## Simulation Logic:

1. Find nearest position the is perpendicular to vehicle direction
2. Find angle at the located position
3. Find error between current & desired path, & velocity (longitudinal or combined?)
4. Look ahead to see when next change in velocity will occur, brake / accelerate to reach the target velocity
5. Have start / stop condition? (Flag at the point where lap is complete?)

## Required Information:

1. Table of the Track

|  |  |  |  |
| --- | --- | --- | --- |
| Target Velocity | X | Y | phi |

## How to get Information:

1. Simple input table that is converted into track

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Target Velocity Enter | Target Velocity Exit | Type of section | Info #1 | Info #2 | Info #3 |

# Types:

## Straight:

1. Distance

## Slalom

1. Frequency
2. Amplitude
3. Distance

## Non-constant radius turns

1. Angle
2. Initial radius
3. Slope

## Expanded types:

1. Straight
2. Constant Radius Turn
3. Chicane
4. Non-constant Radius Turn
5. Slalom
6. Bend