

Hongjoon Kim

Sid Sridharan

Hoorad Afshar

Amon Kissi

### Milestone 3: 3NF Logical Relational Database Schema

RECOMMENDATION ( rec\_id <sup>PK</sup>, cust\_id <sup>FK</sup>, rec\_message)

CUSTOMER ( cust\_id <sup>PK</sup>, cust\_dob, cust\_f\_name, cust\_l\_name, cust\_gender, cust\_str\_address, cust\_city, cust\_state, cust\_zip, cust\_phone\_num, cust\_email, cust\_dl\_num)

PAYMENT (pay\_id <sup>PK</sup>, pay\_method, pay\_amount, pay\_deposit, pay\_datetime, cust\_id <sup>FK</sup>)

RENTAL (rent\_id <sup>PK, FK</sup>, pickup\_address, dropoff\_address, rent\_start\_date, rent\_end\_date, rent\_time, main\_logs, pay\_id <sup>FK</sup>, vehi\_id <sup>FK</sup>)

VEHICLE (vehi\_id <sup>PK</sup>, vehi\_lic\_plate, vehi\_type, vehi\_make, vehi\_model, vehi\_year, fuel\_type, vehi\_condition)

MAINTENANCE (main\_id <sup>PK</sup>, main\_date, main\_time, main\_work\_desc, main\_vendor, main\_status, main\_cost, vehi\_id <sup>FK</sup>)

The schema above meets the conditions of 1NF because each relation has no repeating group, and the primary keys are identified. They also have no partial dependencies because there is no composite key in any of the tables; therefore, the schema meets 2NF. Finally, there are no transitive dependencies in any of the tables; therefore, the schema is in 3NF. As a result, we can say that this database schema's entire table structure adheres to the 3NF standard for database normalization. By doing so, the schema is guaranteed to be efficient, and the likelihood of data abnormalities or inconsistencies is reduced.

