1.

Our system is designed to be a variation on cruise control. Unlike the more basic systems that focus solely on maintaining the target speed at all costs, ours will try to balance going the desired speed without constantly adjusting itself. In other words it will get the point where it thinks it is close enough and only change if really needs to. Additionally this system can also account for the presence of a vehicle or obstacle in front and react to prevent a collision if necessary.

2.

Basically our system in broken down into two components with a greater emphasis on the second side of it. The first part is to detect whether or not there is a car (or any obstacle) in front the vehicle that is closer to be a hazard.

The second part is then to maintain speed that is close enough to what the driver has input and maintain that to ensure a comfortable journey.

Collision avoidance (front only, takes priority over cruise control)

Distance between you and the object in front.

If you are more than two seconds away from car in front run cruise control.

Else warn driver/brake (distances depend on car).

Cruise Control

If velocity is very slow, speed up a lot

If velocity is slow, speed up by a bit

If velocity is at target speed, do nothing

If velocity is fast, slow down

3.

See Attached Python code, change figures in “test.txt” while the code is running.

4.

While our system is capable of greatly reducing the persistent acceleration and deceleration when it comes to adjusting speed to match the target, it does come with a trade off. That is that the vehicle may never actually reach the target speed, which some people may find frustrating while driving. However we believe that is still the preferential option and that further refinement could help alleviate this limitation

5.

Tristan, made the powerpoint as well as these notes (with the groups input).

David and Kai developed the first version of our code together and then Kai refined it into the second version.

Hongyu made the graphs and helped a lot with the maths behind our system.

We all presented.