Master test plan for the course project

SWE 326: Software Testing and Quality Assurance

Student Names and IDS

Mohammed Al- Salboukh #201671680

Hashim Al- Ghamdi #201617460

Salman Al- Ghamdi #201730930

Saleh Al- Maqwashy #201667240

History

Version	Date	Author	Changes
1.0	10/3/2020	All the team	Static code analysis
1.1	4/4/2020	All the team	System testing

Table of Contents

1. Introduction

1.1. The Project

The purpose of this project is to develop a cruise control system for cars. The cruise control system will improve drivers' experience on the road especially in long trips. The driver will be able to set the cruise speed and accelerate or decelerate to exit the cruise control. In addition, it will not interfere with the engine's routine functions like turning on and off.

1.2. Overview

1.2.1. Test Organization

The team is composed of four members. Each team member will act as a team leader for one phase (sub-phase). Provide the assigned team leaders (where applicable) :

Phase 1: Mohammed Al Salboukh #201671680
Phase 2: Hashim Al- Ghamdi #201617460
Phase 3: Salman Al- Ghamdi #201730930
Phase 4: Saleh Al- Maqwashy #201667240

1.2.2. System Under test (SUT)

Class Name	Number of Methods	Number of Lines of Code	Dependencies
CarSimulator.java	15	200	Java.awt, Runnable interface, appCruise package
SpeedController.java	6	50	Runnable intercace, appCruise package
CarSpeed.java (interface)	2	9	appCruise package
CruiseControl.java	4	119	appCruise package, java.awt, javafx.swing
CruiseDisplay.java	8	87	appCruise package, java.awt
Controller.java	7	57	appCruise package
Total: 6	Total: 42	Total: 522	

1.2.3. Testing types

We aim at conducting the following three types of testing:

- Static code analysis
- System testing
- Unit testing

1.2.4. Project Phases

Phase 1: Static Code Analysis

In this phase, the source code will go under static analysis manually and automatically.

Phase 2: System Testing

In this phase, system testing (black box testing) will be conducted on the system.

Phase 3: Unit Testing

In this phase, a unit test plan will be developed and executed using Junit and code cover tools.

Phase 4: Presentation

In this phase, a presentation will be given about what's been accomplished in this project and a discussion about the project itself.

1.2.5. Features to be tested

- We want to test that the system is really activated when clicked on "On" button, As required in R1.
- The speed is set properly if required (I.e. if the required new speed in in the bad range, then it is not being changed or set, like if it less than zero, which is not make since to have a speed of less than zero)
- The interface is working properly, that is the getSpeed() or setThrottle(double val) is not the same in different classes that is implemented the contract or the interface CarSpeed()
- That there is no infinite state between all the status of the speed.
- That when the method accelerate() is invoked, the speed changes by one more, not less or more than this.
- That the CC cannot be set for a speed less than 40km/h
- That when the user wants to turn the engine on, then that is done properly with respect to the display of the display, also to make sure the there is no such object in the engine, so that it is not get confused.

- That when the user wants to turn off the engine, then the value of the engine is set to nothing (I.e. null) so that the user does not confuse with the past object.
- We want also to make sure that when the user wants to decrease the speed (I.e. brake) then it is done quietly and not accidentally (I.e. from 10 to 0).
- We want also to test if any kind of the above status done, then it is updated consistently with the interface, as required in R6.
- Test that the user should be able to run turn the CC on and off with no limit, as required in R16.
- We want to test whether the user can turn the engine off anytime or not, as required in R5.
- That there is no behavior occurs when we click on the button "Off" and the CC is already off, as required in R14.
- We want also to test that the system GUI reflect the status of the CC (Green for on, Red for off), as required in R12

1.2.6. Features not to be tested

- Visual Testing for the entire graphical user interface
- Performance Testing for the software
- Security Testing for the software

1.1. Test Environment and Tools

This section describes the test environment and tools used during this project.

- Eclipse tool
- Checkstyle
- JUnit environment for Unit Testing.
- Codecover tool for execution coverage

1.2. Document Structure

This document follows (not strictly) the template for test plans in IEEE standard for software test documentation [IEEE829].

2. Static Code Analysis

2.1. Manual Code Inspection

For each class, fill in the table below.

Time Report: 6 hours

Time spent on Familiarization with the Code: 2 hours
Time spent on Filling in Findings Report: 2 hours
Time spent on Actual Inspection: 2 hours

Findings:

#	Description	Line #	Class Name	Associated Checklist Item #
1	The functions in the code have to be all public if it will be used outside the class, otherwise it should be private and used 2 times at least. In drawOdo(...) and drawMark(...) they are used just once. Its good in arrangement perspective otherwise its just nightmare.	78, 106	CarSimulator.java	1.1. Each required function is provided as a public method
2	The placement of the braces has not been put consistently, in many if statement throughout the code, the if statements don't have braces or bad location like line 35, 36 According to Oracle (1999), every if statement must have braces. https://www.oracle.com/technetwork/java/javase/documentation/codeconventions-142311.html	35, 36, throughout the code.	CarSimulator.java	2.1. Placement of braces ({ and }) done consistently throughout.
3	Indentation have not been used in the required criteria.	36, 47, 171, 172, 176, 192, 193	CarSimulator.java	2.2. Indentation is used, consistently, to indicate block structure within braces.
4	There is no block of comment that is describe the code in the class.	All the class	CarSimulator.java	2.3. Block comments precede the code they describe.
5	In the method drawMark(…) the variable **len** changed to **flen** and used with no different.	93	CarSimulator.java	2.4. The same names or abbreviations are used consistently for the same concept.

6	Naming convention of the variables does not follow the convention naming, offscreen; offscreensize, offgraphics, fspeed, brakepedal like theses variables.	94, 106 … etc	CarSimulator.java	2.5. Naming conventions for classes, class members (methods and variables).
7	The values when it access a public method should be checked. In instance if we have a method that is dealing with the GPA, the value of the GPA must be between 172-4 (in KFUPM). So this public method must not change the value of this variable. Also the variable's datatype must be checked (Through an exception to check the datatype). The variable **val** is violating our rules.	190, 191	CarSimulator.java	3.1. Input parameters to public methods, and inputs read from files, are checked explicitly for all unacceptable values.
8	The input to the function must not be null.	66	CarSimulator.java	3.3. Unacceptable public input produces a documented result
9	There is no comments in the locations where supposed to have comments like a specific algorithm. And this error along all the code.	Most of the class	CarSimulator.java	7.1. Comments are provided whenever the purpose or reason for doing something in the code is obscure.
10	There are no comments in the methods.	23, 33, 46, 50, 69, 78..etc	CarSimulator.java	7.2. Comments are provided to describe every method, however briefly.
11	No comments for the relationship between the instance variables.	Beginning of the source code.	CarSimulator.java	7.3. Comments are provided to describe the purpose, restrictions, and relationships

				between all instance variables in a class.
12	The names are not reflecting the meaning of them like drawOdo(…) method. Also the method setThrottle(), i	106	CarSimulator.java	7.4. All names are chosen well and consistently to reflect their usage and purpose.
13	There are magic numbers in the code, used with no reason, like setSize(300,260);	25	CarSimulator.java	7.5. Constants (static final) are used instead of magic numbers.
14	There is no toString method in the class that is illustrate what is the values of the object are.	At the end	CarSimulator.java	10.1. Every class has a parameter less toString method which returns a String containing a dump or summary of an instance of the class.
15	The placement of the braces has not been put consistently, in many if statement throughout the code, the if statements don't have braces or bad location like line 53, 57 According to Oracle (1999), every if statement must have braces. https://www.oracle.com/technetwork/java/javase/documentation/codeconventions-142311.html	53, 57	CruiseDisplay.java	2.1. Placement of braces ({ and }) done consistently throughout.
16	cruiseOn is a local variable that does not follow Naming conventions (it should be cruise_on), botY is CLASS_CONSTANT that does not follow Naming conventions (it should be BOT_Y).	9, 10	CruiseDisplay.java	2.5. Naming conventions for classes, class members (methods and variables), constants, and local variables, are

