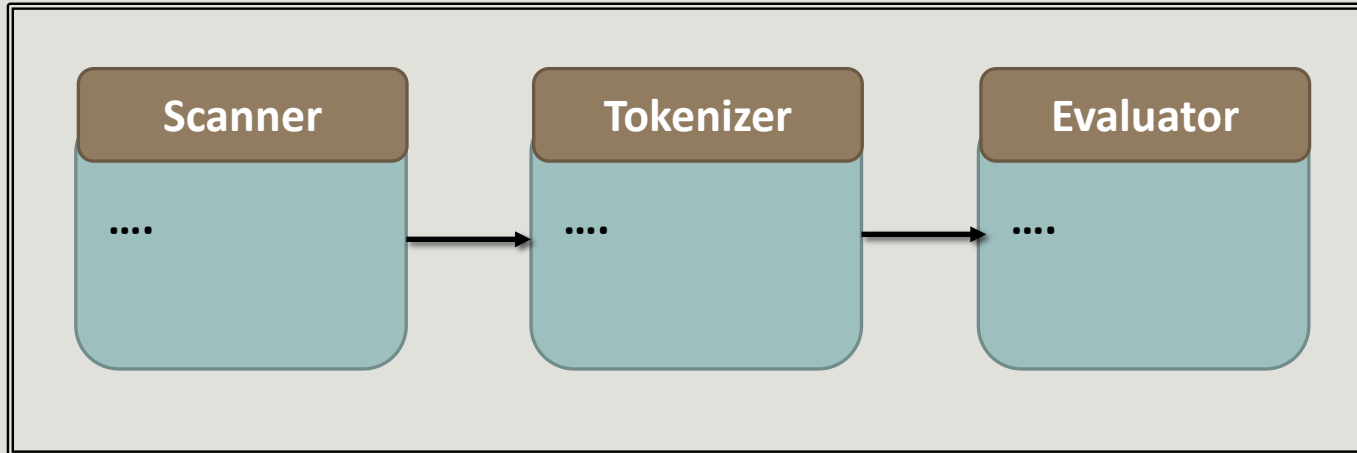
Phase 2 BBS Architecture

A simplified example:

Phase 2 BBS: Entity Relation Diagram

A simplified example:

References:

- searchcrm.techtarget.com/definition/**entity**-**relationship**-**diagram**

- https://en.wikipedia.org/wiki/**Entity**–**relationship**_model