Project LIB OPAC
Data Design Document

Submitted to:

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Submitted by:
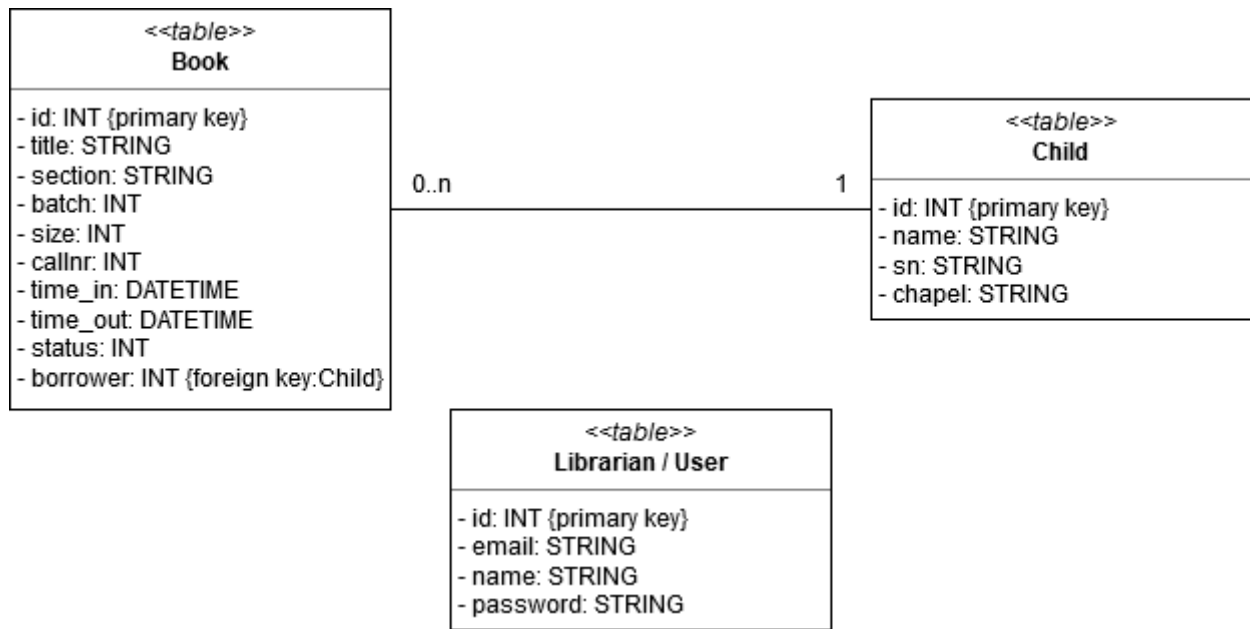dela Cruz, Francis Zac
Jurquina, Angelo
Pangarungan, Nicko

