# Driftr

## Security Analysis

**Rose-Hulman Institute of Technology – CSSE 333-01**

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# Version Information

| Version | Date | Comments |
|---------|---------|---------------|
| 1.0 | 1/21/15 | Initial Draft |

# 1 Privacy Analysis

For our database all users will be able to view each other's public information including name and vehicle make, model, and year. Users who are friends will be able to additionally see each other's email. Users will also be able to see the location, time, theme, and description of events. Event owner will be able to view event participants. Once the event time passes all users will be able to view all participants in an event, as well as their placement.

# 2 Security Analysis

Only event owners will be able to edit event location, time, theme, description, and remove users from the participant list. Event owners will not be able to modify entries or add entries to the participant list. Events will have a Boolean field indicator whether the local police department decided to "participate" in the event or not. Users will be able to look up locations and see how "hot" they are. Location "heat" is determined by the number of events at that location that have been busted.

During user registration, under vehicle, if the user registering seems suspicious in anyway such as their vehicle being a black and/or white Crown Victoria or black and/or white Dodge Charger for example.

# 3 Entity Integrity Analysis

a. For the User table, email must be a unique, not null varchar that is at most 255 characters long. Name must not be null varchar and can be at most 255 characters long. PasswordHash must be a not null binary that is at most 64 characters long. PasswordSalt must be a not null binary that is at most 64 characters long.

b. For the Vehicle table, id must be not null, unique and an int. Useremail is a not null varchar of at most 255 characters that is foreign key to the User table. Active is a bit that is not null. Make must be a not null varchar and can be at most 255 characters long. Model must be a not null varchar and can be at most 255 characters long. Year must be a not null varchar and can be at most 255 characters long. Color must be a not null varchar and can be at most 255 characters long. Description is a max length varchar that must be not null.

c. For the Event table, id must be a unique not null integer. UserEmail is a unique not null varchar of at most 255 characters that is a foreign key that references User table. LocationId must be a unique not null int that is a foreign key to the Location table. EventDate must be a not null datetime. Theme must be a not null varchar of at most 255 characters. Description is a not null varchar of max length. WasBusted must be a not null bit.

d. For the Event_Participant table, userEmail must be a not null varchar of at most 255 characters. EventId must be a not null int that is a foreign key on the Event table. UserEmail and eventId must be a unique pair. Placement must be a not null int.

e. For the Location table, id must be a unique not null int. Address must be a not null varchar of at most 255 characters. City must be a not null varchar of at most 255 characters. State must be a 2 character char and must not be null. Description must be a not null varchar of max length.

f.   For the Friend table, UserEmailA must be a not null varchar of at most 255 characters that is a foreign key on the table User. UserEmailB must be a not null varchar of at most 255 characters that is a foreign key on the table User. UserEmailA and UserEmailB must be a unique pairing. Relation must be a not null varchar of at most 255 characters.

g.   For the Preferences table, id must be a unique, not null, int. UserEmail must be a not null varchar of at most 255 characters that is a foreign key on the User table. Rating must be a not null int (probably should put some sort of constraint on this). Type must be a not null varchar of at most 255 characters. Key must be a not null varchar of at most 255 characters. Value must be a not null varchar of at most 255 characters.

# 4 Referential Integrity Analysis

All update operations will cascade, unless the operation would create a null pointer, in which case the operation will be rejected. This behavior was chosen for a variety of reasons. If a location name is changed, it should be updated in all event at that location. If a user changes their name, it should be updated in the event they own or participate in as well.

All delete operations will reject. All records will be kept forever, unless the secret server warehouse has been compromised by a police raid, in which case all user names will simply be replaced with "Sriram Mohan."

# 5 Business Rule Integrity Analysis

After the event time passes, it is the responsibility of the event owner to update positions for each of the event participants and if the event was busted or not.