

ICT2x01 Team P4-5

Little Runner User Acceptance Test (UAT) Manual

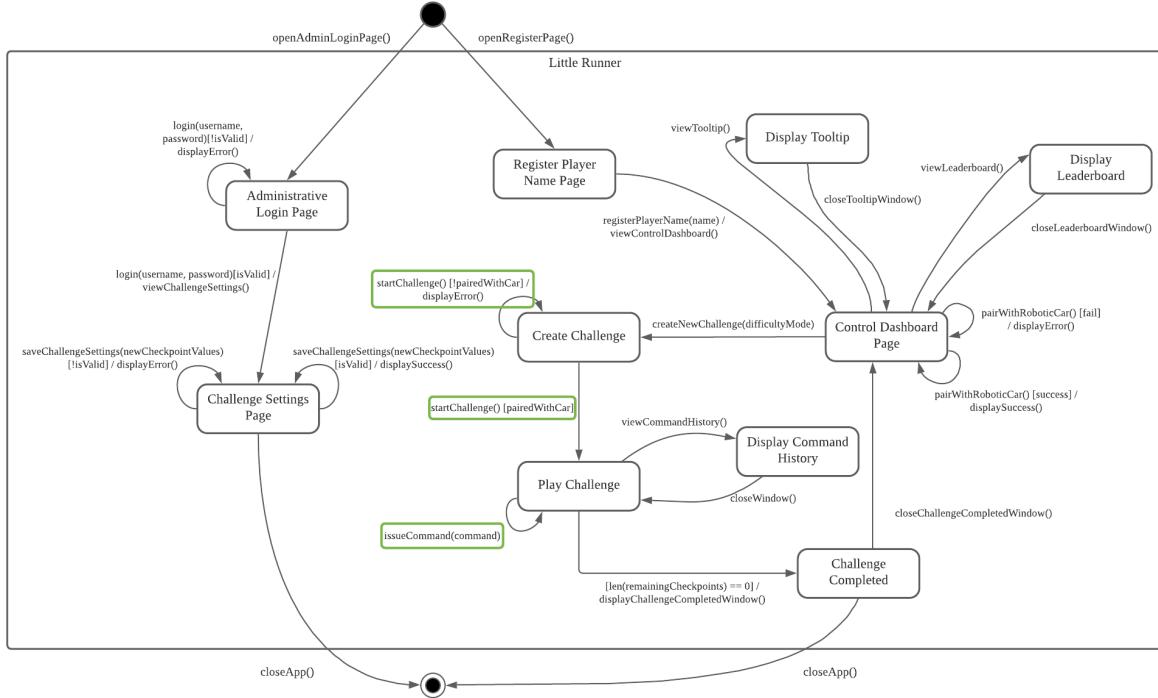
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1. Updates

1.1 Updated System State Diagram

Highlighted in green are the refinements made to the System State Diagram



1.2 System State Diagram Changelogs

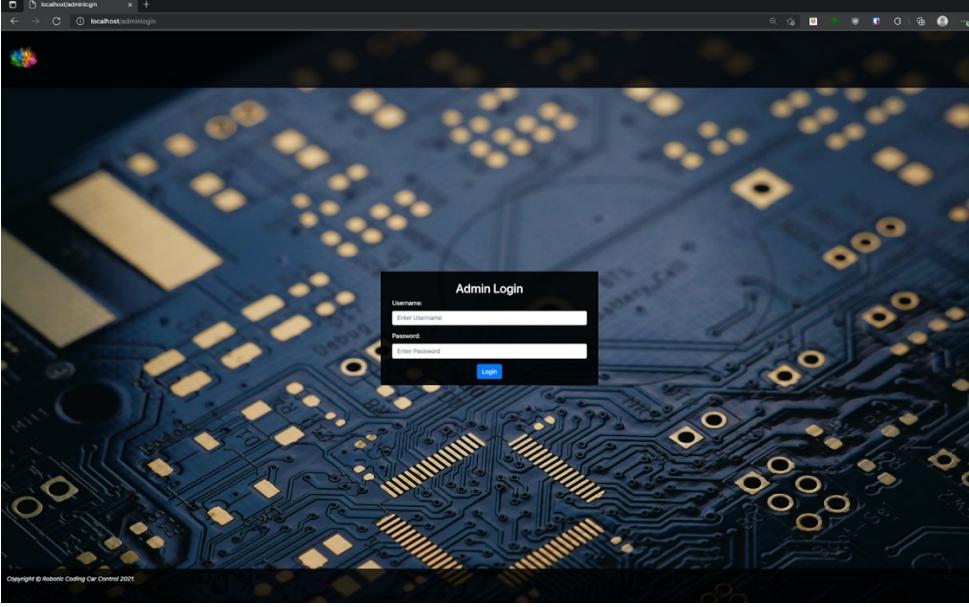
- Added transition conditions for “`startChallenge()`” edges
- Removed transition conditions for “`issueCommand(command)`” edges

1.3 System Test Case Changelogs

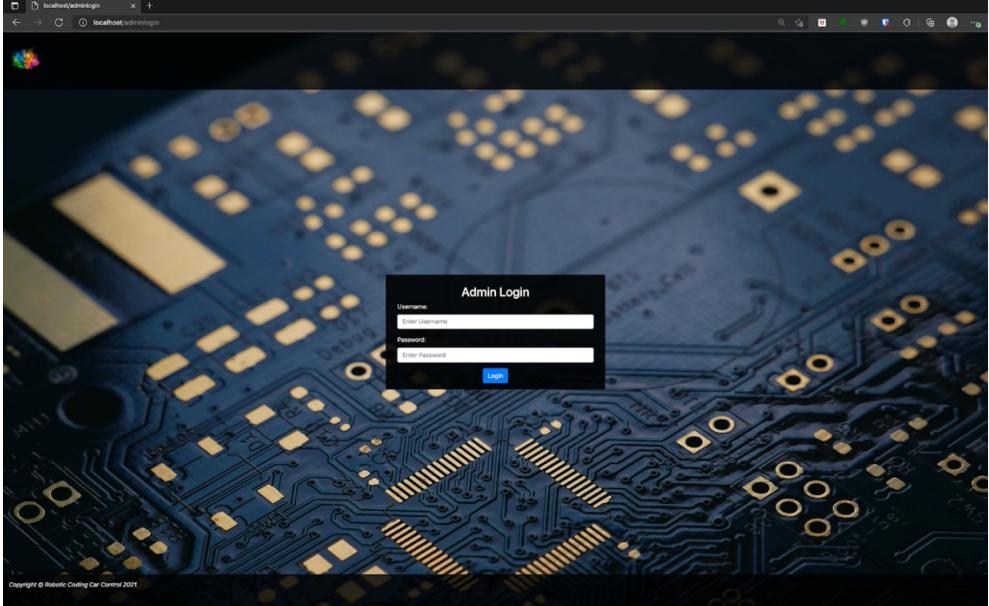
- Modified existing test case for “`startChallenge()`” to “`startChallenge() [pairedWithCar]`”
- Added test case for “`startChallenge() [!pairedWithCar]`”
- Modified test case for “`issueCommand(command) [pairedWithCar]`” to “`issueCommand(command)`”
- Removed test case for “`issueCommand(command) [!pairedWithCar]`”
- Reordered test cases for better flow

