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# RFID Based Navigation

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COMPUTER SCIENCE



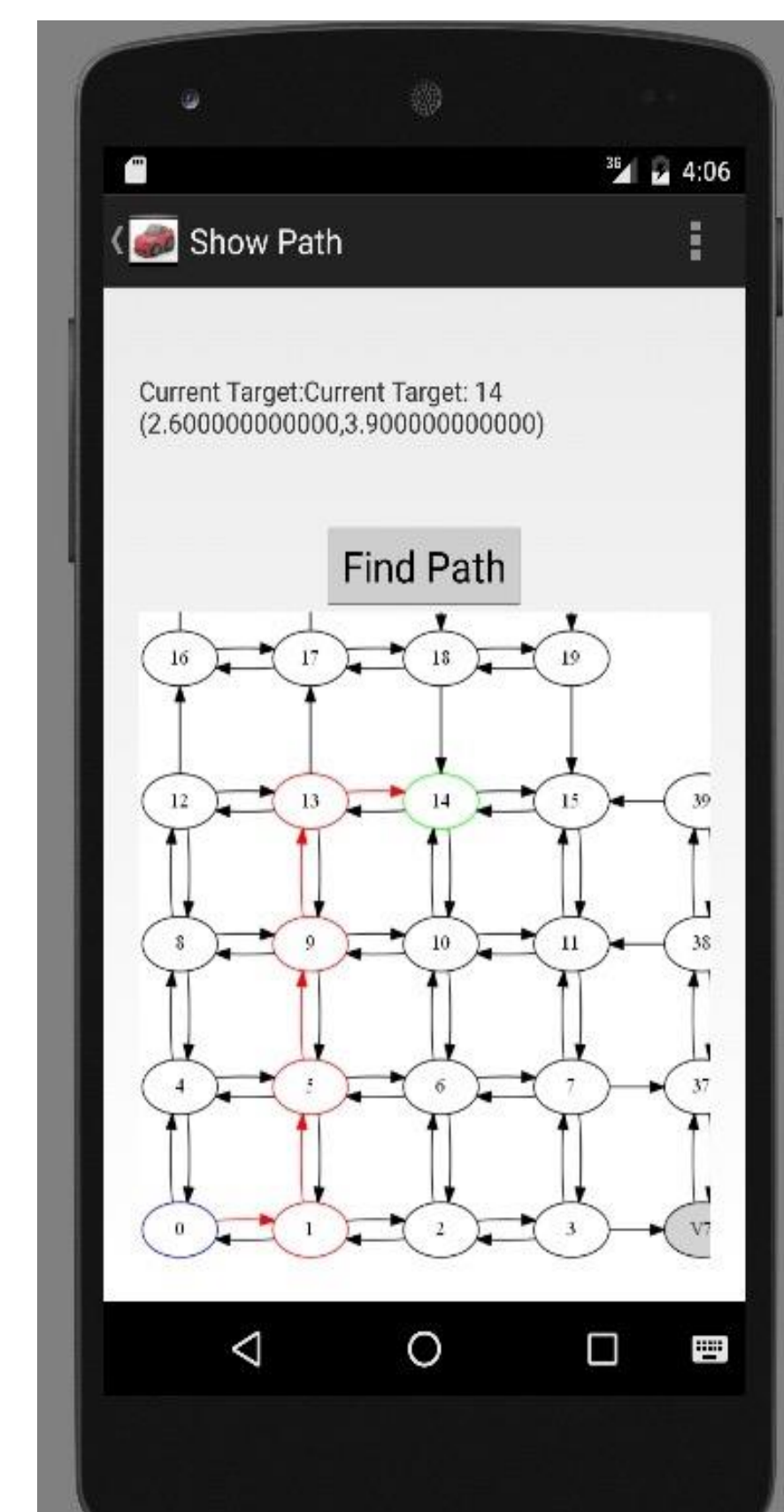
# RFID Based Navigation

CAPSTONE DESIGN  
EXPO 2016

## RFID Based Navigation

RFID based Navigation is an effective way to monitor and provide controlled traffic patterns for navigation and distribution of vehicles. This is accomplished by accessing the quickest and most convenient path, to destinations.

The navigation details gathered from the RFID reader of each vehicle is collectively organized and computed from a collection of received RFID tag data. The direction, speed, pattern, and destination of all vehicles on a given road network are then taken into consideration for optimal route to destinations.



## System Design

### Android App:

- Presents drivers with real time data to aid navigation across terrain in the shortest route possible.
- Drivers gain knowledge to receive turn by turn directions in real time over road network.
- Rerouting is initiated upon wrong turns and implemented at real time for the driver.

