Test Plan and Report

Product Name: VectorKart
Team Name : Megatherium Within

System Tests:

1. As a student, I want to visualize velocity and acceleration because I'm having a hard time grasping this concept in my physics class.
    a. Acceptance Criteria:
        i. Be able to visualize 3 vector components (current velocity, acceleration and new velocity)
        ii. Visualization of vectors represents vector addition
        iii. Break down instantaneous velocity as speed and angle

Acceptance Test:

1. Move mouse cursor on canvas to see initial acceleration from standstill
2. Click on the track to confirm move and observe car qmovement follows vector and àaaqchanged stats in UIqqqqqqqqqdashboard
3. Repeat for player 2
4. Do step 1 again and notice the three component vectors
5. Do steps 2 and 3 again and notice the increase in movement distance per turn (speed) and changes in direction (angle)

2. As a player I want to get live feedback on my gameplay so I can improve and learn from my mistakes.
    a. Acceptance Criteria
        i. Have visual feedback when a player goes off-track
        ii. Have lose penalty for going off-track too often
        iii. Have a win condition when the player completes a lap

Acceptance Tests:

1. Move mouse cursor on canvas to see initial acceleration from standstill
2. Click in front of the car to accelerate forward
3. Repeat for Player 2
4. Continue clicking towards the outside of the track for both player turns
5. Observe that when the vector is clicked off track the corresponding player dashboard highlights in red and increments the off track counter
6. Observe that once off-track reaches maximum of 3 that player loses the race (pop-up message)

7. Press the Reset button to reset the game
8. Repeat steps 1 and 2
9. Continue to take turns clicking on the track this time to complete the loop of the track ensuring that vectors will not accelerate the car too far off the track or cut the corner too sharply
10. Once the first car to reach the section where they started and cross the finish line does so, observe a message showing the win condition for that player

Unit Tests:

See the `tests` directory in the GitHub repository.