2. System Test Cases

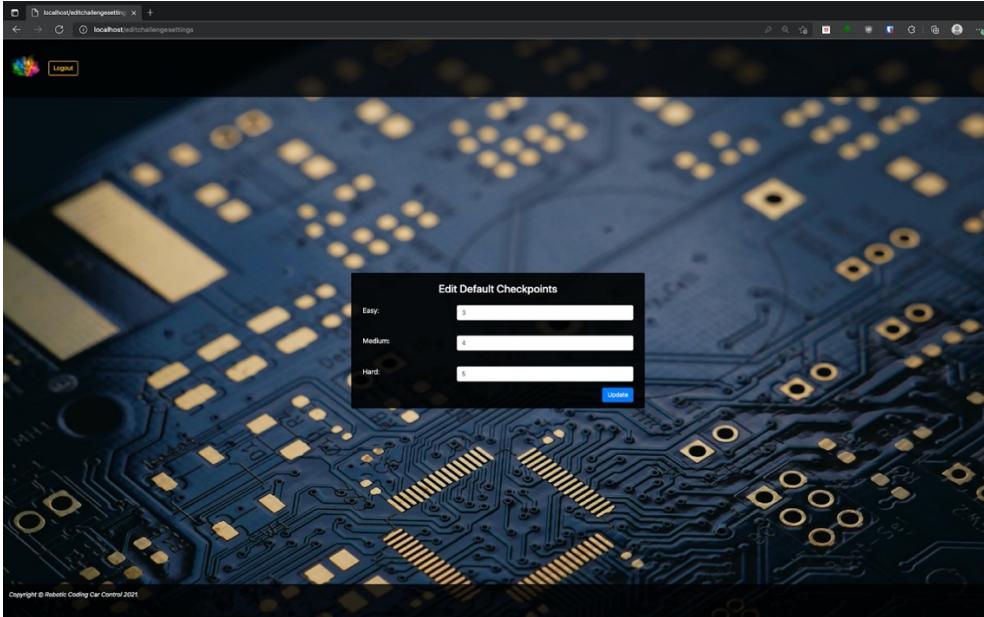
2.1 Open Administrative Login Page

Test Case ID	ST01
Test Case Name	Open Administrative Login Page
Relevant Use Case	UC01
Pre-Condition(s)	<ol style="list-style-type: none">1. Web Server is already running on local machine (current computer)2. User has opened a browser (Google Chrome / Microsoft Edge / Mozilla Firefox) tab
Steps	<ol style="list-style-type: none">1. Input "localhost/adminlogin" in address bar of browser2. Press enter3. Observe screen
Expected Result	
Actual Result	
P/F	

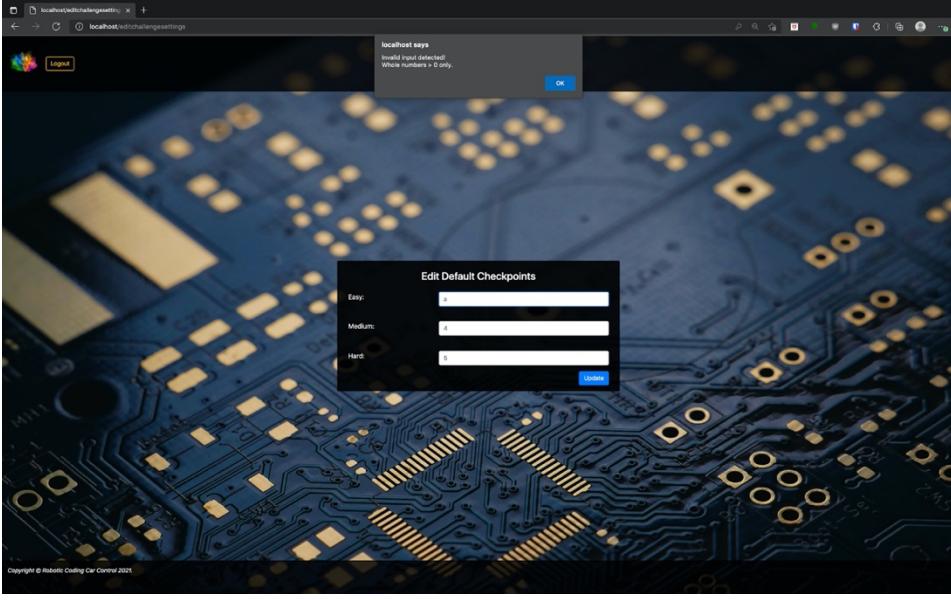
2.2 Attempt Login with Invalid Admin Credentials

Test Case ID	ST02
Test Case Name	Attempt Login with Invalid Admin credentials
Relevant Use Case	UC01
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Administrative Login Page
Steps	<ol style="list-style-type: none"> 1. Input “admin” into the username field 2. Input “wrongpassword” into the password field 3. Press enter 4. Observe screen
Expected Result	
Actual Result	
P/F	

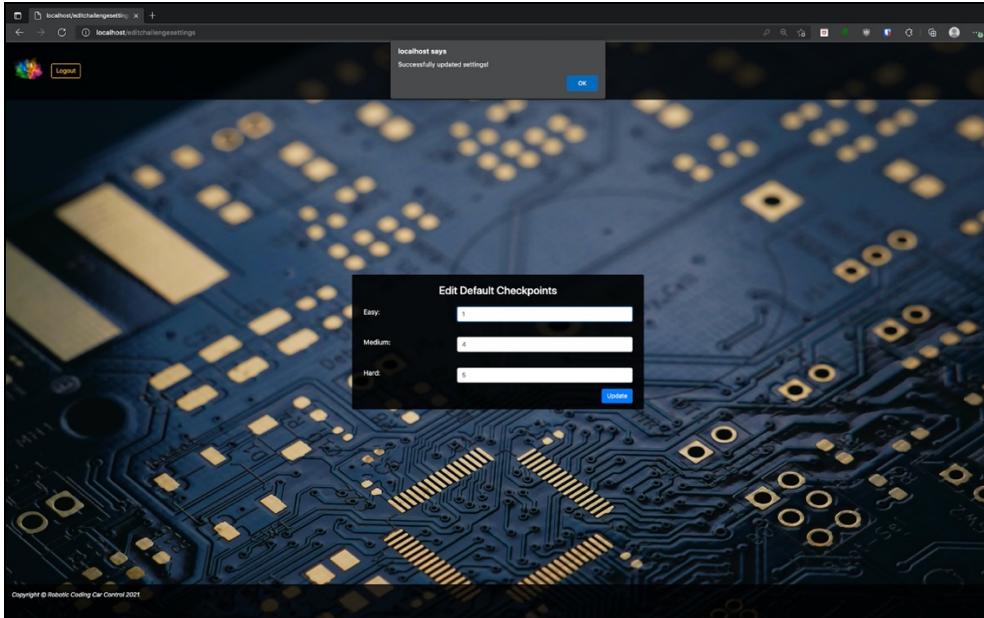
2.3 Attempt Login with Valid Admin Credentials

Test Case ID	ST03
Test Case Name	Attempt Login with Valid Admin Credentials
Relevant Use Case	UC01
Pre-Condition(s)	1. Currently on the Administrative Login Page
Steps	<ol style="list-style-type: none"> 1. Input “admin” into the username field 2. Input “admin” into the password field 3. Press enter 4. Observe screen
Expected Result	
Actual Result	
P/F	

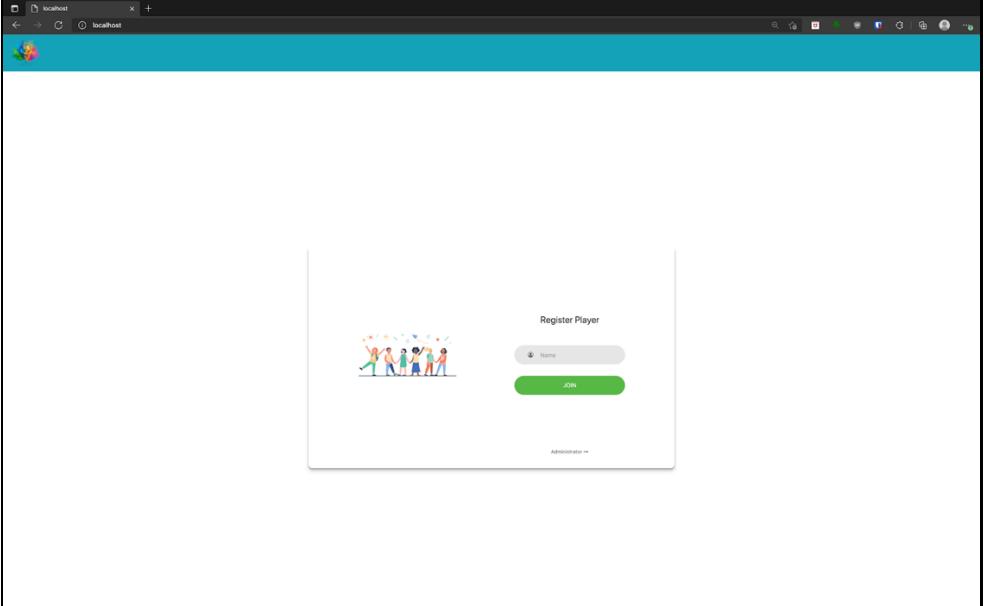
2.4 Invalid Input for New Challenge Settings

