Notes Assignment 2

This is the second assignment in ARS. We are group number 9. Our task was to implement a robot moving with different kinds of noise which is filtered by a Kalman filter.

The first clip shows our robot moving with high speed and high noise. First of all, an explanation of the different colors: The white one is the real position, the green one is the estimated position and the trail of pink circles visualize our previous estimated positions. It moves by calculating the angle from its current estimated position to the coordinates of its next point of interest which is then mingled with noise. It starts from the top left and continues its journey through our maze to the top right corner.

In our next clip we use the same speed but only applied half the noise.

The third clip shows the robot moving at high speed without any noise. As one can see the path is quite straight. The visible offset is caused by faulty sensor data.

In the next clip we set the speed to a low level and use a medium amount of noise. Due to the low speed the robot takes more steps which allows more measurements. This smoothens the path.

The fastest possible speed for our robot influenced by medium noise is displayed in clip 5. This pushes the robot close to the mazes limits.

Our last clip proves what would happen if we refrained from using the Kalman filter.