In partial fulfillment of Academic Requirements
for the course
CS 191 Software Engineering I
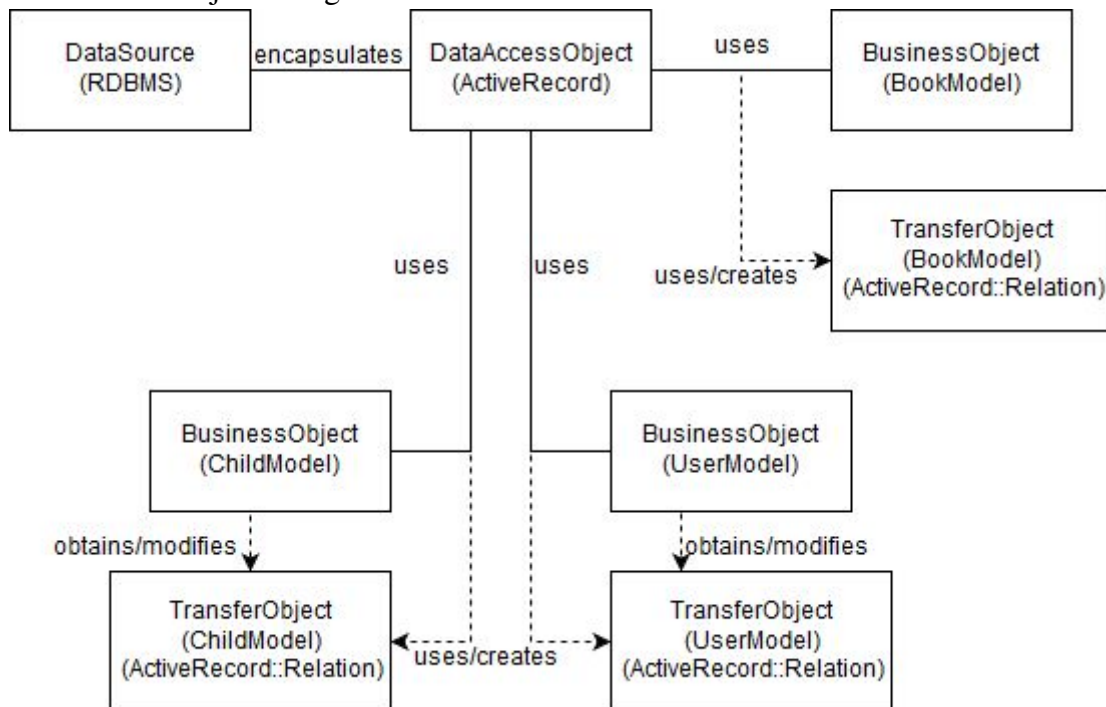of the
1st Semester, AY 2014-2015

Revision Control

History Revision:

Revision Date	*Person Responsible*	*Version Number*	*Modification*
11/21/2017	Francis dela Cruz	1.0	Initial Document.

Data Design:

<<table>>
Book

- id: INT {primary key}
- title: STRING
- section: STRING
- batch: INT
- size: INT
- callnr: INT
- time_in: DATETIME
- time_out: DATETIME
- status: INT
- borrower: INT {foreign key:Child}

0..n ——— 1

<<table>>
Child

- id: INT {primary key}
- name: STRING
- sn: STRING
- chapel: STRING

<<table>>
Librarian / User

- id: INT {primary key}
- email: STRING
- name: STRING
- password: STRING

Data Access Object Design:

DataSource (RDBMS)	encapsulates	DataAccessObject (ActiveRecord)	uses	BusinessObject (BookModel)

DataAccessObject (ActiveRecord) — uses/creates → TransferObject (BookModel) (ActiveRecord::Relation)

DataAccessObject uses → BusinessObject (ChildModel)

DataAccessObject uses → BusinessObject (UserModel)

BusinessObject (ChildModel) — obtains/modifies → TransferObject (ChildModel) (ActiveRecord::Relation)

BusinessObject (UserModel) — obtains/modifies → TransferObject (UserModel) (ActiveRecord::Relation)

TransferObject (ChildModel) ← uses/creates → TransferObject (UserModel)

Data Access Object (DAO) Classes:

Class Name	Description
ActiveRecord	Built-in ORM in Rails; abstracts the database layer from the application (assumes a relational database)

TransferObject Classes:

Class Name	Description
BookModel	Contains business logic for the Book entity. ActiveRecord::Relation objects represent relations from the tables.
UserModel	Contains business logic for the User / Librarian entity. ActiveRecord::Relation objects represent relations from the tables.
ChildModel	Contains business logic for the Child entity. ActiveRecord::Relation objects represent relations from the tables.

List of Data Source:

Data Source Name: cwtslib
Description: PostgreSQL database

Sample Tables from the Database:

Book

id	title	section	batch	size	callnr	time_in	time_out	status	borrower
INT	STRING	STRING	INT	INT	INT	DATETIME	DATETIME	INT	INT
PK									FK
1	The Last Question	Science Fiction	0	2	123	2017-11-21 11:23:00	NULL	1	NULL
2	JEDI	Textbook	0	3	444	2017-11-21 11:00:00	2017-11-21 13:00:00	2	1

User

id	email	name	password
INT	STRING	STRING	STRING
PK			
1	d@control.com	Dorothy	adf98gGgnhr09

Child

id	name	sn	chapel
INT	STRING	STRING	STRING
PK			
1	Theo	201500000	Church of Theology