Test Case ID	ST04
Test Case Name	Invalid Input for New Challenge Settings
Relevant Use Case	UC02
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Challenge Settings Page
Steps	<ol style="list-style-type: none"> 1. Modify the value for the Easy mode setting to "a" 2. Press the "Update" button
Expected Result	 <p>The screenshot shows a web browser window titled 'localhost/editchallengesettings'. A modal dialog box is displayed in the center, titled 'Edit Default Checkpoints'. It contains three input fields: 'Easy' with value 'a', 'Medium' with value '1', and 'Hard' with value '2'. Below the inputs is a blue 'Update' button. At the top of the page, there is another smaller dialog box with the message 'localhost says Invalid input detected! Whole numbers > 0 only.' and an 'OK' button.</p>
Actual Result	
P/F	

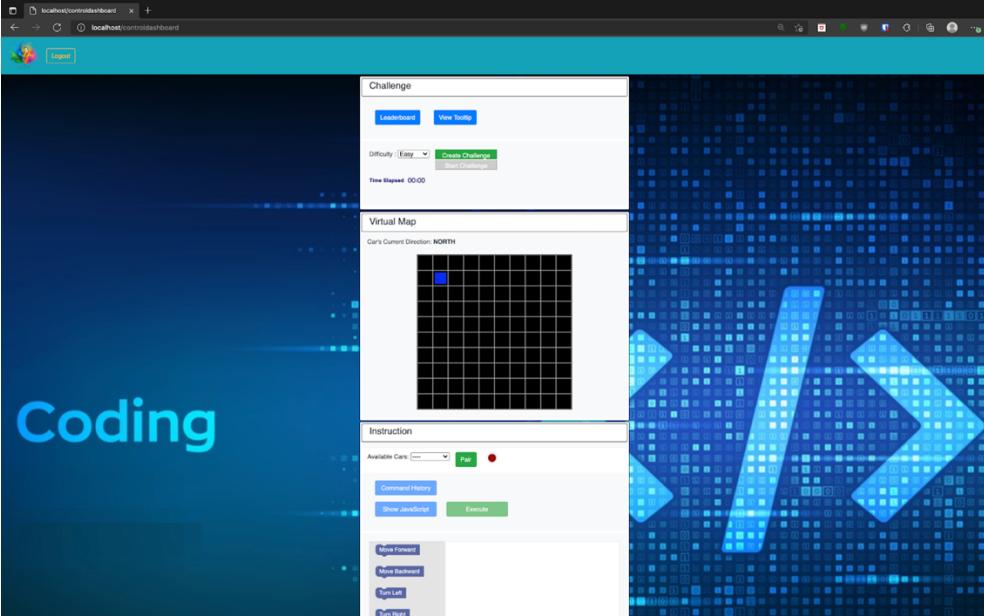
2.5 Valid Input for New Challenge Settings

Test Case ID	ST05
Test Case Name	Valid Input for New Challenge Settings
Relevant Use Case	UC02
Pre-Condition(s)	1. Currently on the Challenge Settings Page
Steps	<ol style="list-style-type: none"> 1. Modify the value for the Easy mode setting to "1" 2. Press the "Update" button
Expected Result	
Actual Result	
P/F	

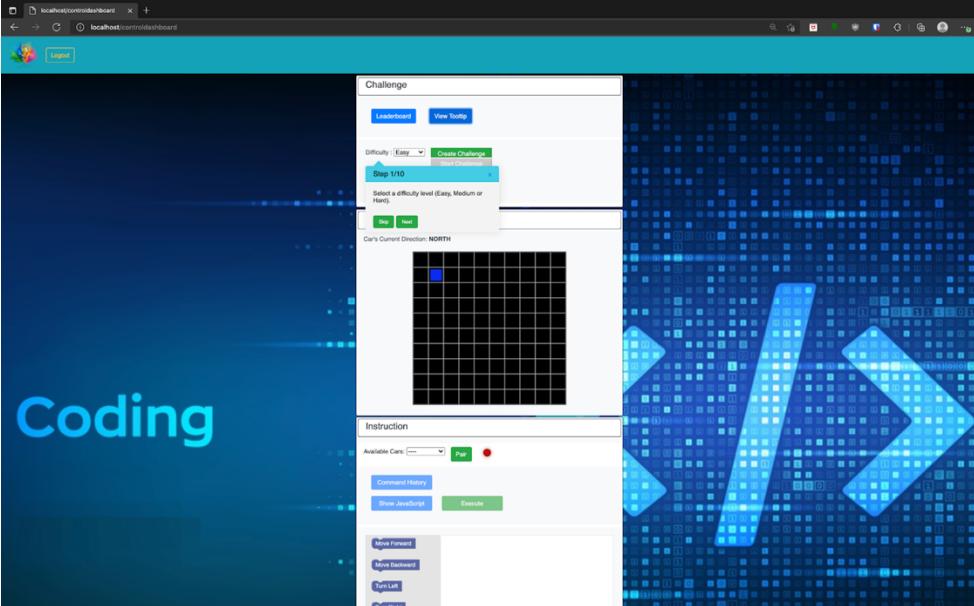
2.6 Open Register Player Name Page

Test Case ID	ST06
Test Case Name	Open Register Player Name Page
Relevant Use Case	UC03
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Web Server is already running on local machine (current computer) 2. User has opened a browser (Google Chrome / Microsoft Edge / Mozilla Firefox) tab
Steps	<ol style="list-style-type: none"> 1. Input "localhost" in address bar of browser 2. Press enter 3. Observe screen
Expected Result	
Actual Result	
P/F	

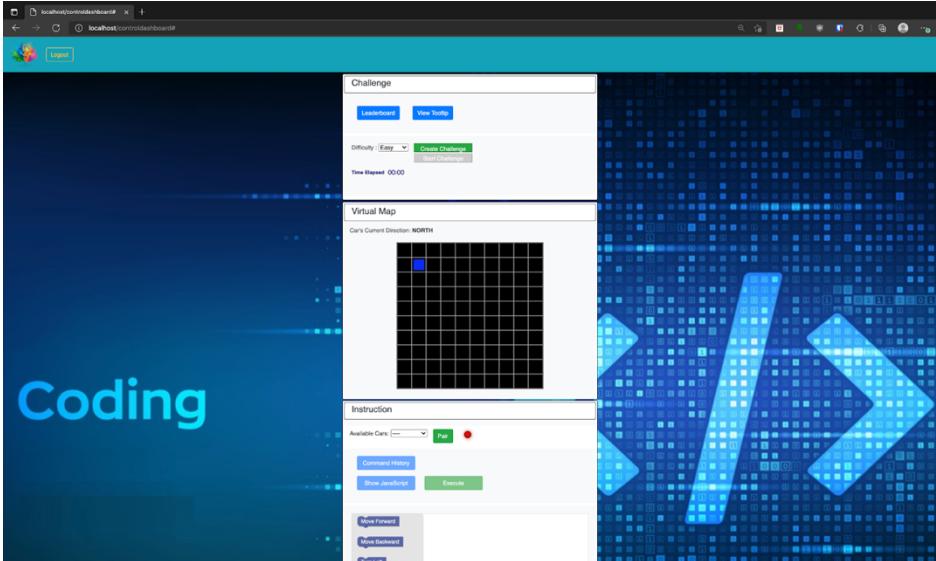
2.7 Register a Player Name

Test Case ID	ST07
Test Case Name	Register a Player Name
Relevant Use Case	UC03
Pre-Condition(s)	1. Currently on the Register Player Name Page
Steps	<ol style="list-style-type: none"> 1. Input “testplayer” in the player name field 2. Press enter 3. Observe screen
Expected Result	
Actual Result	
P/F	

