Unmmaned Vehicles Formation Control
Project code: SL-1b

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Background:
Formation control has been used in lots of applications, e.g., military application, search-and-rescue and planet exploration. It can replace human for dull, dirty and dangerous jobs thus it can save human efforts for doing other using tasks and increase the efficiency of work.

Introduction:
Three vehicles have to follow the path drawn in the computer program by the user. The path will be sent to the vehicles by WiFi. While moving along the path, the vehicles have to maintain a fixed formation.

Aims:
The aim of the project is to create a computer program for drawing the path and wireless data communication among vehicles and the three vehicles for tracking the path and maintaining formation.

Methodology:
- Approach for the leader to follow the path

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The path drawn will be converted to a series of coordinates. After the leader receives the coordinates, it will do the calculations and move from one point to another until the last point is reached.

- Approach for the formation control

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One of the vehicles will be the leader and the other two will be the followers. The followers will determine their formation positions relative to the leader while leader has no attempt to maintain the formation.

Results:
The figure below shows the computer program for drawing the path.

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The figure below shows how the leader track along the path drawn in the computer program.