### Server/Database:

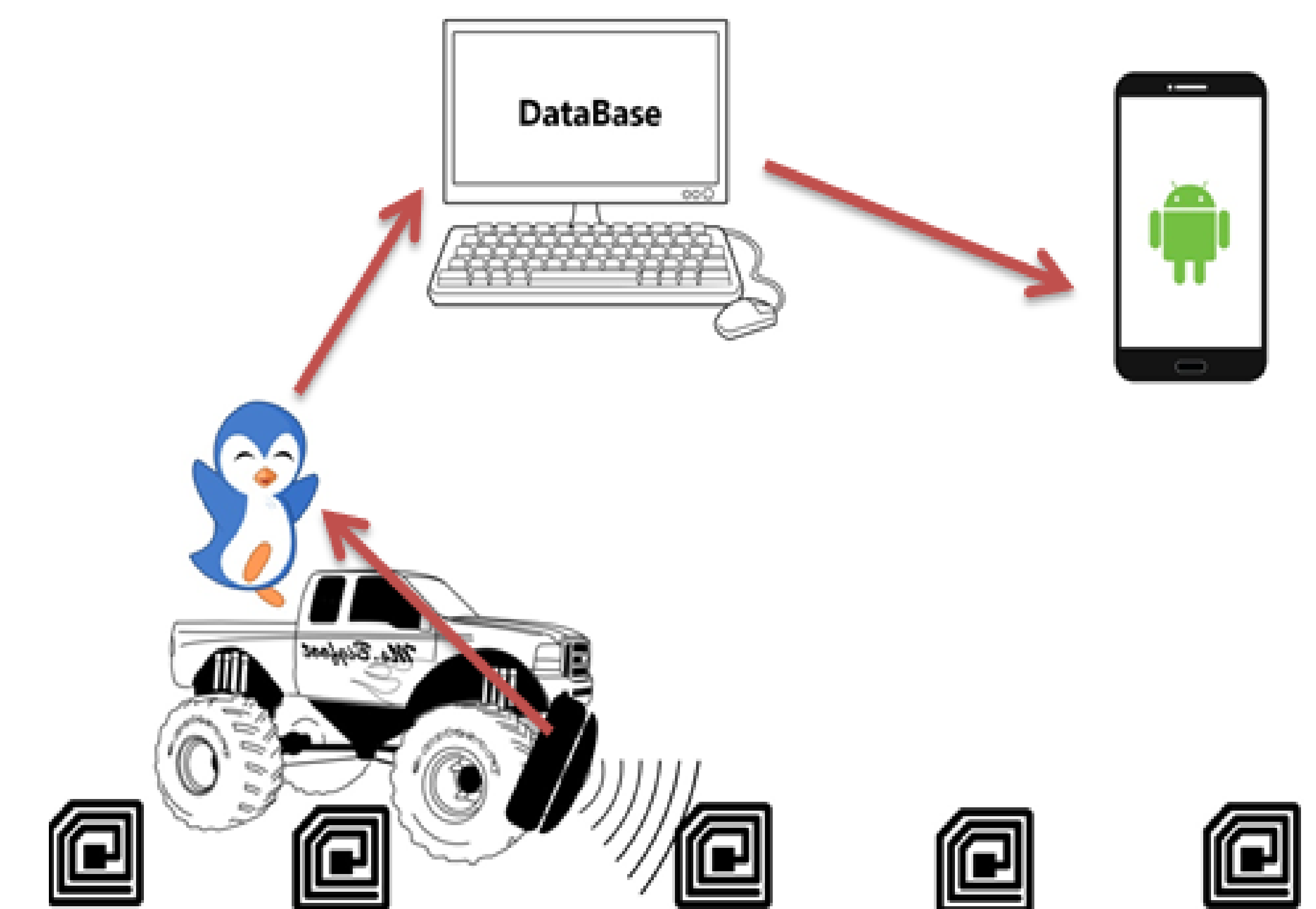
- Coordinates information exchange from vehicles to drivers in real time. This is shown on web based application as well as mobile application.

### RFID Reader:

- Uses received RFID tag data to determine location, direction, speed of car.
- No reliance on GPS (can be used indoors or underground)
- Can control vehicle to destination through a series of RFID checkpoints.

## System Implementation

- Adding inexpensive tags to road infrastructures allow a relatively inexpensive way to monitor traffic patterns of vehicles from commercial drivers as well as recreational drivers on the road.
- Traffic patterns received are monitored to help commercial assets find the most cost effective and time saving venture in delivery of product from point A to B.
- Future ventures into the implementation of RFID technology would gain a strong foothold into autonomous vehicles within road infrastructure.



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