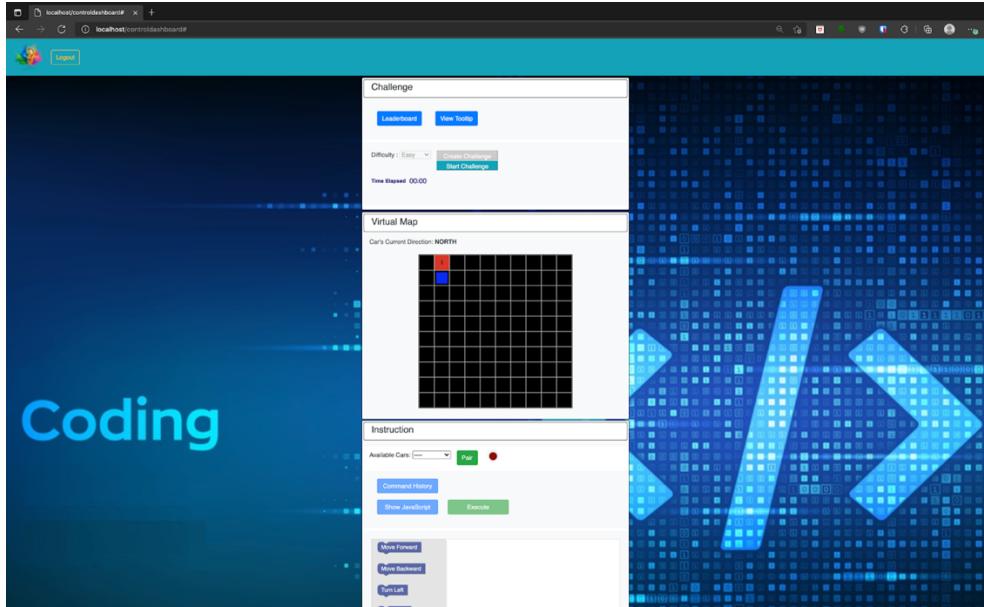
2.8 Open the Tooltip Window

Test Case ID	ST08
Test Case Name	Open the Tooltip Window
Relevant Use Case	UC06
Pre-Condition(s)	1. Currently on the Control Dashboard Page
Steps	1. Press the “View Tooltip” button 2. Observe the screen
Expected Result	 <p>The screenshot shows a web browser window titled "localhost:controldashboard". The main page has a teal header with a "Login" button. Below the header, there's a large blue background with the word "Coding" in white. On the right side, there's a grid-based challenge area and an instruction panel. A tooltip window is overlaid on the challenge area, containing buttons for "Leaderboard" and "View Tooltip", a dropdown for "Difficulty" set to "Easy", and a "Create Challenge" button. The tooltip also displays "Step 1/10" and a note about selecting a difficulty level. At the bottom of the tooltip, it says "Car's Current Direction: NORTH". The instruction panel below the tooltip shows a car icon pointing North, with buttons for "Available Cars" (set to "P01"), "Command History", "Show JavaScript", and "Execute". Below these are buttons for "Drive Forward", "Drive Backward", "Turn Left", and "Turn Right".</p>
Actual Result	
P/F	

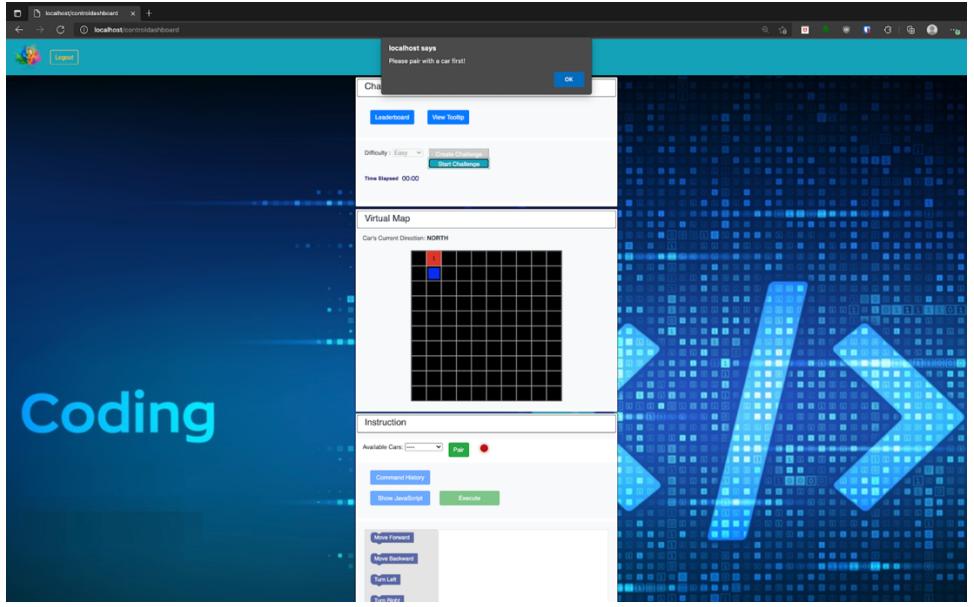
2.9 Close the Tooltip Window

Test Case ID	ST09
Test Case Name	Close the Tooltip Window
Relevant Use Case	UC06
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. The Tooltip Window is currently open
Steps	<ol style="list-style-type: none"> 1. Press the “X” button on the Tooltip Window 2. Observe screen
Expected Result	
Actual Result	
P/F	

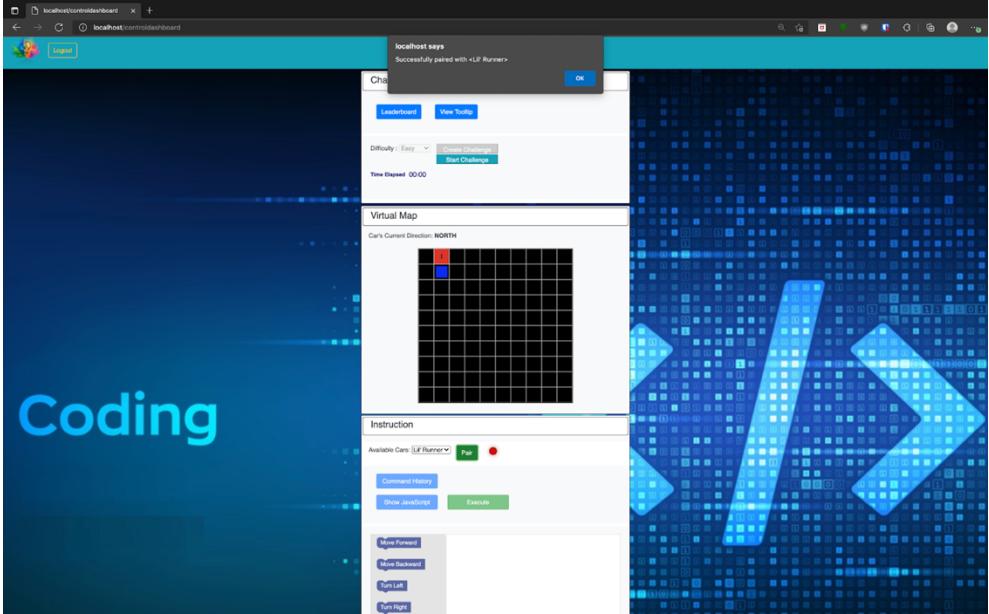
2.10 Create New Challenge Instance

Test Case ID	ST10
Test Case Name	Create New Challenge Instance
Relevant Use Case	UC08
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page
Steps	<ol style="list-style-type: none"> 1. Select the “Easy” difficulty level 2. Press the “Create Challenge” button 3. Observe the screen
Expected Result	
Actual Result	
P/F	

