Project Schema: Tongues

- User (userID, firstName, lastName, username)
- Password (userID, hashedPassword)
    - Foreign Key userID references User
- AuthToken (token, userID, timestamp)
    - Foreign Key userID references User
- Language (languageID, name)
- UserLanguage (relationshipID, userID, relationType, languageID)
    - Foreign Key userID references User
    - Foreign Key languageID references Language
- UserStat (userID, mappingID, srcLangID, targLangID, statCount)
    - Foreign Key userID references User
    - Foreign Key srcLangID references Language
    - Foreign Key targLangID references Language

User (named because it represents a user entity)
A user has one password.
A user has any number of auth tokens.
A user has one native language and at least one other language (at least two languages overall).
A user has any number of use-statistics depending on how many words they have clicked on.
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userID - internal identifier for the user
firstName - the user's first name
lastName - the user's last name
username - the user's username

Password (named because it represents a password entity)
A password has one user. (Even if password hashes are the same for several users, they are stored separately)
Passwords are stored separately from users for security reasons.
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userID - internal identifier to the user associated with this password
hashedPassword - the hashed password of the user

AuthToken (named because it stores the auth tokens for each user login)
An auth token has one user.
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token - the value of this auth token (likely a UUID)
userID - internal identifier for the user this auth token belongs to
timestamp - the timestamp when this auth token was created. This allows tokens to expire.

Language (named because it represents the available languages in the app)

Languages can be selected by any number of users.
Languages are found in any number of user usage statistics.
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languageID - three letter code used by gospel library to represent the language
name - the name of the language in the language (e.g. English, español)

UserLanguage (named because it represents the languages a user has selected. Each row stores one language that the user has selected.)
Each user language entry links one user and one language.
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relationshipID - internal identifier for this user-language link
userID - internal identifier linking to the user
relationType - whether this is the user's native or secondary language
languageID - internal identifier linking to the language

UserStat (named because it represents the usage statistics for individual users. Each row stores the number of times that the user has clicked on one word in context.)
Each entry in userstat links to one user and one language.
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userID - internal identifier linking to the user
mappingID - external identifier that references a specific word pairing in the json pairing file
srcLang - internal identifier linking to the source language
targLang - internal identifier linking to the target language
statCount - number of times that this mapping was clicked on by the user

Normalization

We strove to develop the tables so that they were normalized and secure (such as passwords being stored separately from users). The text of the Book of Mormon in different languages and the mapping between words is stored outside of the database in a downloadable json file because it is constant regarding user actions.

We made an effort to ensure that the schema meets all of the following normal form criteria:

1. First Normal Form (1NF)
2. Second Normal Form (2NF)
3. Third Normal Form (3NF)
4. Fourth Normal Form (4NF)