**Database Design**

**NASA EVA Gamification**

*Group 3*

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| 1.3 | Revised ERD | Jacqueline Macfadyen | 03/25/2018 |
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# Overview

The database described in this document will augment the default MediaWiki database to allow for the gamification of the NASA EVA MediaWiki. The database will store the values necessary to track badges earned by users. The badge table will store details about the badge, the user and when it was earned.

# Specific Terms and Acronyms

|  |  |
| --- | --- |
| **Term/Acronym** | **Description** |
| SQL | Structured Query Language |
| DDL | Data Definition Language |
| DML | Data Manipulation Language |
| ER Diagram | Entity Relationship Diagram |

# Hardware and Software

## Diagram Tool

Lucidchart online tool for diagramming.

## Database

MariaDB 5.5.59

MariaDB is platform independent and will run on Windows, Mac, or Linux. PhpMyAdmin was used to interface with the database.

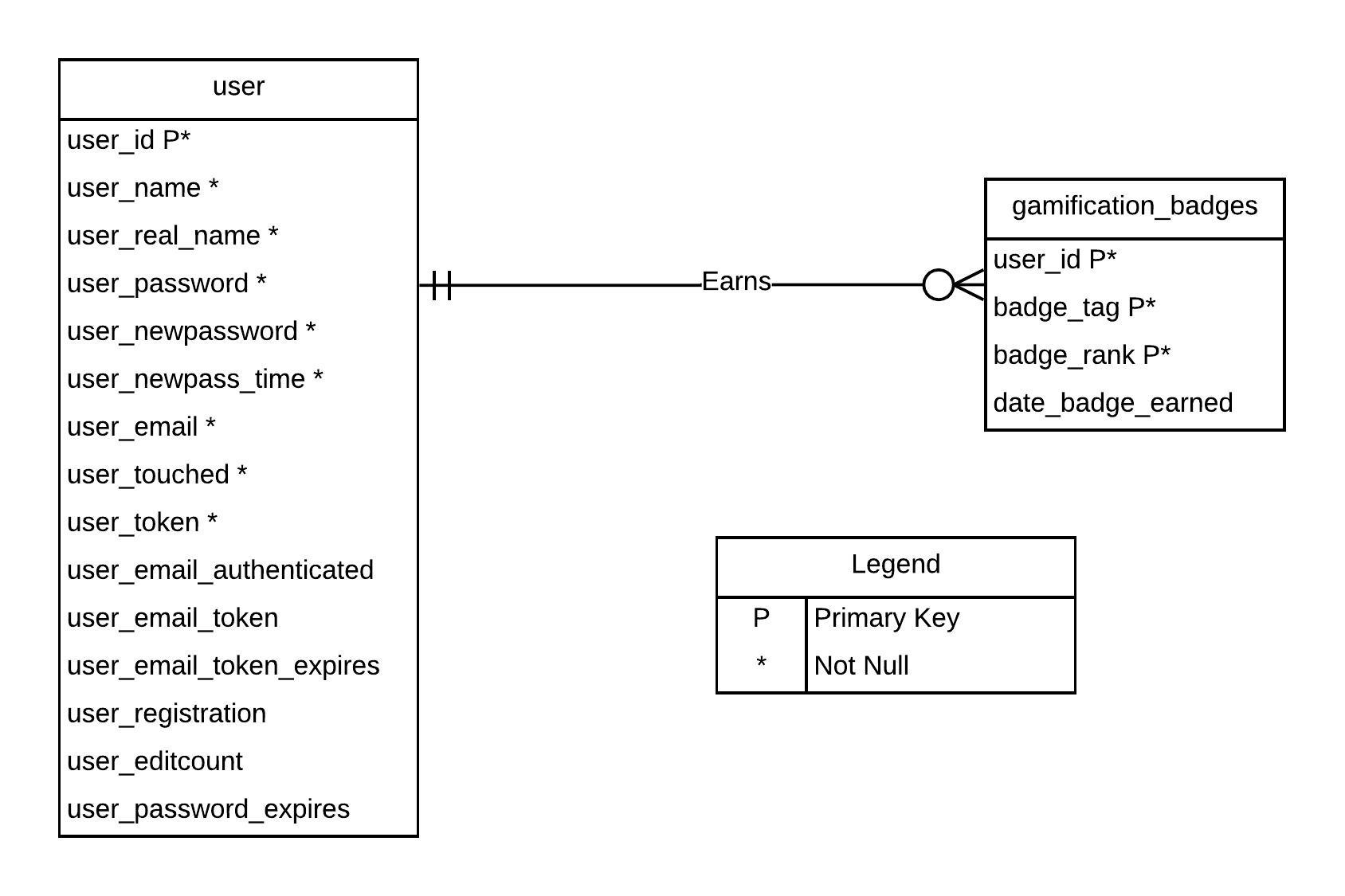
## SQL Editor

Sublime Text Editor for the Mac.