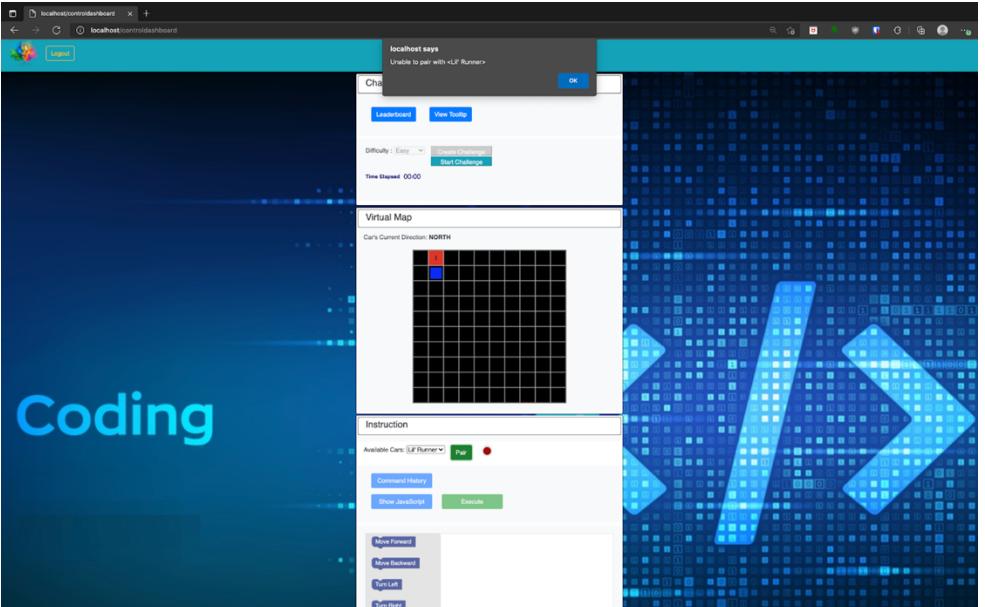
2.11 Fail to Start Challenge

Test Case ID	ST11
Test Case Name	Fail to Start Challenge
Relevant Use Case	UC09
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. A new Challenge has already been created 3. NOT paired with the Robotic Car
Steps	<ol style="list-style-type: none"> 1. Press the “Start Challenge” button 2. Observe screen
Expected Result	 <p>The screenshot shows the Control Dashboard interface. In the center, a modal window titled "Challenge" is displayed with the message "Please pair with a car first!". Below the message are two buttons: "OK" and "Cancel". The background of the dashboard shows a "Virtual Map" with a grid and some blue arrows indicating movement paths. On the left side of the dashboard, the word "Coding" is prominently displayed.</p>
Actual Result	
P/F	

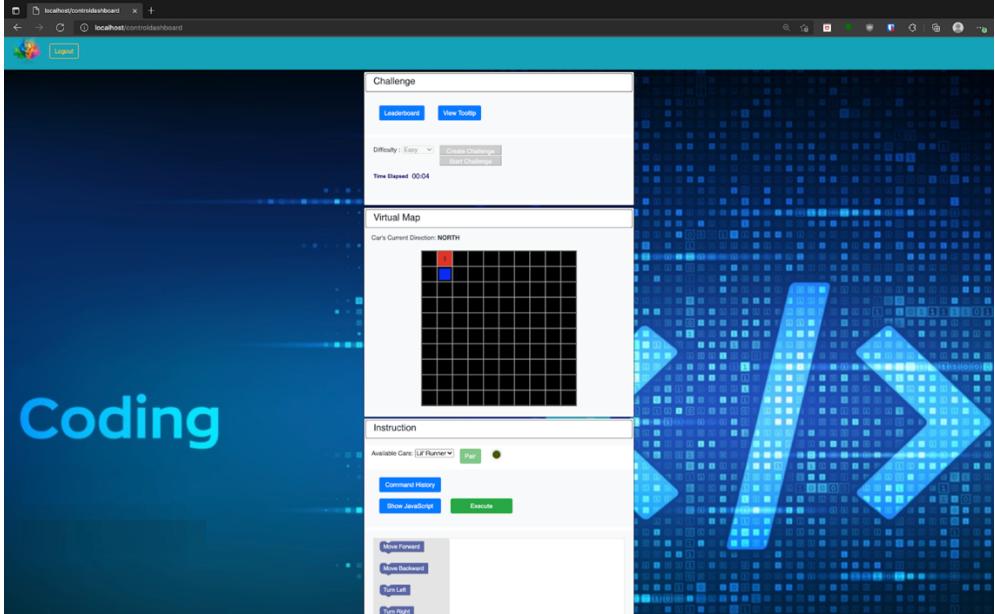
2.12 Successfully Pair with Robotic Car

Test Case ID	ST12
Test Case Name	Successfully Pair with Robotic Car
Relevant Use Case	UC07
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. Robotic Car is already connected to the server
Steps	<ol style="list-style-type: none"> 1. Select "Lil' Runner" from the "Available Cars" dropdown list 2. Press the "Pair" button 3. Observe the screen
Expected Result	 <p>The screenshot shows a web browser window titled 'localhost/controldashboard'. A modal dialog box is open, displaying the message 'localhost says Successfully paired with <Lil' Runner>' with an 'OK' button. Below the modal, the main dashboard interface is visible. It features a 'Virtual Map' section with a 10x10 grid showing a small blue car icon at the top-left corner. The text 'Car's Current Direction: NORTH' is displayed above the map. To the right of the map is a large, stylized graphic of blue arrows pointing upwards and to the right. On the left side of the dashboard, the word 'Coding' is prominently displayed in large blue letters. At the bottom of the dashboard, there is an 'Instruction' section with buttons for 'Move Forward', 'Move Backward', 'Turn Left', and 'Turn Right'.</p>
Actual Result	
P/F	