				distinct and consistent
17	The method drawImage has an input parameter of null.	62	CruiseDisplay.java	3.3. Unacceptable public input produces a documented result (e.g. zero, null, the empty String ...) when there is no exception thrown.
18	The two if statements can be simplified.	53-60	CruiseDisplay.java	6.2. Math expressions, control expressions (in ifs, whiles, fors, and switches) are as simple as possible.
19	No comments were provided for all methods in the class.	24, 41, 45, 65, 73, 78, 83	CruiseDisplay.java	7.2. Comments are provided to describe every method, however briefly.
20	No comments were provided for some instance variables in the class.	8, 9, 11, 12	CruiseDisplay.java	7.3. Comments are provided to describe the purpose, restrictions, and relationships between all instance variables in a class.
21	The name d was used for a variable of type Dimension this does not reflect the purpose of the variable; it should be screensize	25	CruiseDisplay.java	7.4. All names are chosen well and consistently to

				reflect their usage and purpose.
22	The setSize method should have constant instead of direct numbers	16	CruiseDisplay.java	7.5. Constants (static final) are used instead of magic numbers.
23	The CruiseDisplay class does not have toString method.	5	CruiseDisplay.java	10.1. Every class has a parameterless toString method which returns a String containing a dump or summary of an instance of the class.
24	CruiseControl placment of {} is not consistent with the rest of the document.	25,30	CruiseControl.java	2.1. Placement of braces ({ and }) done consistently throughout.
25	Wrong indentation for the main method.	114-117	CruiseControl.java	2.2. Indentation is used, consistently, to indicate block structure within braces.
26	No block comments available in these lines.	33-34, 42, 95, 109	CruiseControl.java	2.3. Block comments precede the code they describe.
27	Inappropriate naming convention for local variables.	16,17	CruiseControl.java	2.5. Naming conventions for classes, class members (methods and variables),

				constants, and local variables, are distinct and consistent
28	Init method is too long (74 lines).	32-106	CruiseControl.java	6.1. No method is longer than one page (about 60 lines including comments).
29	Repeated code with little differences.	43-94	CruiseControl.java	6.4. Little private methods are preferred to repeating the same code over and over in different places.
30	No description for the method is provided.	32	CruiseControl.java	7.2. Comments are provided to describe every method, however briefly.
31	No description for the purpose, restrictions, or relationships is commented for the instance variables.	13-22	CruiseControl.java	7.3. Comments are provided to describe the purpose, restrictions, and relationships between all instance variables in a class.
32	The CruiseControl class does not have toString method.	118	CruiseControl.java	10.1. Every class has a parameterless toString method which returns a String containing a

				dump or summary of an instance of the class.
33	Braces should be directly after the constructer	12	Controller .java	2.1. Placement of braces ({ and }) done consistently throughout.
34	Braces should be directly after the if statement	16, 21, 33, 45, 54	Controller .java	2.1. Placement of braces ({ and }) done consistently throughout.
35	The placement of the braces has not been put consistently, in many if statement throughout the code, the if statements don't have braces or bad location like line 27 According to Oracle (1999), every if statement must have braces. https://www.oracle.com/technetwork/java/javase/documentation/codeconventions-142311.html	27	Controller .java	2.1. Placement of braces ({ and }) done consistently throughout.
36	The entire class is not indented properly	3	Controller .java	2.2. Indentation is used, consistently, to indicate block structure within braces.
37	The indentation does not reflect block structure	13	Controller .java	2.2. Indentation is used, consistently, to indicate block structure within braces.
38	The indentation does not reflect block structure	17, 22, 34, 46, 55	Controller .java	2.2. Indentation is used, consistently, to indicate block structure within braces.

39	controlState should be control_state	8	Controller .java	2.5. Naming conventions for classes, class members (methods and variables), constants, and local variables, are distinct and consistent
40	No comments were provided for all methods in the class.	15, 20, 25, 32, 37, 44, 53	Controller .java	7.2. Comments are provided to describe every method, however briefly.
41	No comments were provided for some instance variables in the class.	9, 10	Controller .java	7.3. Comments are provided to describe the purpose, restrictions, and relationships between all instance variables in a class.
42	The name b was used for a variable of type boolean this does not reflect the purpose of the variable; it should be fixed	12	Controller .java	7.4. All names are chosen well and consistently to reflect their usage and purpose.
43	Variables should be private	4, 5, 6, 7	Controller .java	9.1. Instance variables are not public.
44	The Controller class does not have toString method.	3	Controller .java	Every class has a parameterless toString method which returns a

				String containing a dump or summary of an instance of the class.
45	No comments provided to describe the methods.	4,6	CarSpeed. java	7.2 Comments are provided to describe every method, however briefly.
46	No toString method provided.	8	CarSpeed. java	10.1 Every class has a parameterless toString method which returns a String containing a dump or summary of an instance of the class.
47	No indentation.	5-11,14,15 ..etc	SpeedCon trol.java	2.2 Indentation is used, consistently, to indicate block structure within braces.
48	Comments do not precede code they're describing.	4,6,7,9, 38,42	SpeedCo ntrol.java	2.3 Block comments precede the code they describe.
49	No checking for unacceptable values for input parameters.	14	SpeedCon trol.java	3.1 Input parameters to public methods, and inputs read from files, are checked explicitly for all unacceptable values.

50	No comments provided to explain purpose of code.	28,42	SpeedControl.java	7.1 Comments are provided whenever the purpose or reason for doing something in the code is obscure.
51	No comments provided to describe the methods.	12,17,21,25,34,38	SpeedControl.java	7.2 Comments are provided to describe every method, however briefly.
52	No comment provided to describe the instance variables.	5	SpeedControl.java	7.3 Comments are provided to describe the purpose, restrictions, and relationships between all instance variables in a class.
53	Comparison to boolean variables in conditions.	23,27,36,41	SpeedControl.java	7.6 Booleans are not compared to boolean constants. (e.g. if (!found) is preferred to if (found == false)).
54	No toString method provided.	50	SpeedControl.java	10.1 Every class has a parameterless toString method which returns a String containing a dump or summary of an instance of the class.

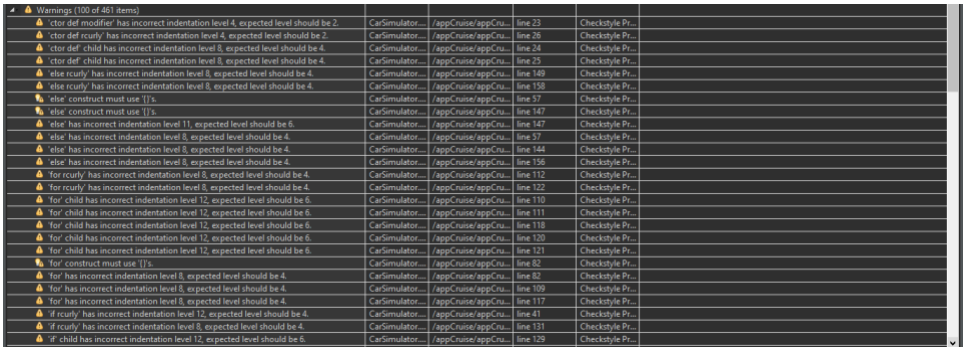
55	The if statement for setting a new throttle is not as simple as possible. Bad for understandability and reusability. In the method setThrottle(double val) it should have “else if()” statement instade of the second if.	189	CarSimulator.java	6.2. Math expressions, control expressions (in ifs, whiles, fors, and switches) are as simple as possible.

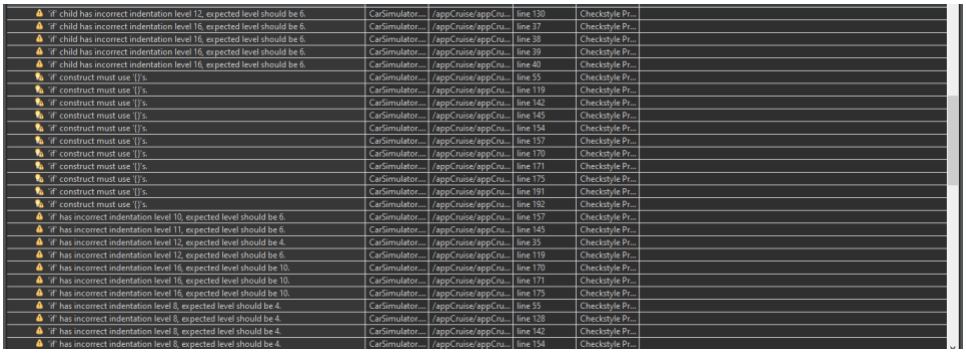
2.2. Automatic Static Code Analysis

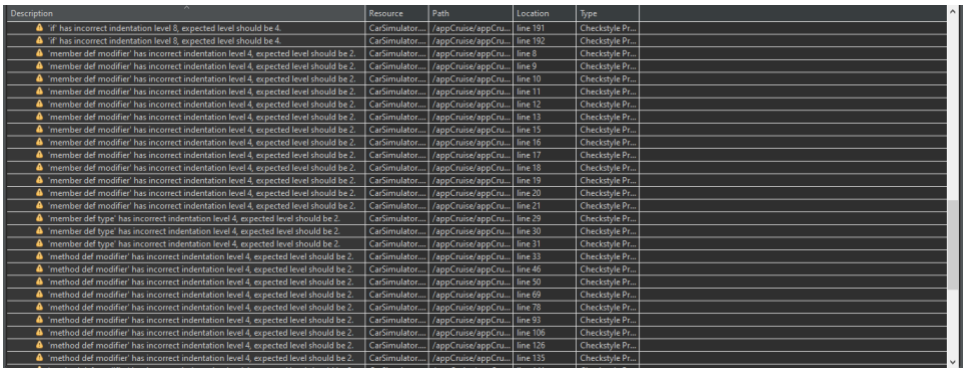
2.2.1. Checkstyle It is a free static code analysis tool used to check source code.