## DDL and DML

SQL will be used for the DDL and DML. The information captured in the ER diagram will be used to generate SQL scripts to create the database tables. In addition, SQL will also be used to create DML scripts to insert data to be used for testing.

# ERD



# Relationships

There is a 1:M relationship between user and gamification\_badges.

# Cardinalities/Business Rules

A user can have zero to many gamification badges; a gamification badge is created for one and only one user.

# Entities

1. Entity Name: user

Entity Description: pre-existing MediaWiki database table for registered users

Main attributes of user:

Attribute Name: user\_id [Primary Key]

Attribute Description: auto incremented user id

Attribute Name: user\_name

Attribute Description: user’s screenname

Attribute Name: user\_real\_name

Attribute Description: user’s real name

Attribute Name: user\_password

Attribute Description: user’s password

Attribute Name: user\_newpassword

Attribute Description: user’s new password

Attribute Name: user\_new\_pass\_time

Attribute Description: datetime user’s new password was generated

Attribute Name: user\_email

Attribute Description: email address of user

Attribute Name: user\_touched

Attribute Description: last time user logged in

Attribute Name: user\_token

Attribute Description: user’s token (if applicable)

Attribute Name: user\_email\_authenticated

Attribute Description: datetime user’s email was authenticated

Attribute Name: user\_email\_token

Attribute Description: token for user’s email (if applicable)

Attribute Name: user\_email\_token\_expires

Attribute Description: datetime user’s email token expires (if applicable)

Attribute Name: user\_registration

Attribute Description: datetime user registered on site

Attribute Name: user\_editcount

Attribute Description: number of times user has edited a page

Attribute Name: user\_password\_expires

Attribute Description: expiration date of user’s password (if applicable)

1. Entity Name: gamification\_badges

Entity Description: new table containing gamification badges earned by users

Main attributes of gamification\_badges:

Attribute Name: user\_id [Primary Key]

Attribute Description: user id

Attribute Name: badge\_tag [Primary Key]

Attribute Description: badge tag

Attribute Name: badge\_rank [Primary Key]

Attribute Description: badge rank

Attribute Name: date\_badge\_earned

Attribute Description: date badge earned

# Assumptions and Special Considerations

1. The date\_badge\_earned field will be populated when the badge is actually earned and null when the NASA EVA Gamification is installed for any retroactive badges that may be awarded.
2. Only one badge of the same tag and rank may be awarded to the same user.
3. MediaWiki does not use foreign key constraints in their native database tables, so to stick to this precedent, the gamification\_badges table will also not use a foreign key, though it is implied that the user\_id information comes relates to the user\_id field in the user table.
4. Indexing the gamification\_badges table on the user\_id field is recommended for future semesters, but will not be a part of this team’s project work.

# Statements

Gamification\_badges

1. Create gamification\_badges table

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-- Table structure for table gamification\_badges

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CREATE TABLE IF NOT EXISTS /\*\_\*/ gamification\_badges (

user\_id int(10) UNSIGNED NOT NULL,

badge\_tag varchar(255) NOT NULL,

badge\_rank varchar(255) NOT NULL,

date\_badge\_earned binary(14) DEFAULT NULL,

PRIMARY KEY(user\_id, badge\_tag, badge\_rank)

) ENGINE=InnoDB DEFAULT CHARSET=utf8;

1. Populate gamification\_badges table with data from the user table for users with authenticated emails

--

-- Populate the gamification\_badges table with the email verification badge, if they already verified before the extention was loaded

--

INSERT IGNORE INTO gamification\_badges (user\_id, badge\_tag, badge\_rank)

SELECT user\_id, 'gamification-badge-emailverification', 'gamification-rank-1'

FROM user

WHERE user\_email\_authenticated IS NOT NULL;

# Results

Gamification\_badges

1. Create gamification\_badges table



1. Populate gamification\_badges table with data from the user table for users with authenticated emails

