



# Database Write-Up

Sean Olejar  
Mhammed Alhayek  
Brian Monticello

# Background

- Car insurance companies use internal chips to monitor driver behavior
- Mutually beneficial:
  - Driver saves money for safe driving
  - Company saves money by reducing accidents and therefore claims

## A Driving Report Card

State Farm is one of a growing number of car insurance companies that will, with permission, track customers' driving habits in exchange for discounts. These are the grades the Your Money columnist Ron Lieber and his wife received in the company's Drive Safe and Save program after about 1,000 miles on the road.

CATEGORY	GRADE	EXPLANATION
Acceleration	B+	Drivers who frequently increase speeds more than 5 miles per hour in a second or less receive lower grades, since frequent quick acceleration is correlated with a high number of insurance claims.
Deceleration	A-	An accelerometer measures how hard and how frequently drivers are braking, as it may be a sign of inattention. Frequently slowing down more than 10 miles per hour per second will lower grades.
Turns	A-	Drivers who create G forces above a certain level, which they experience as leaning while turning, will see their grades fall given the risk of losing control in certain conditions.
Time of Day	A+	Driving in the middle of the night, when there are a lot of drunk and tired people on the road, is particularly dangerous. Rush hour in many areas carries elevated risks as well.
Speed	A-	For now, the company measures only whether drivers go faster than 80 miles per hour. Those who do it even once lose their perfect grade. Do it often, and it falls further.

This sparked an idea...



# Idea

- Construct a web application that will be used internally at health insurance companies.
- Assume that there exists some sort of device (similar to a FitBit or Apple Watch), which allows us to accurately monitor the lifestyles of customers.
- Customers will voluntarily disclose their own lifestyle habits, because the insurance company will reward a healthy lifestyle with lower premiums.





# Our Product and Its Value

- Our application will take this data about the consumers lifestyle and use it to predict likely health of the customer in the future.
- Additionally, the system will determine eligibility of the customers for rate discounts.
- 2 major values for the insurance company:
  - More accurately assess premiums for their customers
  - Save money on medical expenses by incentivizing a healthier lifestyle.



# Our Data

- We will be simulating our own data for this project.
- Data Model:
  - Subscriber
    - Info about each Customer
  - Relationships
    - Any subscribers who are in on a group plan
  - Policies
    - Info about each policy, and its rates
  - Medical Records
    - Info about all doctor/hospital visits
  - Health Logs
    - Info collected from the 'fitbit' device

note:  
Health logs uses  
super key of  
timestamp and  
subscriber id.

Medical records uses  
incident ids as a key  
to distinguish the  
various incidents