2.2.2. Produced reports

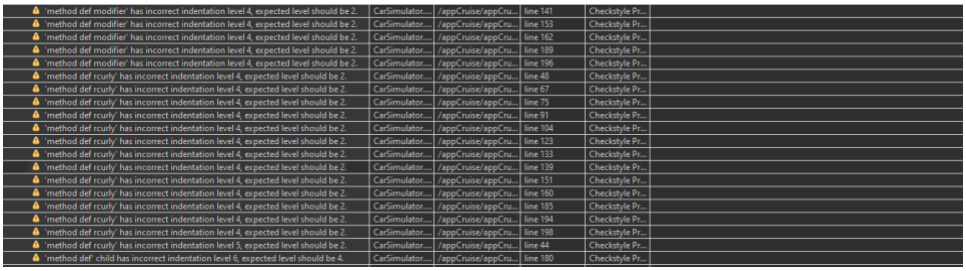
CarSimulator:







Description	Resource	Path	Location	Type
'if' has incorrect indentation level 8, expected level should be 4.	CarSimulator....	/appCruise/appCru...	line 191	Checkstyle Pr...
'if' has incorrect indentation level 8, expected level should be 4.	CarSimulator....	/appCruise/appCru...	line 192	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 8	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 9	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 10	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 11	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 12	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 13	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 15	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 16	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 17	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 18	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 19	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 20	Checkstyle Pr...
'member def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 21	Checkstyle Pr...
'member def type' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 29	Checkstyle Pr...
'member def type' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 30	Checkstyle Pr...
'member def type' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 31	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 33	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 46	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 50	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 69	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 78	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 93	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 106	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 126	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 135	Checkstyle Pr...



'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 141	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 153	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 162	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 189	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 196	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 48	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 67	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 75	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 91	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 104	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 123	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 133	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 139	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 151	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 160	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 185	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 194	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 4, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 198	Checkstyle Pr...
'method def rcurly' has incorrect indentation level 5, expected level should be 2.	CarSimulator....	/appCruise/appCru...	line 44	Checkstyle Pr...
'method def' child has incorrect indentation level 6, expected level should be 4.	CarSimulator....	/appCruise/appCru...	line 180	Checkstyle Pr...

CarSpeed:

'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSpeed.java	/appCruise/appCru...	line 5	Checkstyle Pr...
'method def modifier' has incorrect indentation level 4, expected level should be 2.	CarSpeed.java	/appCruise/appCru...	line 7	Checkstyle Pr...

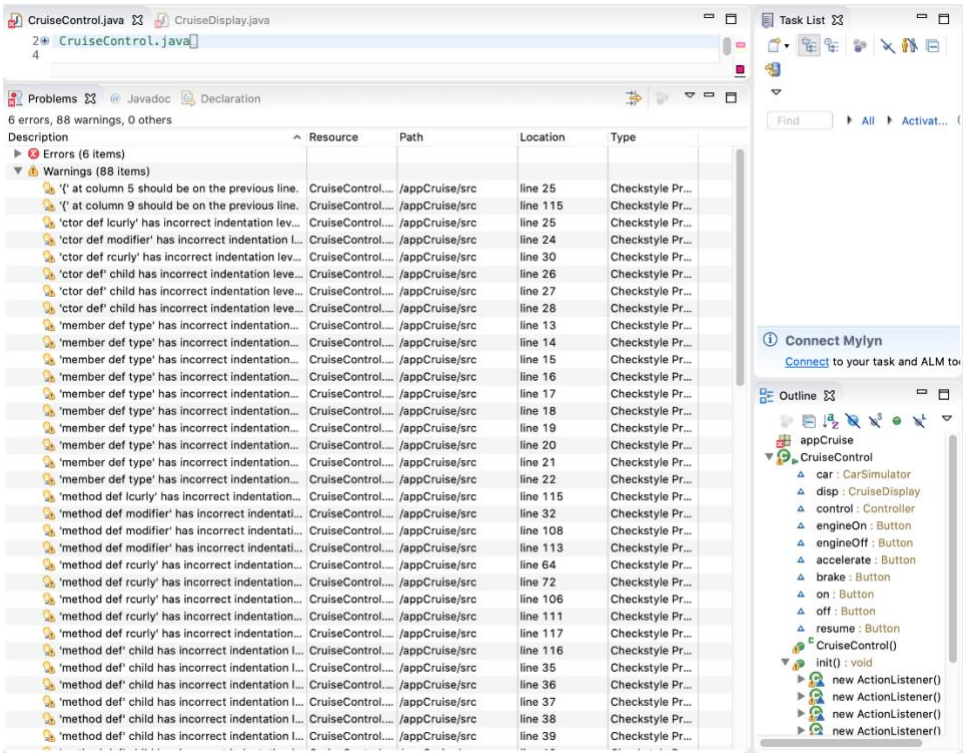
Controller:

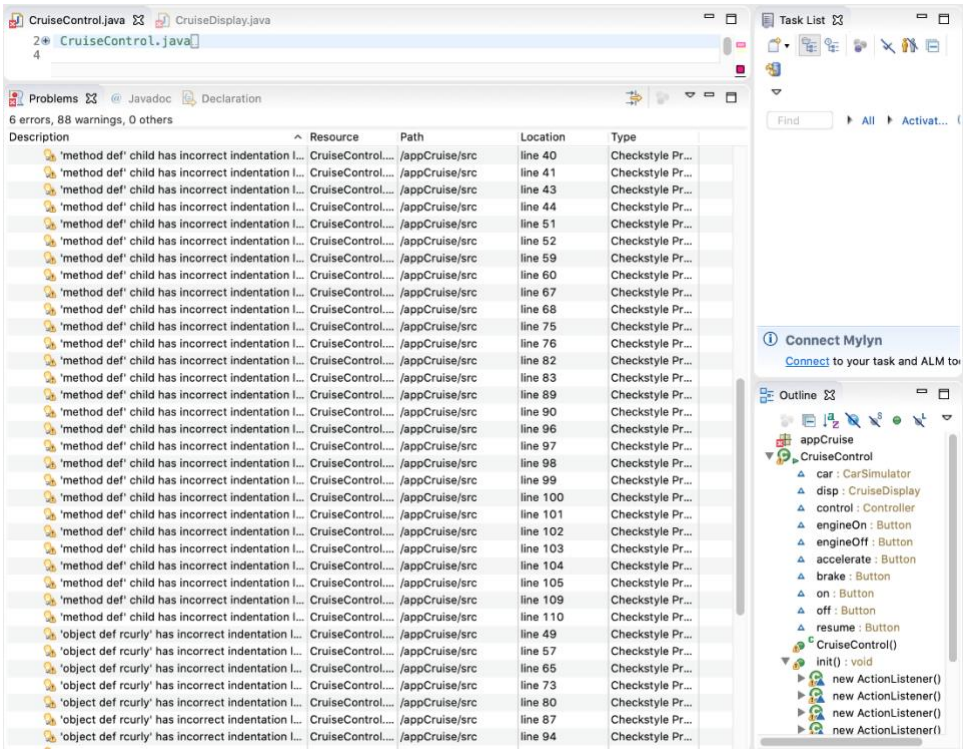
')' is preceded with whitespace.	Controller.java	/appCruise/appCru...	line 21	Checkstyle Pr...
')' is preceded with whitespace.	Controller.java	/appCruise/appCru...	line 45	Checkstyle Pr...
'{' at column 5 should be on the previous line.	Controller.java	/appCruise/appCru...	line 13	Checkstyle Pr...
'{' at column 5 should have line break after.	Controller.java	/appCruise/appCru...	line 13	Checkstyle Pr...
'{' at column 6 should be on the previous line.	Controller.java	/appCruise/appCru...	line 55	Checkstyle Pr...
'{' at column 6 should have line break after.	Controller.java	/appCruise/appCru...	line 55	Checkstyle Pr...
'{' at column 7 should be on the previous line.	Controller.java	/appCruise/appCru...	line 17	Checkstyle Pr...
'{' at column 7 should be on the previous line.	Controller.java	/appCruise/appCru...	line 22	Checkstyle Pr...
'{' at column 7 should be on the previous line.	Controller.java	/appCruise/appCru...	line 34	Checkstyle Pr...
'{' at column 7 should be on the previous line.	Controller.java	/appCruise/appCru...	line 46	Checkstyle Pr...
'{' at column 7 should have line break after.	Controller.java	/appCruise/appCru...	line 17	Checkstyle Pr...
'{' at column 7 should have line break after.	Controller.java	/appCruise/appCru...	line 22	Checkstyle Pr...
'{' at column 7 should have line break after.	Controller.java	/appCruise/appCru...	line 34	Checkstyle Pr...
'{' at column 7 should have line break after.	Controller.java	/appCruise/appCru...	line 46	Checkstyle Pr...
'}' at column 46 should be alone on a line.	Controller.java	/appCruise/appCru...	line 13	Checkstyle Pr...
'}' at column 50 should be on the same line as the next part of a multi-block statemen	Controller.java	/appCruise/appCru...	line 46	Checkstyle Pr...
'ctor def lcurly' has incorrect indentation level 4, expected level should be 2.	Controller.java	/appCruise/appCru...	line 13	Checkstyle Pr...
'else' child has incorrect indentation level 7, expected level should be 6.	Controller.java	/appCruise/appCru...	line 48	Checkstyle Pr...
'else' child has incorrect indentation level 7, expected level should be 6.	Controller.java	/appCruise/appCru...	line 49	Checkstyle Pr...
'if lcurly' has incorrect indentation level 5, expected level should be 4.	Controller.java	/appCruise/appCru...	line 55	Checkstyle Pr...
'if lcurly' has incorrect indentation level 6, expected level should be 4.	Controller.java	/appCruise/appCru...	line 17	Checkstyle Pr...
'if lcurly' has incorrect indentation level 6, expected level should be 4.	Controller.java	/appCruise/appCru...	line 22	Checkstyle Pr...
'if lcurly' has incorrect indentation level 6, expected level should be 4.	Controller.java	/appCruise/appCru...	line 34	Checkstyle Pr...
'if lcurly' has incorrect indentation level 6, expected level should be 4.	Controller.java	/appCruise/appCru...	line 46	Checkstyle Pr...
'if' construct must use '{}'s.	Controller.java	/appCruise/appCru...	line 27	Checkstyle Pr...
'static' modifier out of order with the JLS suggestions.	Controller.java	/appCruise/appCru...	line 4	Checkstyle Pr...
'static' modifier out of order with the JLS suggestions.	Controller.java	/appCruise/appCru...	line 5	Checkstyle Pr...

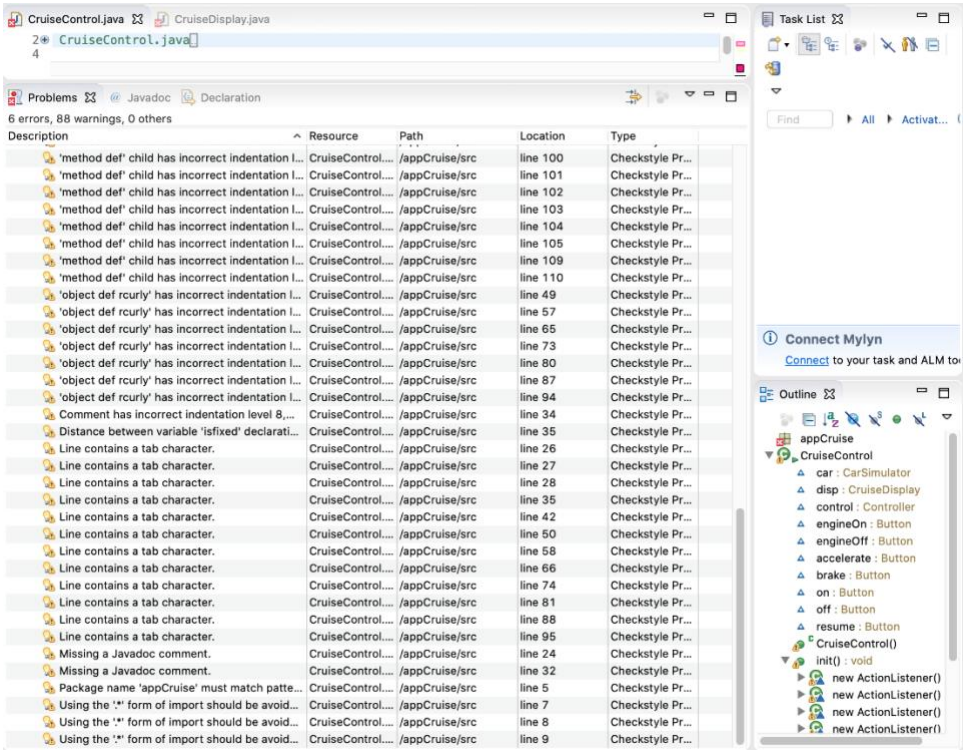
'static' modifier out of order with the JLS suggestions.	Controller.java	/appCruise/appCru...	line 6	Checkstyle Pr...
'static' modifier out of order with the JLS suggestions.	Controller.java	/appCruise/appCru...	line 7	Checkstyle Pr...
ArrayList is a raw type. References to generic type ArrayList<E> should be parameteriz	BookList.java	/ICS201_LAB09/src	line 7	Java Problem
ArrayList is a raw type. References to generic type ArrayList<E> should be parameteriz	Stack.java	/Practice/src	line 2	Java Problem
ArrayList is a raw type. References to generic type ArrayList<E> should be parameteriz	Stack.java	/Practice/src	line 2	Java Problem
ArrayList is a raw type. References to generic type ArrayList<E> should be parameteriz	TermSearch.ja...	/GUI_Labs/src	line 57	Java Problem
BST is a raw type. References to generic type BST<T> should be parameterized	BSTTest.java	/Practice/src/ICS202	line 15	Java Problem
Comparable is a raw type. References to generic type Comparable<T> should be para	DualQueue.ja...	/ICS201_Final/src	line 4	Java Problem
Comparable is a raw type. References to generic type Comparable<T> should be para	Student.java	/ICS201_LAB08/src	line 2	Java Problem
ListView is a raw type. References to generic type ListView<T> should be parameterize	Sorter.java	/GUI_Labs/src	line 33	Java Problem
ListView is a raw type. References to generic type ListView<T> should be parameterize	Sorter.java	/GUI_Labs/src	line 33	Java Problem
ListView is a raw type. References to generic type ListView<T> should be parameterize	TermSearch.ja...	/GUI_Labs/src	line 31	Java Problem
ListView is a raw type. References to generic type ListView<T> should be parameterize	TermSearch.ja...	/GUI_Labs/src	line 32	Java Problem
Only one statement per line allowed.	Controller.java	/appCruise/appCru...	line 13	Checkstyle Pr...
Only one statement per line allowed.	Controller.java	/appCruise/appCru...	line 22	Checkstyle Pr...
Only one statement per line allowed.	Controller.java	/appCruise/appCru...	line 34	Checkstyle Pr...
Only one statement per line allowed.	Controller.java	/appCruise/appCru...	line 39	Checkstyle Pr...
Only one statement per line allowed.	Controller.java	/appCruise/appCru...	line 46	Checkstyle Pr...
Only one statement per line allowed.	Controller.java	/appCruise/appCru...	line 55	Checkstyle Pr...
Package name 'appCruise' must match pattern '^[a-z]+(\.[a-z][a-z0-9]*)*$'.	Controller.java	/appCruise/appCru...	line 1	Checkstyle Pr...
Resource leak: 'kb' is not closed at this location	FactoralTester...	/ICE201_LAB4/src	line 13	Java Problem
Resource leak: 'ois' is never closed	Q3.java	/ICS201_Final/src	line 33	Java Problem
Resource leak: 'ois' is never closed	ReadFile.java	/Practice/src	line 13	Java Problem
Resource leak: 'scn' is never closed	ComplexTest....	/ICS201_HW2_Grad...	line 6	Java Problem
The import com.sun.corba.se.spi.orbutil.fsm.Input is never used	MathQuiz.java	/GUI_Labs/src	line 4	Java Problem
The import java.io.FileNotFoundException is never used	WordCountTe...	/ICS201_Final/src	line 2	Java Problem
The import java.util is never used	Triangle.java	/ICE201_LAB4/src	line 1	Java Problem