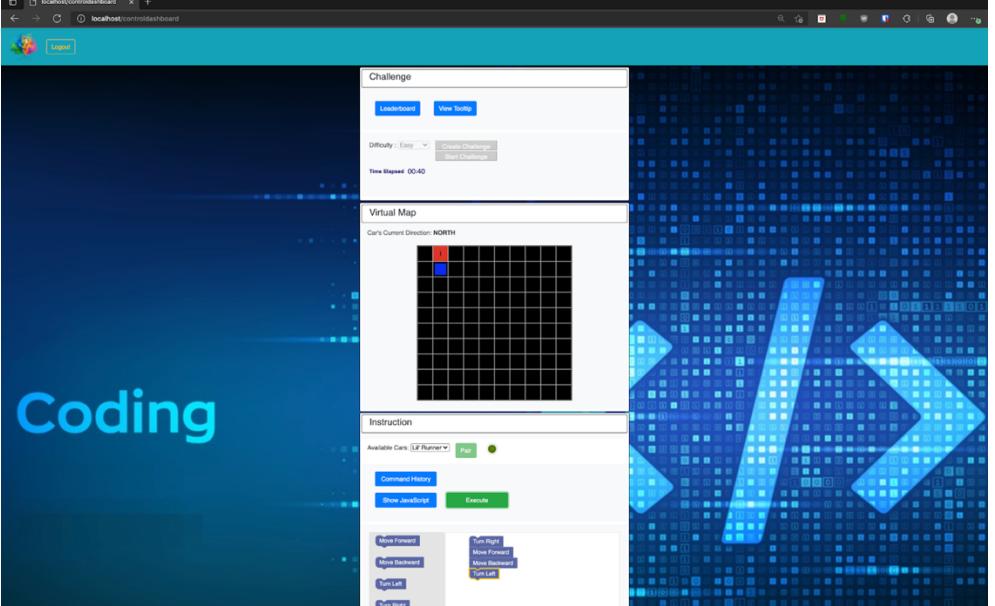
2.13 Fail to Pair with Robotic Car

Test Case ID	ST13
Test Case Name	Fail to Pair with Robotic Car
Relevant Use Case	UC07
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. Robotic Car is not connected to the server
Steps	<ol style="list-style-type: none"> 1. Select “Lil’ Runner” from the “Available Cars” dropdown list 2. Press the “Pair” button 3. Observe the screen
Expected Result	 <p>The screenshot shows the Control Dashboard interface. A modal dialog box is centered, displaying the message "localhost says Unable to pair with <Lil' Runner>" with an "OK" button. Below the modal, the main dashboard shows a "Virtual Map" with a 10x10 grid and a small red car icon at the top-left corner. The text "Car's Current Direction: NORTH" is visible above the map. On the right side of the dashboard, there is a large blue graphic featuring two stylized arrows pointing right. The overall background has a dark blue theme with the word "Coding" in large white letters.</p>
Actual Result	
P/F	

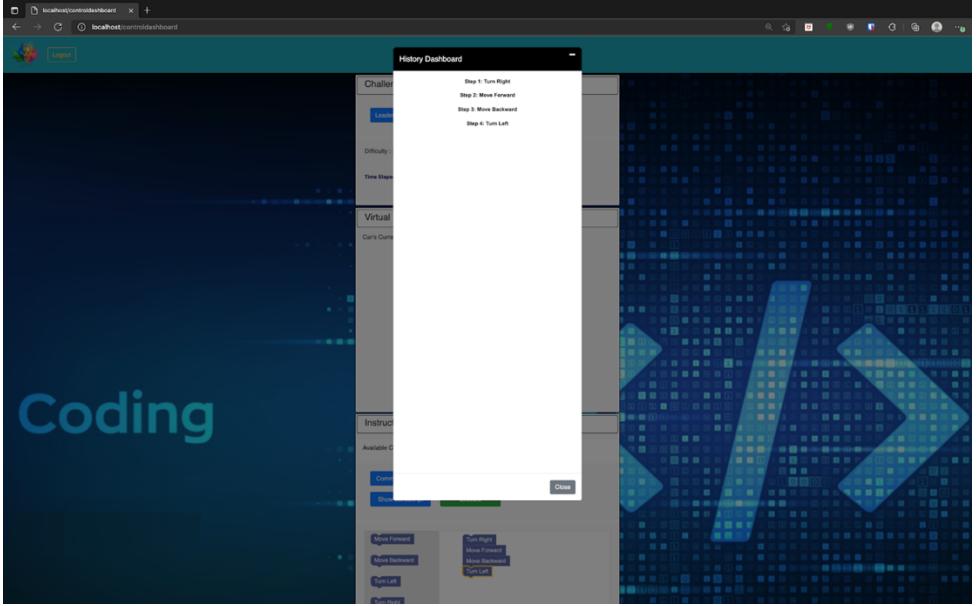
2.14 Start Challenge Successfully

Test Case ID	ST14
Test Case Name	Start Challenge Successfully
Relevant Use Case	UC09
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. A new Challenge has already been created 3. Already paired with the Robotic Car
Steps	<ol style="list-style-type: none"> 1. Press the “Start Challenge” button 2. Observe screen
Expected Result	
Actual Result	
P/F	

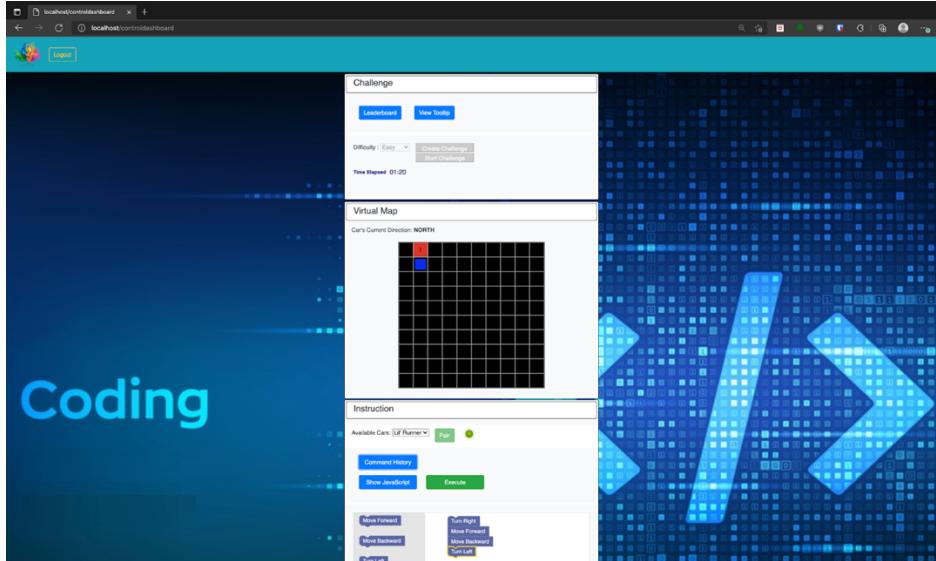
2.15 Issue Command

Test Case ID	ST15
Test Case Name	Issue Command
Relevant Use Case	UC10
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. Robotic Car is already connected to the server 3. Already paired with the Robotic Car 4. A Easy Challenge has been started
Steps	<ol style="list-style-type: none"> 1. Drag and drop the following command blocks into the workspace <ol style="list-style-type: none"> 1. Turn Right 2. Move Forward 3. Move Backward 4. Turn Left 2. Press the “Execute” button to send the command 3. Observe screen
Expected Result	
Actual Result	
P/F	

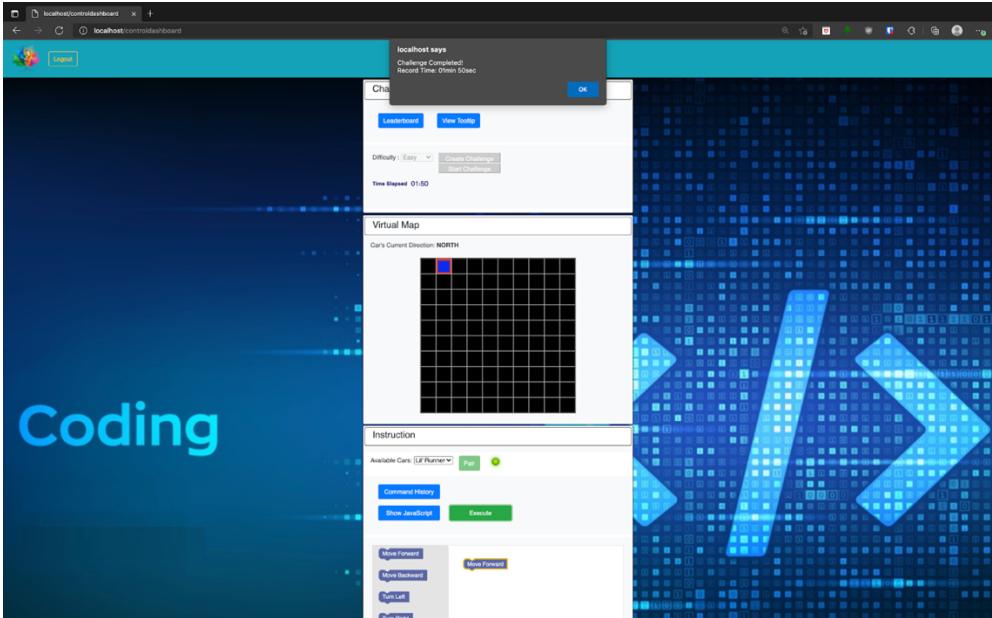
2.16 Open the Command History Window

Test Case ID	ST16
Test Case Name	Open the Command History Window
Relevant Use Case	UC11
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. A Challenge has been started
Steps	<ol style="list-style-type: none"> 1. Press the “Command History” button 2. Observe the screen
Expected Result	
Actual Result	
P/F	

