## Motors

|  |  |  |
| --- | --- | --- |
| What is being tested | Expected Output | Actual Output |
| forwards(0.5) | Robot should move forwards | Robot moves forwards |
| Forwards(1) | Robot should move forwards quickly | Robot moves forwards quickly |
| Forwards(0) | Robot should not move | Robot does not move |
| Forwards(-1) | Robot should move backwards | Robot moves backwards quickly |
| Forwards(-2) | Invalid motor.forward value! -2 | Nothing is returned |
| Backwards(0.5) | Robot should move backwards | Robot moves backwards |
| Backwards(1) | Robot should move backwards quickly | Robot moves backwards quickly |
| Backwards(0) | Robot should not move | Robot does not move |
| Backwards(-1) | Robot should move forwards | Robot moves forwards quickly |
| Backwards(2) | Invalid motor.backward value! 2 | Nothing is returned |
| Brake() | Robot should brake after moving forward | Robot brakes |
| Stop() | Robot should stop after moving forward | Robots stop |
| Brake\_left\_motor() | Robot should brake the left motor | Robots right motor brakes |
| Brake\_right\_motor() | Robot should brake the right motor | Robots right motor brakes |
| Set\_left\_motor\_speed(0.5) | Robot’s left motor should move forward | Robots left motor moves forwards |
| Set\_left\_motor\_speed(1) | Robot’s left motor should move forward quickly | Robots left motor moves forwards quickly |
| Set\_left\_motor\_speed(0) | Robots left motor should not move | Robots left motor does not move |
| Set\_left\_motor\_speed(-1) | Robots left motor should move backwards | Robots left motor moves backwards quickly |
| Set\_left\_motor\_speed(-2) | Invalid motor.set\_left\_motor\_speed value! -2 | Nothing is returned |
| Set\_left\_motor\_speed(0.5) | Robot’s right motor should move forward | Robots right motor moves forwards |
| Set\_left\_motor\_speed(1) | Robot’s right motor should move forward quickly | Robots right motor moves forwards quickly |
| Set\_left\_motor\_speed(0) | Robots right motor should not move | Robots right motor does not move |
| Set\_left\_motor\_speed(-1) | Robots right motor should move backwards | Robots right motor moves backwards quickly |
| Set\_left\_motor\_speed(-2) | Invalid motor.set\_right\_motor\_speed value! -2 | Nothing is returned |

## Animation

|  |  |  |
| --- | --- | --- |
| What is being tested | Expected Output | Actual Output |
| Vibrate() | Robot vibrates | Robot vibrates |
| led\_run1() | Robot blinks leds | Robot blinks leds |
| Setcolour(1) | Robot leds changes colour to red | Robot leds changes colour to orange(Might be an issue on the mbed) |
| Setcolour(2) | Robot leds changes colour to green | Robot leds changes colour to green |
| Setcolour(3) | Robot leds changes colour to orange | Robot leds changes colour to orange |
| Setcolour(4) | Invalid LED input | Does not change colour |
|  |  |  |

## Colour

|  |  |  |
| --- | --- | --- |
| What is being tested | Expected Output | Actual Output |
| detect\_colour\_once()  get\_colour\_string()  On a black surface | Robot returns the colour black | Robot returns the colour black |
| start\_colour\_ticker(10)  stop\_colour\_ticker()  read\_base\_colour\_sensor\_values() | Robot returns a number based on a black surface | 171612 |

## Display

|  |  |  |
| --- | --- | --- |
| displayClass.write\_string("Hello") | Hello shows on the display | Hello shows on the display |
| clear\_display() | Display is cleared of text | Display is cleared of text |

## Led

|  |  |  |
| --- | --- | --- |
| What is being tested | Expected Output | Actual Output |
| Set\_leds(256,0) | Sets the leds to have a green value of 256 and a red value of 0 | Leds have a green value of 256 and a red value of 0 |
| Blink\_leds(1) | Leds blink on and then off | Leds blink on and then off |
| Get\_led\_states() | Produces a value for the leds based on set\_leds | 257 |

## Sensors

|  |  |  |
| --- | --- | --- |
| What is being tested | Expected Output | Actual Output |
| get\_dc\_voltage() | Voltage is received | 6.550037 |
| get\_current() | Current is received | 0.000806 |
| Get\_temperature() | Temperature is received | 24.625000 |
| get\_battery\_voltage() | Battery voltage is received | 3.256484 |
| enable\_ultrasonic\_ticker()  store\_ir\_values()  get\_background\_raw\_ir\_value(0)  get\_illuminated\_raw\_ir\_value(0)  calculate\_side\_ir\_value(0) | Ultrasonic sensors receive values | 3860 |