The serializable class User does not declare a static final serialVersionUID field of type l	User.java	/Practice/src	line 3	Java Problem
The type VBoxBuilder<B> is deprecated	JavaFX_MyDi...	/GUI_Labs/src	line 11	Java Problem
The type VBoxBuilder<B> is deprecated	JavaFX_MyDi...	/GUI_Labs/src	line 73	Java Problem
The value of the local variable bin is not used	BookList.java	/ICS201_LAB09/src	line 65	Java Problem
The value of the local variable bin is not used	BookList.java	/ICS201_LAB09/src	line 99	Java Problem
The value of the local variable lbl is not used	TermSearch.ja...	/GUI_Labs/src	line 27	Java Problem
The value of the local variable whew is not used	Sorter.java	/GUI_Labs/src	line 25	Java Problem
The value of the local variable zz is not used	Sorter.java	/GUI_Labs/src	line 33	Java Problem
Type safety: The constructor ArrayList(Collection) belongs to the raw type ArrayList. Re	TermSearch.ja...	/GUI_Labs/src	line 57	Java Problem
Type safety: The expression of type ArrayList needs unchecked conversion to conform	BookList.java	/ICS201_LAB09/src	line 7	Java Problem
Type safety: The expression of type ArrayList needs unchecked conversion to conform	TermSearch.ja...	/GUI_Labs/src	line 57	Java Problem
Type safety: The expression of type BST needs unchecked conversion to conform to BS	BSTTest.java	/Practice/src/ICS202	line 15	Java Problem
Type safety: The expression of type Comparator needs unchecked conversion to confo	DualQueue.ja...	/ICS201_Final/src	line 32	Java Problem
Type safety: The expression of type ListView needs unchecked conversion to conform t	TermSearch.ja...	/GUI_Labs/src	line 31	Java Problem
Type safety: The expression of type ListView needs unchecked conversion to conform t	TermSearch.ja...	/GUI_Labs/src	line 32	Java Problem
Type safety: The method add(Object) belongs to the raw type ArrayList. References to	Stack.java	/Practice/src	line 32	Java Problem
Type safety: Unchecked cast from Object to ArrayList<T>	DualQueue.ja...	/ICS201_Final/src	line 31	Java Problem
Type safety: Unchecked cast from Object to ArrayList<User>	ReadFile.java	/Practice/src	line 14	Java Problem
Type safety: Unchecked invocation naturalOrder() of the generic method naturalOrder	DualQueue.ja...	/ICS201_Final/src	line 32	Java Problem
WhitespaceAround: '!=' is not followed by whitespace. Empty blocks may only be repr	Controller.java	/appCruise/appCru...	line 26	Checkstyle Pr...
WhitespaceAround: '!=' is not followed by whitespace. Empty blocks may only be repr	Controller.java	/appCruise/appCru...	line 38	Checkstyle Pr...
WhitespaceAround: '!=' is not preceded with whitespace.	Controller.java	/appCruise/appCru...	line 26	Checkstyle Pr...
WhitespaceAround: '!=' is not preceded with whitespace.	Controller.java	/appCruise/appCru...	line 38	Checkstyle Pr...
WhitespaceAround: '{' is not followed by whitespace. Empty blocks may only be repre	Controller.java	/appCruise/appCru...	line 13	Checkstyle Pr...
WhitespaceAround: '{' is not followed by whitespace. Empty blocks may only be repre	Controller.java	/appCruise/appCru...	line 17	Checkstyle Pr...
WhitespaceAround: '{' is not followed by whitespace. Empty blocks may only be repre	Controller.java	/appCruise/appCru...	line 22	Checkstyle Pr...
WhitespaceAround: '{' is not followed by whitespace. Empty blocks may only be repre	Controller.java	/appCruise/appCru...	line 34	Checkstyle Pr...

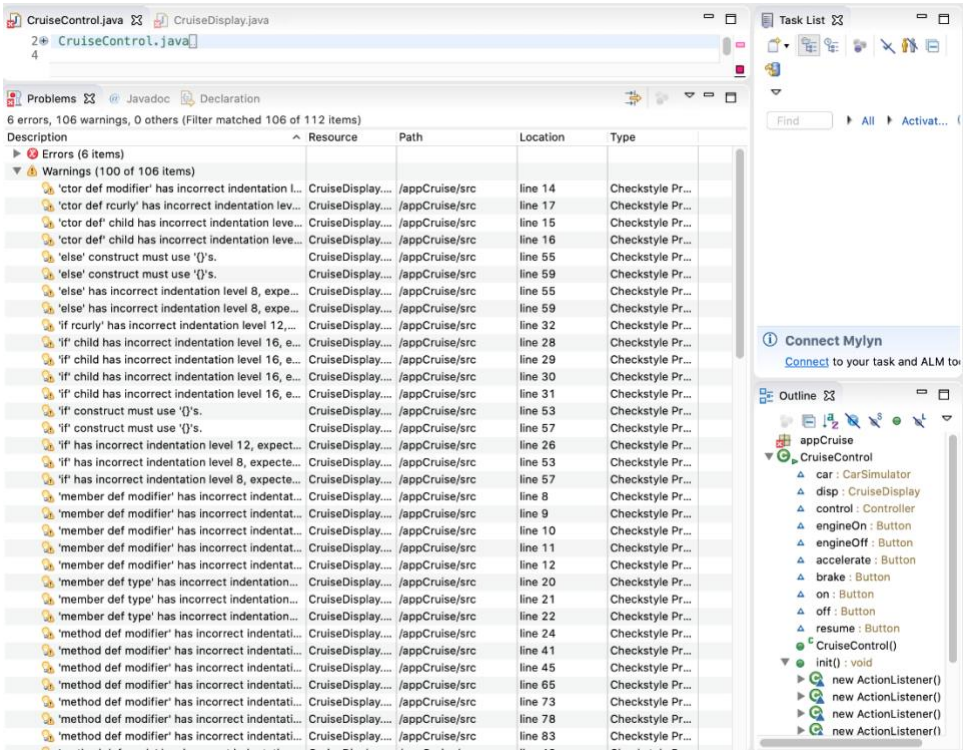
CruiseControl:

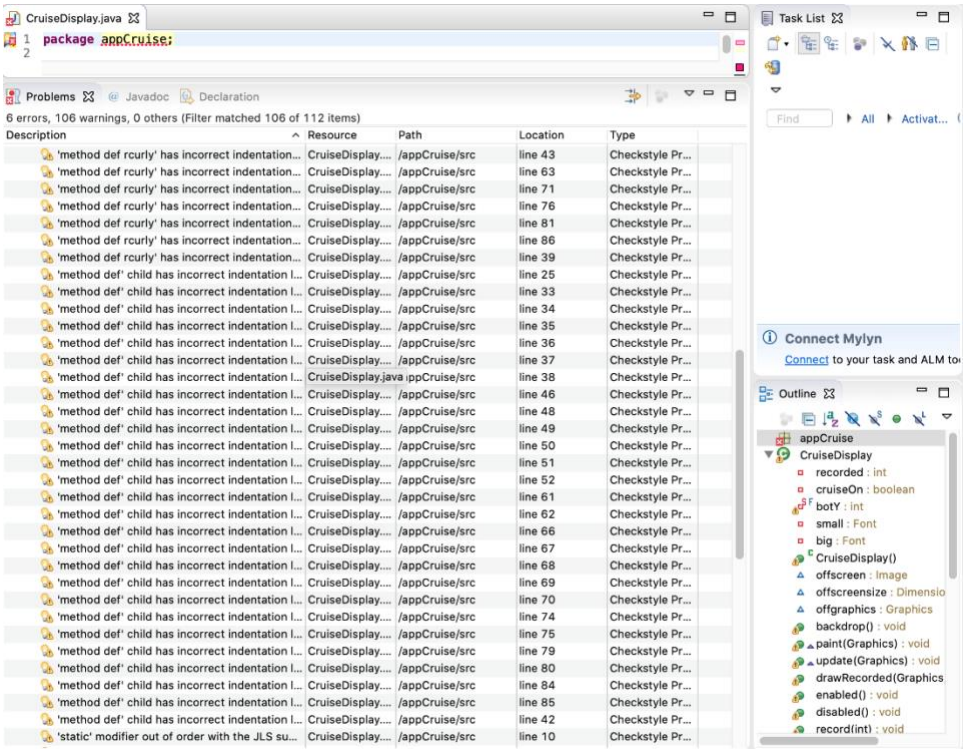






CruiseDisplay:




