Introduction

1.1 Project Overview

The DLoA system will allow historians and purveyors of the ancient arts to rediscover the vast literature and knowledge lost to us on that fateful day. The system will allow the user to search through the database for specific works, and view their status, as well as track borrowing and return records, fees for late returns, and other information. It will also be able to generate various kinds of reports, such as revenue from late fees, trends in borrowing, works that are near return date, as well as some others. Thank you for using our services!

1.2 Scope

The DLoA system will provide benefits of organization, easy tracking, selective views, generative reports based on activity. It will encompass the functionalities of a library, including checking out and in various works, the movement of works into and out of the system, and report generation. Some traditional library services that are not planned to be included in the DLoA system are a request system for specific works, community outreach, and information training.

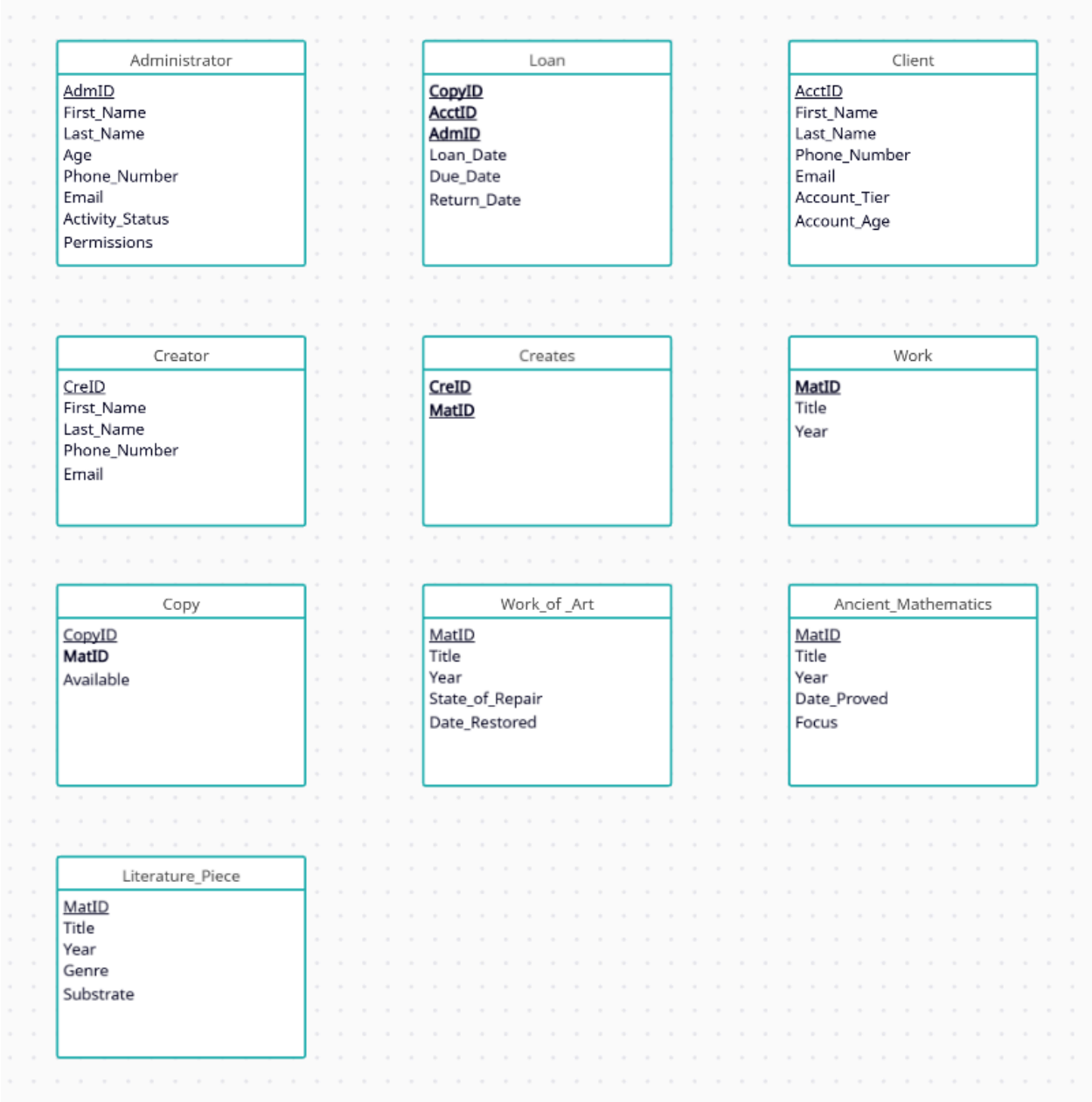
1.3 Glossary

SQL: Structured query language
EECS: Electrical Engineering and Computer Science
KU: University of Kansas
SSH: Secure Shell
RDP: Remote Desktop Protocol
ID: Identification
DLoA: Digital Library of Alexandria

