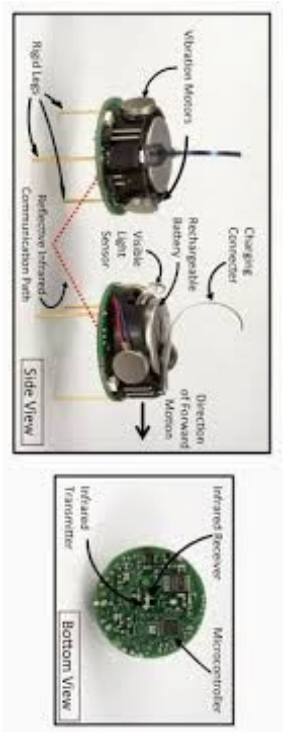
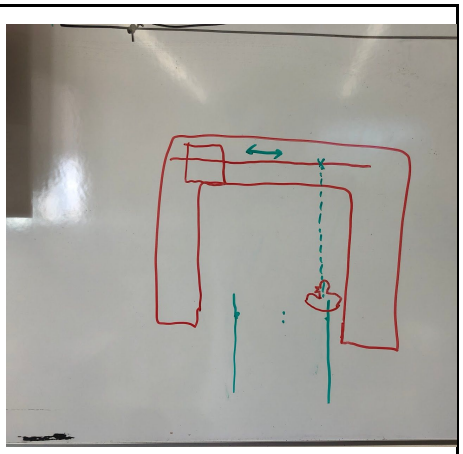
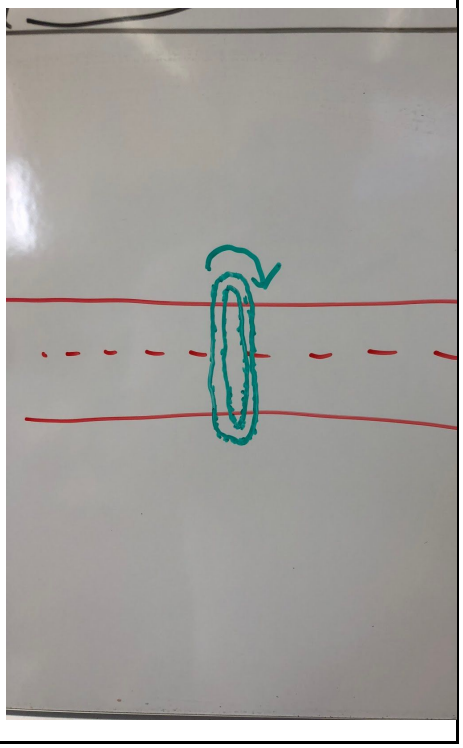
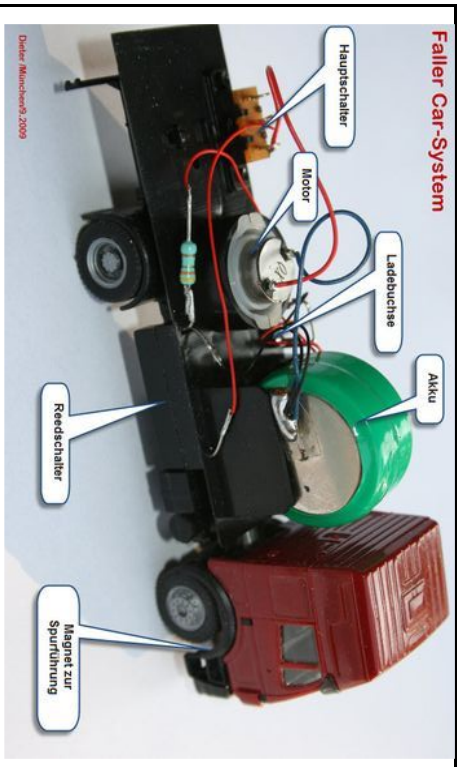
Possible Solutions for the duckie crossing

To bring another challenge to the duckiebots, we want to create pedestrian crossings on straight roads tiles. The duckies should safely cross the road and force the duckiebots to stop for a certain amount of time.

Title	Description	Picture / Sketch
Vibrating Duckies	Inspired by the Kilobots of Harvard: https://www.kilobotics.com/documentation The duckies use two vibration motors for dedicated movement in straight direction and rotation. + Autonomous, can move independant, not limited to any boundaries except battery, - Expensive, over 30 components needed if done similarly like the kilobot, calibration needed, space limited in duckie, friction of tile is a critical parameter, complicated control systems problem	
Walking Duckies	Putting feet on the duckies, which then walk straight within a given path. They turn around with a motor which rotates the plate where the duckie is standing on. + Relatively simple, “cheap”, feet - Need 2-3 weeks to get all parts, not controllable/timeable without another motor, needs a lot of testing.	

Linear Motor	A motor, which can only go forward and backwards. It carries a rope connected to a duckie which hovers over the street. + Easy to build, not much effort needed - Duckie would go backwards, would need a bridge/something similar to cover the motor. Movement would look very artificial.	
Moving Walkway	The duckies stand on a moving walkway which is rotating at the end of the road + Looks similar to a realworld crossing, can carry a whole family, can be given a certain parameter for continuous movements. - Complicated setup, many possible points of failure, not all parts are easy to get in Asia	

Magnet Route	Use the “Faller Car System”: https://www.conrad.ch/de/car-system-h0-start-set-mb-o-405-nachtbus-faller-161499-1226567.html The car has a built-in motor and automatically follows the lane we set under the tile. We place the car inside the duck. + Easy setup, path can make any turn wanted, - Around 200.-, need a car for each duckie, needs to get charged,	
Duckiecar	Using a small duckiebot with only the minimal amount of features + Got everything already from the duckiebots, needs only 1 script to work - Is no real duckie crossing, doesn’t look nice, expensive,