CruiseDisplay.java
1 package appCruise;
2
Problems
Javadoc
Declaration
6 errors, 106 warnings, 0 others (Filter matched 106 of 112 items)
Description
Resource
Path
Location
Type
'method def rcurly' has incorrect indentation... CruiseDisplay.... /appCruise/src line 43 Checkstyle Pr...
'method def rcurly' has incorrect indentation... CruiseDisplay.... /appCruise/src line 63 Checkstyle Pr...
'method def rcurly' has incorrect indentation... CruiseDisplay.... /appCruise/src line 71 Checkstyle Pr...
'method def rcurly' has incorrect indentation... CruiseDisplay.... /appCruise/src line 76 Checkstyle Pr...
'method def rcurly' has incorrect indentation... CruiseDisplay.... /appCruise/src line 81 Checkstyle Pr...
'method def rcurly' has incorrect indentation... CruiseDisplay.... /appCruise/src line 86 Checkstyle Pr...
'method def rcurly' has incorrect indentation... CruiseDisplay.... /appCruise/src line 39 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 25 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 33 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 34 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 35 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 36 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 37 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.java /appCruise/src line 38 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 46 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 48 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 49 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 50 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 51 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 52 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 61 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 62 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 66 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 67 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 68 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 69 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 70 Checkstyle Pr...
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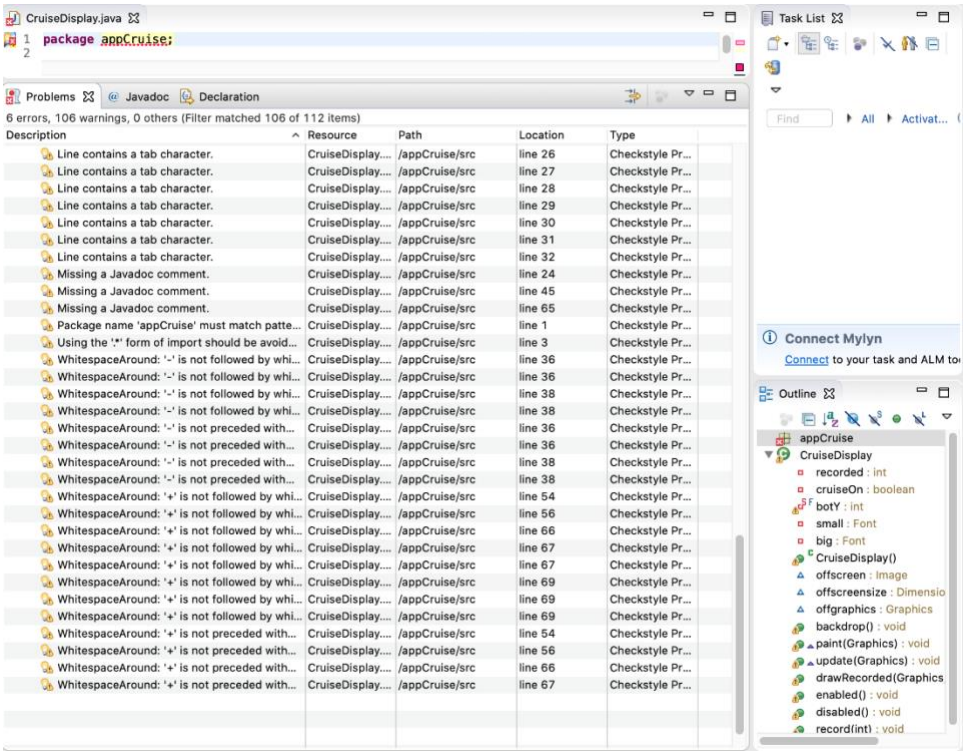
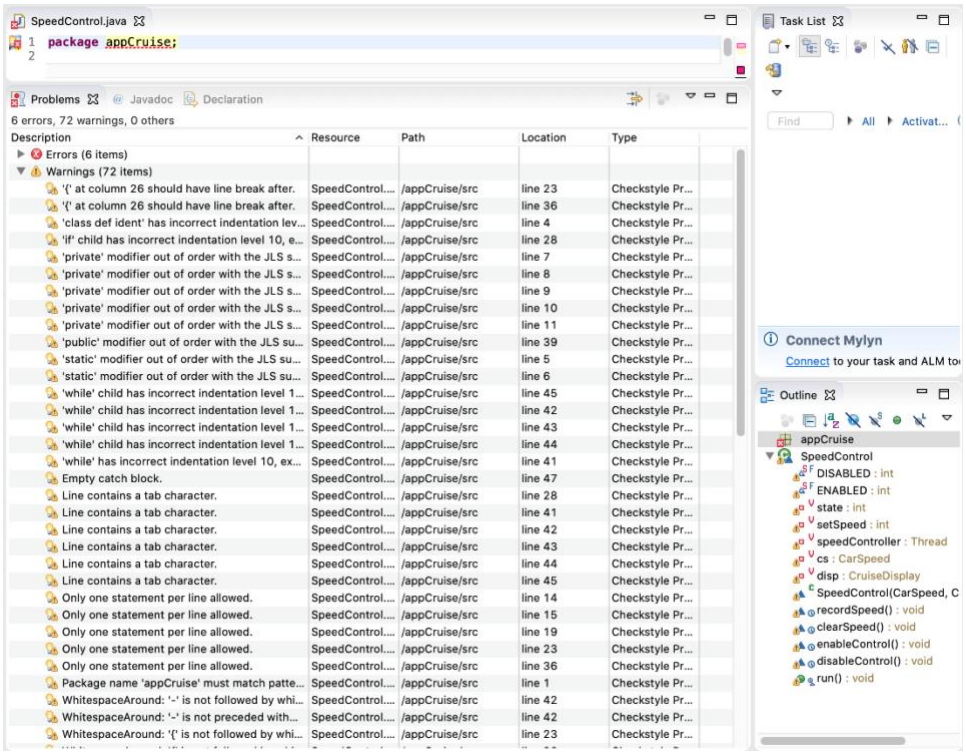
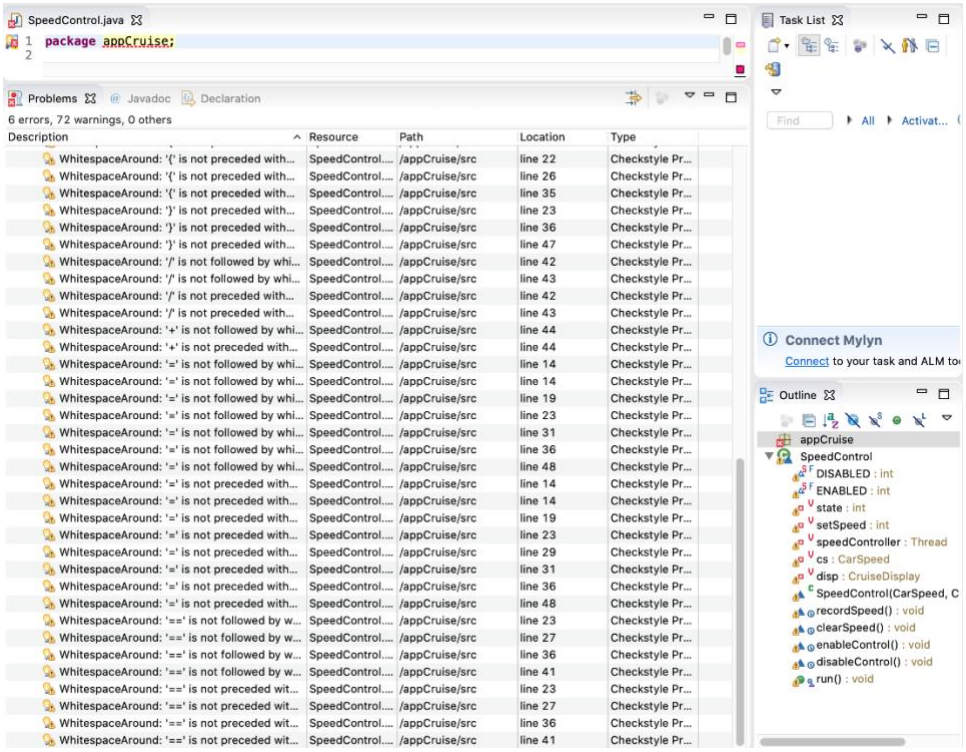
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 75 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 79 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 80 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 84 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 85 Checkstyle Pr...
'method def' child has incorrect indentation l... CruiseDisplay.... /appCruise/src line 42 Checkstyle Pr...
'static' modifier out of order with the JLS su... CruiseDisplay.... /appCruise/src line 10 Checkstyle Pr...
Task List
Find
All
Activat...
Connect Mylyn
Connect to your task and ALM to
Outline
appCruise
CruiseDisplay
recorded : int
cruiseOn : boolean
botY : int
small : Font
big : Font
CruiseDisplay()
offscreen : Image
offscreensize : Dimensio
offgraphics : Graphics
backdrop() : void
paint(Graphics) : void
update(Graphics) : void
drawRecorded(Graphics
enabled() : void
disabled() : void
record(int) : void


