**Program Name : NavigateSimulator**

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**How to run the program.**

1. Extract TruckTrace.zip in your computer.
2. Note that you do need to have the dotnet core runtime installed: <https://www.microsoft.com/net/download/dotnet-core/2.1>
3. Go to the following folder

***\TruckTrace\ConsoleApp4\bin\Debug\netcoreapp2.1\***

1. Open command prompt execute the program as follows.

***dotnet NavigateSimulator.dll*** *<Filename with extension and full path> <custom delay> <debugmode Y or N>*

Example : ***dotnet NavigateSimulator.dll*** *C:\TEMP\route\_example.csv 2 Y*

**Parameters**

*Parameter 1 : csv input filename with extension and full path (mandatory parameter)*

*Parameter 2 : custom delay in seconds (default = 1)*

*Parameter 3 : if you need to see printed outputs on screen (default = Y)*

**Program application extension**

*1. NavigateSimulator.dll*

**ProgramSolution file**

*1.NavigateSimulator.sln*

**Program class files**

1. *Navigation.cs*
2. *PostRequest.cs*
3. *Program.cs*
4. *ReadInputCsv.cs*
5. *RouteInfo.cs*

**Dependencies**

1. *NuGet – Newtonsoft.Json*

**Assumptions**

1. Csv file format is fixed.
2. Csv file is correct and is no need to be validated or reformatted.
3. Records starting with ‘T’ is only considered for output.

**Equations used**

1. Velocity equation is chosen : V^2 = U^2 + 2as

‘v’ is velocity to be calculated

‘u’ is current velocity before accelerating

‘a' is the acceleration

‘s’ is the distance interval.

1. Calculations are done in meteres and seconds , but to match the speed limit and to output I have converted it to km/hr
2. Speed limit in m/s^2 = SpeedLimit \* 0.277777

**Known Errors**

1. Http post request is not working on the webmap. Hence the outputs are written to the standard output screen.