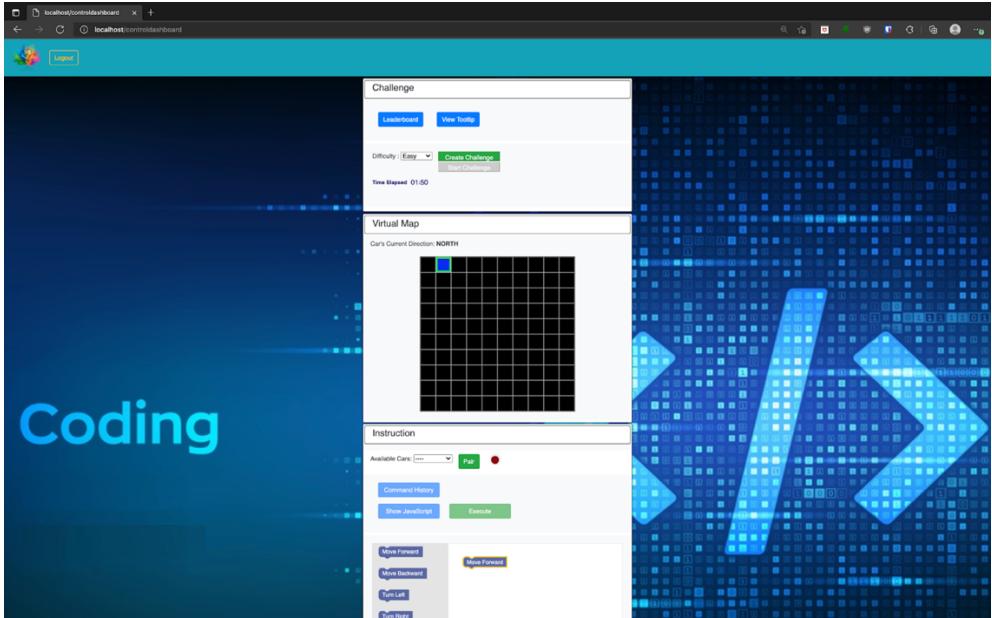
2.17 Close the Command History Window

Test Case ID	ST17
Test Case Name	Close the Command History Window
Relevant Use Case	UC11
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. The Command History Window is currently open
Steps	<ol style="list-style-type: none"> 1. Press the “Close” button on the Command History Window 2. Observe screen
Expected Result	
Actual Result	
P/F	

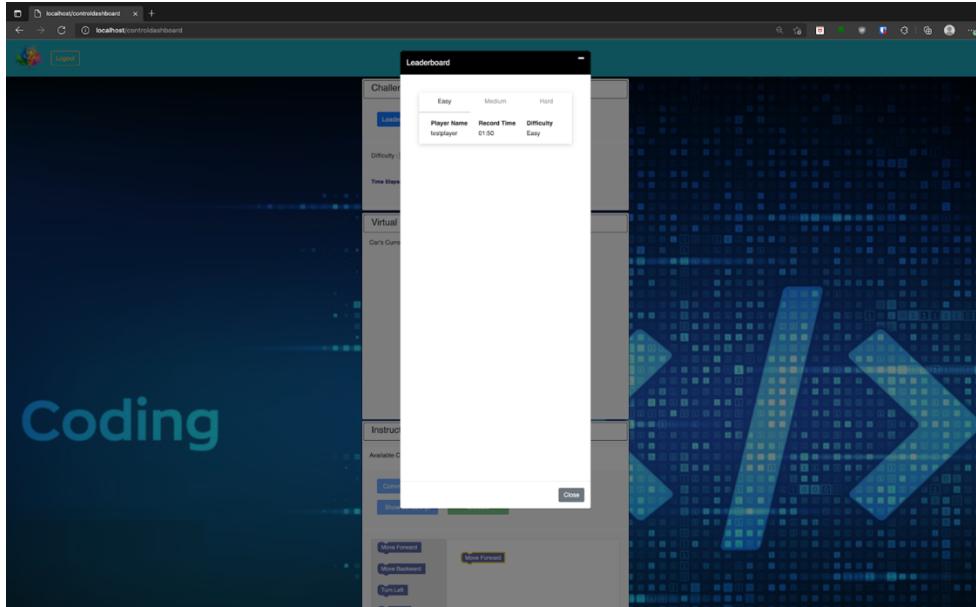
2.18 Complete the Challenge

Test Case ID	ST18
Test Case Name	Complete the Challenge
Relevant Use Case	UC10, UC12
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. Robotic Car is already connected to the server 3. Already paired with the Robotic Car 4. A Easy Challenge with 1 checkpoint has been started 5. A game tile with the same color as the given colored-checkpoint is physically placed 1 tile-distance ahead of Robotic Car's current position
Steps	<ol style="list-style-type: none"> 1. Drag and drop a single "Move Forward" command block into the workspace 2. Press the "Execute" button to send the command 3. Observe screen
Expected Result	 <p>The screenshot shows a web browser window titled 'localhost/controldashboard'. A modal dialog box is open in the center, displaying the message 'Challenge Completed! Record Time: 0:00:00' with an 'OK' button. Below the modal, the main dashboard interface is visible. It features a 'Virtual Map' section with a 10x10 grid showing a blue car icon at the top-left corner and a red diamond-shaped checkpoint icon one square to its right. The text 'Car's Current Direction: NORTH' is displayed above the map. On the left side of the dashboard, there is a large blue banner with the word 'Coding' in white. The bottom section of the dashboard contains a 'Command History' table with several rows of commands, and a 'Command Block' editor on the right with various movement options like 'Move Forward', 'Move Backward', 'Turn Left', and 'Turn Right'. The status bar at the bottom indicates 'Time Elapsed: 01:50'.</p>
Actual Result	
P/F	

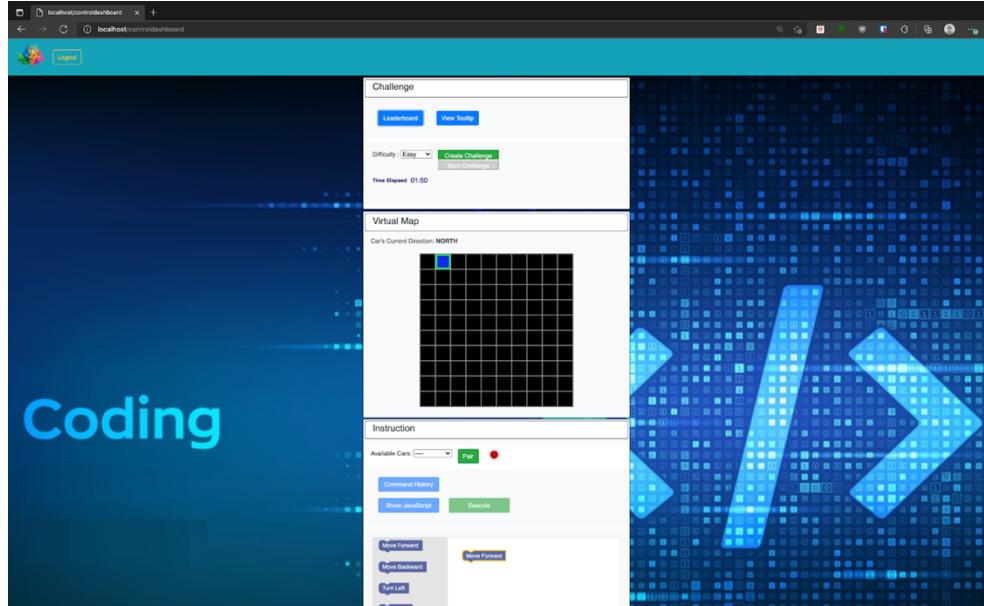
2.19 Close the Challenge Completed Window