CruiseDisplay.java
1 package appCruise;
2
Problems
Javadoc
Declaration
6 errors, 106 warnings, 0 others (Filter matched 106 of 112 items)
Description
Resource
Path
Location
Type
Line contains a tab character. CruiseDisplay.... /appCruise/src line 26 Checkstyle Pr...
Line contains a tab character. CruiseDisplay.... /appCruise/src line 27 Checkstyle Pr...
Line contains a tab character. CruiseDisplay.... /appCruise/src line 28 Checkstyle Pr...
Line contains a tab character. CruiseDisplay.... /appCruise/src line 29 Checkstyle Pr...
Line contains a tab character. CruiseDisplay.... /appCruise/src line 30 Checkstyle Pr...
Line contains a tab character. CruiseDisplay.... /appCruise/src line 31 Checkstyle Pr...
Line contains a tab character. CruiseDisplay.... /appCruise/src line 32 Checkstyle Pr...
Missing a Javadoc comment. CruiseDisplay.... /appCruise/src line 24 Checkstyle Pr...
Missing a Javadoc comment. CruiseDisplay.... /appCruise/src line 45 Checkstyle Pr...
Missing a Javadoc comment. CruiseDisplay.... /appCruise/src line 65 Checkstyle Pr...
Package name 'appCruise' must match patte... CruiseDisplay.... /appCruise/src line 1 Checkstyle Pr...
Using the '.*' form of import should be avoid... CruiseDisplay.... /appCruise/src line 3 Checkstyle Pr...
WhitespaceAround: '-' is not followed by whi... CruiseDisplay.... /appCruise/src line 36 Checkstyle Pr...
WhitespaceAround: '-' is not followed by whi... CruiseDisplay.... /appCruise/src line 36 Checkstyle Pr...
WhitespaceAround: '-' is not followed by whi... CruiseDisplay.... /appCruise/src line 38 Checkstyle Pr...
WhitespaceAround: '-' is not followed by whi... CruiseDisplay.... /appCruise/src line 38 Checkstyle Pr...
WhitespaceAround: '-' is not preceded with... CruiseDisplay.... /appCruise/src line 36 Checkstyle Pr...
WhitespaceAround: '-' is not preceded with... CruiseDisplay.... /appCruise/src line 36 Checkstyle Pr...
WhitespaceAround: '-' is not preceded with... CruiseDisplay.... /appCruise/src line 38 Checkstyle Pr...
WhitespaceAround: '-' is not preceded with... CruiseDisplay.... /appCruise/src line 38 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 54 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 56 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 66 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 67 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 67 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 69 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 69 Checkstyle Pr...
WhitespaceAround: '+' is not followed by whi... CruiseDisplay.... /appCruise/src line 69 Checkstyle Pr...
WhitespaceAround: '+' is not preceded with... CruiseDisplay.... /appCruise/src line 54 Checkstyle Pr...
WhitespaceAround: '+' is not preceded with... CruiseDisplay.... /appCruise/src line 56 Checkstyle Pr...
WhitespaceAround: '+' is not preceded with... CruiseDisplay.... /appCruise/src line 66 Checkstyle Pr...
WhitespaceAround: '+' is not preceded with... CruiseDisplay.... /appCruise/src line 67 Checkstyle Pr...
Task List
Find
All
Activat...
Connect Mylyn
Connect to your task and ALM to
Outline
appCruise
CruiseDisplay
recorded : int
cruiseOn : boolean
botY : int
small : Font
big : Font
CruiseDisplay()
offscreen : Image
offscreensize : Dimensio
offgraphics : Graphics
backdrop() : void
paint(Graphics) : void
update(Graphics) : void
drawRecorded(Graphics
enabled() : void
disabled() : void
record(int) : void

SpeedControl:





3. System Test

3.1. System Requirements

Requirements	Description
R1	To activate Cruise Control, the engine should be turned on.
R2	The activation of the CC will hold the vehicle speed at the selected value.
R3	When the CC is enabled, accelerating the vehicle, will disable the CC.
R4	When the CC is enabled, braking will disable the CC.
R5	The user can turn the engine off anytime. YES
R6	When CC is enabled, the CC GUI should store and display the correct speed. NO
R7	Pressing the resume button should set the CC to last fixed speed. YES
R8	When we turn the engine on, the CC should be off. YES
R9	When the engine is turned off, the CC should be turned off.
R10	The odometer should show the correct distance when the CC is enabled/disabled. YES
R11	When the engine is off, clicking on the CC on/off should have no impact. YES
R12	System should display the Cruise control status (Green for on, Red for off). YES
R13	When the CC is turned on, clicking on the button “on” should have no impact. NO
R14	When the CC is turned off, clicking on the button “off” should have no impact. YES
R15	The CC cannot be set for a speed less than 40km/h. NO
R16	The user should be able to run turn the CC on and off with no limit. YES
R17	When the engine is turned off then on, the CC should be turned off and showing the initial speed as zero. NO

3.2. System Test Cases

Design your test cases according to the following test case template

Test Case Title	Off engine when turned on
Test Case ID	TC001
Requirement IDs	R1
Author	Mohammed Al Salboukh

Description	An order to activate the Curious Control the engine should be off, so the CC will not be able to be activated or manipulated if the engine is off.
Initial State	INACTIVE curios, engine is off
Pre-conditions (if applicable)	Engine is off
Test steps (inputs, actions, etc.)	When the engine is off: • Turn on the engine
Expected Output	The engine be on
Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	Held speed when CC Activated
Test Case ID	TC002
Requirement IDs	R2
Author	Mohammed Al Salboukh
Description	The core of this test case is to see whether the speed value be held
Initial State	INACTIVE curios, engine is on
Pre-conditions (if applicable)	The engine is on
Test steps (inputs, actions, etc.)	When the engine is off: • Turn on the engine • Activate the CC • The speed then must be held to its velocity
Expected Output	Held engine velocity
Priority (High/Medium/Low)	High

Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	Off CC when accelerating
Test Case ID	TC003
Requirement IDs	R3
Author	Mohammed Al Salboukh
Description	The main function of the CC is to hold the speed in a specific time and speed, if the user wants to speed up while the CC is active then the CC state will be changed to INACTIVE due to the need of the user.
Initial State	ACTIVE curios, engine is on
Pre-conditions (if applicable)	The engine is on and the CC is activated.
Test steps (inputs, actions, etc.)	When the engine is off: • Turn on the engine • Activate the CC • The speed then must be held to its velocity • The user accelerates the speed • The CC is turned off (INACTIVE)
Expected Output	The CC be on automatically
Priority (High/Medium/Low)	Medium
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	Off CC when breaking
Test Case ID	TC004
Requirement IDs	R4