Relational Schema Mapping

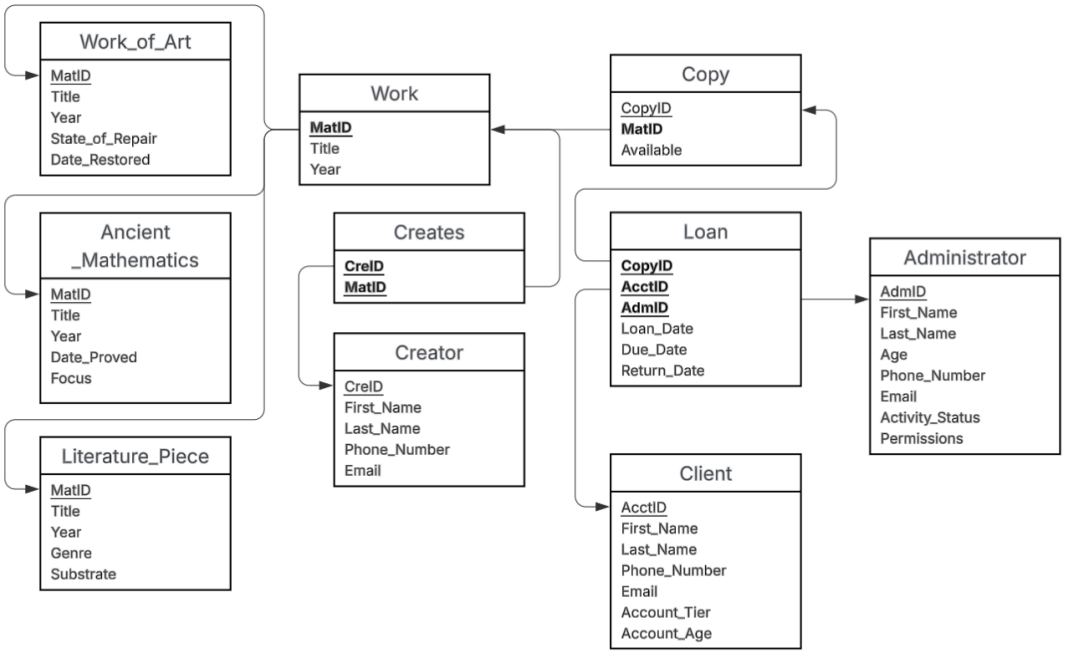
Attributes that are only underlined are primary keys and attributes that are both bolded and underlined are foreign keys. Reference the relational schema diagram for more detailed foreign key documentation. Attribute and domain definitions can be seen in the schema documentation and dictionary section. As far as functional dependencies are concerned, the majority of the functional dependencies can be described by the various primary keys in the model. Each primary key uniquely identifies a tuple within the database, determining the attributes within that specific tuple. This can be generalized to every primary key within the model. Another relevant dependency is the relationship between the loan_date and return_date of a document since the loan date will directly affect the return date. Furthermore, if late fees are implemented into the

design at a later date, there will be a direct dependency between the return date and late fee.



Relational Schema Diagram

The following diagram demonstrates the interdependent relationships of the foreign keys contained within the DLoA model. Similarly to above, underlines indicate a key attribute and boldface indicates a foreign key attribute.



Schema Documentation and Dictionary

Attribute Name	Data Type/Domain	Description
AdmID	INT	ID number for administrator
First_Name	VARCHAR(50)	First Name
Last_Name	VARCHAR(50)	Last Name
Age	INT	Age of person
Phone_Number	VARCHAR(20)	Phone Number
Email	VARCHAR(100)	Email address
Activity_Status	VARCHAR(20)	Activity Status of administrator
Permissions	VARCHAR(100)	Permissions of administrator
CopyID	INT	ID number of a loaned Copy
AcctID	INT	Account ID number of borrower
Loan_Date	DATE	Date of loan

Due_Date	DATE	Due date of loan
Return_Date	DATE	Return date of loan
Account_Tier	INT	Account tier of client
Account_Age	INT	Account age of client
CreID	INT	Creator ID
MatID	INT	Material ID
Title	VARCHAR(200)	Title of work
Year	INT	Creation year of work
Available	BOOLEAN	Shows if a copy is available to borrow
State_of_Repair	VARCHAR(100)	Condition of an art piece
Date_Restored	DATE	Restoration date of an art piece
Date_Proved	DATE	Date ancient mathematic was proved
Focus	VARCHAR(100)	Focus of ancient mathematic
Genre	VARCHAR(50)	Genre of literature piece
Substrate	VARCHAR(50)	Substrate of literature piece

Appendices

N/A