**Team B – Ekathra**

**TEST PLAN**

**Introduction**

The traffic modeling system is a simulation system through which different types of road would be attached to simulate the behavior of traffic. There are several components like roundabout, 2-way road, 4-way, signals, and T-junction so that they would act network of roads. To start the simulation, the user needs to input some parameters such as: number of cars per minute, reaction rate.

**Scope**

**The main objective of this project is to deliver a website that can help to simulate the traffic using different scenarios will be tested on this website before they are delivered to the client.**

**Test Strategy**

The following are the test cases needed to be tested before the product is delivered to the client:

* To check whether the user drag and drops the type of roads that he needed to simulate.
* To check whether the user connects the type of road in an appropriate way.
* After connecting user should get a clear view of the roads that he has selected and then he can go back to re-customize.
* Every entrance of the road should have car generator, based on which it should have some default values for the inputs of the cars and change those if needed.
* If the user gives some values and leaves remaining value system must take the default value which are set before.
* To check whether the user gives the correct percentages upon which an adding there must be 100%.
* Every road should have a speed limit and the car must go according to that speed limit on the road.
* To check whether the user has the credibility to change the speed limits of the road if he needs.
* We should check cars which are generated randomly should slow down with respect to the speed of the car before.
* To check cars must be able to take random direction by which user has selected.
* For road with a signal check that the signal synchronizes with the directions of the car which it is allowed and proper flow is maintained at the traffic.
* For a signaling system signal time should vary based on the type of road like a main road, High way etc.
* First testing should be done on individual scenarios and later all the scenarios are combined through drag and drop feature and it is tested by implementing various combinations of the project and then it is delivered to the client.
* Generating a car without giving the input values.
* Generating a car with giving some input values.
* Drag a roundabout and populate cars moving in the opposite direction with same speeds and check whether their move in directions using a random manner and stop at the signals.
* Drag a roundabout, 2-way and 4-way and join them after that populate cars moving in the opposite direction with different speeds whether they move in specified directions using a random manner, stop at the signals and the car must be deleted when it reaches the end of the road.
* Drag a 2-way and populate cars moving in the opposite direction with same speeds and check whether their move in directions using a random manner and stop at the signals.
* Drag a 4-way and populate cars moving in the opposite direction with same speeds and check whether their move in directions using a random manner and stop at the signals.
* Drag a roundabout, 4-way, 2-way junctions and join them and populate cars moving in all directions with same speeds and check whether their move in directions using a random manner with the given percentage.
* Drag any type of road and populate cars moving in all directions and check the buffer time.
* Drag any 2 types of road and populate cars moving in all directions and check that no collision occurs between cars.
* Drag any type of road and populate cars using default values and check the buffer time.
* Drag any 2 types of road and populate cars using default values and check that no collision occurs between cars.
* Drag any type of road and populate cars using the given values and check the buffer time.
* Drag any 2 types of road and populate cars using the given values and check that no collision occurs between cars.

**Environment Requirements**

**A fully loaded system with all the software’s and tools installed that are required for the project to run. At present we thought of performing the manual testing for the entire project. Later on we can shift to using tools.**

**Test Schedule**

**We will perform testing at the end of the each module as specified in the work breakdown structure. At the end, we will perform the unit testing before deploying the application.**

**Control Procedures**

Everyone in the team was assigned to the particular task and once the individual delivers the output the code and the document is checked thoroughly.

* Reviews:

After testing each and every block of code a review or comment must be made.

* Bug Review meetings:

Whenever there is a bug or error found, we need to report to the particular individual who is responsible for building the part of the code.

* Change Request:

If any requirement that does not match with the code, then the proper change request will be initiated and sent to the development team. Several versions of change request documents will be maintained for the future reference.

* Defect Reporting:

When a defect is identified an immediate feedback was provided to the team with proper comment and issue regarding the defect.

**Deliverables**

A fully loaded website with all the features such as drag and drop, buttons and on-click actions for the different types of roads, intersections and roundabouts. Placing the car at different locations and giving the speeds for every car. These are the documents that will be given to the client at the end of the project such as Test Plan, Test Case, Summary Report, Deployment Guide and Developer’s Manual

**Responsibilities**

|  |  |
| --- | --- |
| Test Plan | Rama Naveen Kommuri. |
| Test Case | Rama Naveen Kommuri, Ashwini Cherukuri. |
| Manual Testing | Vamsy Chowdary Bobba and Sahil Nokhwal. |

**Approvals**

|  |  |  |
| --- | --- | --- |
|  | **Project Manager** | **Quality & Testing Manager** |
| **Name** | Rupanandha Moori | Rama Naveen Kommuri |
| **Signature** |  |  |