Test Case ID	ST19
Test Case Name	Close the Challenge Completed Window
Relevant Use Case	Nil
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. Challenge has been completed and the popup Challenge Completed Window is currently being displayed
Steps	<ol style="list-style-type: none"> 1. Click on the "OK" button of the Challenge Completed Window 2. Observe screen
Expected Result	 <p>The screenshot shows a web browser window titled 'localhost/controldashboard'. On the left, there's a large blue banner with the word 'Coding' in white. The main interface is a control dashboard for a challenge. It features a 'Challenge' section with buttons for 'Understand' and 'View Today', a dropdown for 'Difficulty: Easy', and a 'Create Challenge' button. Below that is a 'Virtual Map' showing a 5x5 grid with a small blue square at the top-left. To the right of the map is a large, stylized blue arrow pointing to the right. Underneath the map is an 'Instruction' section with buttons for 'Pair' (highlighted in green), 'Command History', 'Show Javadoc', and 'Execute'. There are also buttons for 'Move Forward', 'Move Backward', 'Turn Left', and 'Turn Right'.</p>
Actual Result	
P/F	

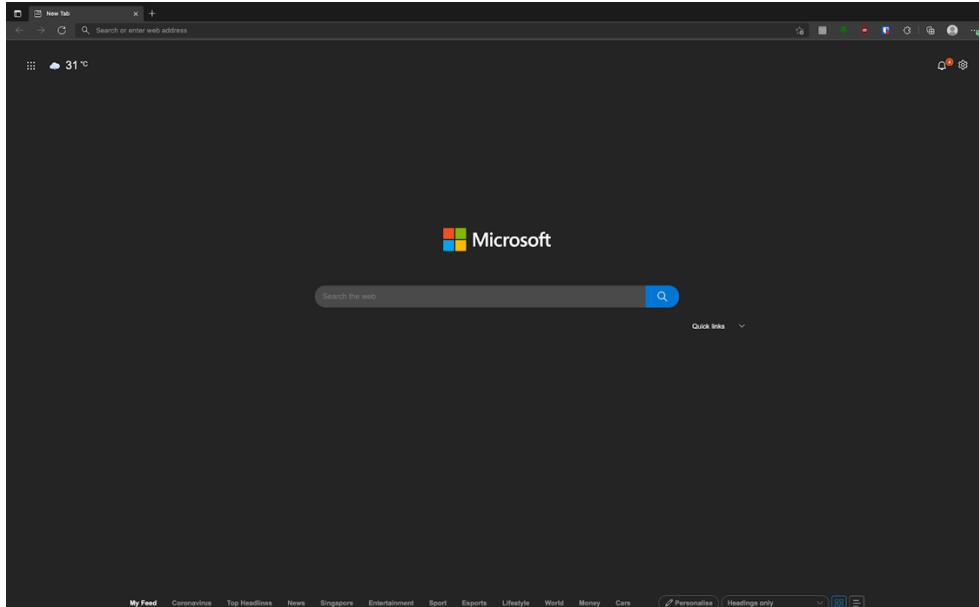
2.20 Open the Leaderboard Window

Test Case ID	ST20
Test Case Name	Open the Leaderboard Window
Relevant Use Case	UC05
Pre-Condition(s)	1. Currently on the Control Dashboard Page
Steps	<ol style="list-style-type: none"> 1. Press the “Leaderboard” button 2. Observe the screen
Expected Result	 <p>The screenshot shows a web browser window titled "localhost/controldashboard". A modal dialog box is centered over the page, titled "Leaderboard". Inside the dialog, there is a table with three columns: "Easy", "Medium", and "Hard". Below the table, it says "Player Name: TestPlayer", "Record Time: 01:50", and "Difficulty: Easy". The background of the browser window shows a dark interface with various buttons and sections like "Challenger", "Difficulty", "Time Steps", "Virtual", "Carry Game", "Instructions", and "Available Options". At the bottom of the dialog, there is a "Close" button.</p>
Actual Result	
P/F	

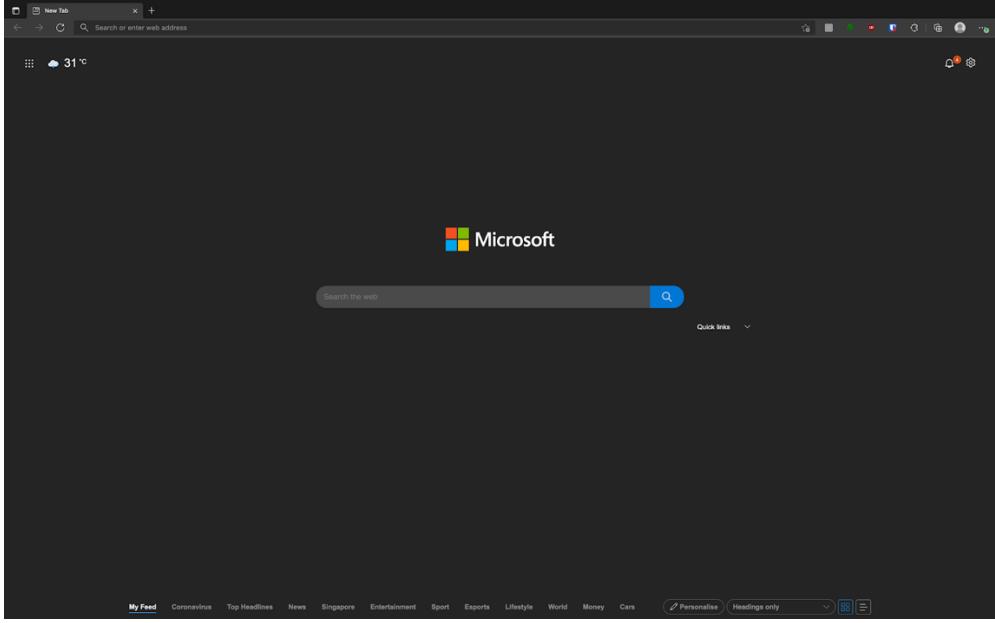
2.21 Close the Leaderboard Window

Test Case ID	ST21
Test Case Name	Close the Leaderboard Window
Relevant Use Case	UC05
Pre-Condition(s)	<ol style="list-style-type: none"> 1. Currently on the Control Dashboard Page 2. The LeaderboardWindow is currently open
Steps	<ol style="list-style-type: none"> 1. Press the “Close” button on the Leaderboard Window 2. Observe screen
Expected Result	
Actual Result	
P/F	

2.22 Close the Web Application from Control Dashboard Page

Test Case ID	ST22
Test Case Name	Close the Web Application from Control Dashboard Page
Relevant Use Case	NIL
Pre-Condition(s)	1. Currently on the Control Dashboard Page
Steps	1. Click on the “X” button of the Control Dashboard browser page’s tab 2. Observe screen
Expected Result	
Actual Result	
P/F	

2.23 Close the Web Application from Challenge Settings Page

Test Case ID	ST23
Test Case Name	Close the Web Application from Challenge Settings Page
Relevant Use Case	NIL
Pre-Condition(s)	1. Currently on the Challenge Settings Page
Steps	<ol style="list-style-type: none"> 1. Click on the “X” button of the Challenge Setting browser page’s tab 2. Observe screen
Expected Result	
Actual Result	
P/F	