Introduction
Vehicular Ad Hoc Network (VANET) is an ad-hoc network used for the communication of moving vehicles. It regards vehicles as both terminals and intermediate stations of a transmission in the network.

Aim & Objective
- Construct an Android application to simulate VANET.
- Provide material for further research on VANET and GPSR routing algorithm.

Methodology
- System Block Diagram:
  - The application layer selects optimal path based on the GPS location information provided by Android platform.
  - The transport layer applies TCP and UDP to construct the route and transfer messages and attachments.
  - The network layer offers IP address for unicast.

Connection Construction
- VANET is simulated by leveraging network layer, transport layer and application layer in Android environment using IP Address and User Name.
- Packet information is stored as the following format:

![Packet Information Diagram]

- TTL: Time to Live
- Type: Message Type
- Flags: Source Node Info, Destination Node Info
- Destination Node Info
- Message

Communication Procedure
- Spread broadcast packet in the network by asking neighbors about destination location.
- Reply Source Node of finding destination through an optimal route.
- Send message and attachment to Destination Node according to its GPS information.

![Communication Procedure Diagram]

GPS Location
GPS information can be obtained on Android platform through Wi-Fi providers in the GPS satellites.

Result
An Android application is constructed, which can be successfully installed and executed on a mobile phone whose operating system is Android 2.2 or above. It allows a user to send messages and files to another mobile phone. The application also shows the transmission paths of the messages and files.

Conclusion
Overall, the Android application achieves the simulation of VANET and performs well. Since the density of vehicles on the road keeps increasing nowadays, VANET is feasible and valuable. Based on the communication the VANET provides, the collision rate of vehicles and the traffic stress can be reduced sharply.