Author	Mohammed Al Salboukh
Description	The main function of the CC is to hold the speed in a specific time and speed, if the user wants to hold on while the CC is active(break) then the CC state will be changed to INACTIVE due to the need of the user.
Initial State	ACTIVE curios, engine is on
Pre-conditions (if applicable)	The CC is ACTIVE
Test steps (inputs, actions, etc.)	When the engine is off: • Turn on the engine • Activate the CC • The speed then must be held to its velocity • The user breaks the speed • The CC is turned off (INACTIVE)
Expected Output	Off CC
Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	engine off anytime
Test Case ID	TC005
Requirement IDs	R5
Author	Saleh AlMaqwashy
Description	Showing that the engine can be turned off at any monument by the user
Initial State	Ignition is enabled
Pre-conditions (if applicable)	The engine is on
Test steps (inputs, actions, etc.)	1. Turn off the engine, by clicking the “engineOff” button
Expected Output	Ignition is disabled

Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	CC GUI storing and displaying the correct speed
Test Case ID	TC006
Requirement IDs	R6
Author	Saleh AlMaqwashy
Description	To show that the CC GUI is storing and displaying the speed correctly
Initial State	Ignition is enabled, CC is disabled
Pre-conditions (if applicable)	The engine is on
Test steps (inputs, actions, etc.)	1. Selecting a the wanted speed by clicking the accelerate button or the break button 2. Activating the CC by clicking on “on” button
Expected Output	The wanted speed is stored and displayed on the CC GUI
Priority (High/Medium/Low)	Medium
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	Resuming CC to last fixed speed.
Test Case ID	TC007
Requirement IDs	R7
Author	Saleh AlMaqwashy
Description	Resuming the CC by setting the speed to the last stored speed in the CC
Initial State	Ignition is enabled, CC is disabled

Pre-conditions (if applicable)	The engine is on
Test steps (inputs, actions, etc.)	1. Selecting a the wanted speed by clicking the accelerate button or the break button 2. Activating the CC by clicking the “on” button 3. Deactivating the CC by clicking the “off” button 4. Changing the speed by clicking the accelerate button or the break button 5. Clicking the “resume” button
Expected Output	The last stored speed in the CC is set on the speedometer
Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	The engine on, the CC is off.
Test Case ID	TC008
Requirement IDs	R8
Author	Saleh AlMaqwashy
Description	Whenever the user turns on the engine, the CC should be disabled
Initial State	Ignition is enabled, CC is enabled
Pre-conditions (if applicable)	The engine is on
Test steps (inputs, actions, etc.)	1. Turn off the engine by clicking the “engineOff” button 2. Turn on the engine by clicking the “engineOn” button
Expected Output	The CC should be disabled
Priority (High/Medium/Low)	Medium
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	Off CC when the engine is off
Test Case ID	TC009
Requirement IDs	R9
Author	Hashim Al Ghamdi
Description	CC should be turned off when the user shuts off the engine.
Initial State	The engine is turned on and the CC is on
Pre-conditions (if applicable)	CC on, Engine on
Test steps (inputs, actions, etc.)	1. Turn off engine 2. Observe status of CC
Expected Output	Off CC
Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	Showing of correct distance by odometer regardless of CC status.
Test Case ID	TC010
Requirement IDs	R10
Author	Hashim Al Ghamdi
Description	The CC should not affect the odometer's calculation of distance travelled by the car.
Initial State	The engine is turned on and the CC is on
Pre-conditions (if applicable)	CC on, Engine on
Test steps (inputs, actions, etc.)	1. Observe odometer with CC on 2. Turn off CC 3. Observe odometer with CC off
Expected Output	Unchanged and correct distance displayed on odometer.
Priority (High/Medium/Low)	High

Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	CC ineffective while engine is off.
Test Case ID	TC011
Requirement IDs	R11
Author	Hashim Al Ghamdi
Description	The CC should not affect anything when the engine is turned off.
Initial State	Engine is turned off.
Pre-conditions (if applicable)	Engine off
Test steps (inputs, actions, etc.)	1. Attempt to turn on CC 2. Observe system for any changes 3. Attempt to turn off CC 4. Observe system for any changes
Expected Output	Stable state of the car with no changes.
Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	Display of CC status.
Test Case ID	TC012
Requirement IDs	R12
Author	Hashim Al Ghamdi
Description	The system should display an indication of CC status (green for on, red for off).
Initial State	Engine is on and the car has reached 40km/h or more.

Pre-conditions (if applicable)	Engine on, car has reached appropriate speed.
Test steps (inputs, actions, etc.)	1. Turn on CC 2. Observe system for green light indicating activation 3. Turn off CC 4. Observe system for red light indicating deactivation
Expected Output	Green light when CC is turned on and red light when CC is turned off.
Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	'On' button when CC is on.
Test Case ID	TC013
Requirement IDs	R13
Author	Salman Al Ghamdi
Description	When the CC is on, pressing the 'On' button should not have any impact in the system whatsoever.
Initial State	Engine is on.
Pre-conditions (if applicable)	The car has reached an appropriate speed, and the CC is on.
Test steps (inputs, actions, etc.)	1. Press 'On' button multiple times while CC is active. 2. Observe any potential changes.
Expected Output	No effect at all.
Priority (High/Medium/Low)	Medium
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	'Off' button when CC is off.
Test Case ID	TC014

Requirement IDs	R14
Author	Salman Al Ghamdi
Description	When the CC is off, pressing the 'Off' button should not have any impact in the system whatsoever.
Initial State	Engine is on.
Pre-conditions (if applicable)	The CC is off.
Test steps (inputs, actions, etc.)	1. Press 'Off' button multiple times while CC is inactive. 2. Observe any potential changes.
Expected Output	No effect at all.
Priority (High/Medium/Low)	Medium
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	CC cannot be set for less than 40km/h
Test Case ID	TC015
Requirement IDs	R15
Author	Salman Al Ghamdi
Description	The CC cannot be turned on for a speed less than 40km/h
Initial State	Engine is on.
Pre-conditions (if applicable)	-
Test steps (inputs, actions, etc.)	1. Accelerate the car to a speed less than 40km/h 2. Turn on the CC
Expected Output	CC is inactive.
Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	No limit for ‘On/Off’ buttons
Test Case ID	TC016
Requirement IDs	R16
Author	Salman Al Ghamdi
Description	Pressing ‘On’ or ‘Off’ should have no limit, either on number of clicks or the time to do so.
Initial State	Engine is on.
Pre-conditions (if applicable)	-
Test steps (inputs, actions, etc.)	1. Press ‘On/Off’ buttons multiple times. 2. Observe any potential limitation.
Expected Output	No limitation at all.
Priority (High/Medium/Low)	Medium
Test Type (Functional, Performance, stress, etc.)	Functional

Test Case Title	CC initial value is always 0km/h.
Test Case ID	TC017
Requirement IDs	R17
Author	Salman Al Ghamdi
Description	Switching the engine off then on should result in resting the value for the CC to the initial value “0km/h”.
Initial State	Engine is on.
Pre-conditions (if applicable)	CC has a value other than the initial value.
Test steps (inputs, actions, etc.)	1. Switch the engine off. 2. Switch it on. 3. Observe the value of the CC.
Expected Output	The value is reset back to 0km/h

Priority (High/Medium/Low)	High
Test Type (Functional, Performance, stress, etc.)	Functional

3.3. Report on the Execution of System Test Cases

Fill in the Test Execution Report Template:

TC ID	Verdict (Pass/Fail/Pass with exception)	Comments (If fail or pass with exception (Actual output vs. Expected output)	Bug ID	Execution Date	Author	Engineer
TC001	Pass	--	--	1/4/2020	Mohammed Al Salboukh	Mohammed Al Salboukh
TC002	Pass with exception	The expected output that the velocity is shown and displayed in both the black right (cruise control) and the odometer.	B001	1/4/2020	Mohammed Al Salboukh	Mohammed Al Salboukh
TC003	Pass	--	--	1/4/2020	Mohammed Al Salboukh	Mohammed Al Salboukh
TC004	Fail	The expected value for this test case is that when break is fired the CC turned off. But the actual value is that the CC does not turned off, instead, it stays constant with the same velocity.	B002	1/4/2020	Mohammed Al Salboukh	Mohammed Al Salboukh
TC005	Pass	--	--	2/4/2020	Saleh AlMaqwashy	Saleh AlMaqwashy
TC006	Fail	The expected output wasn't shown, the CC GUI did not display the wanted speed correctly, the actual output is not the expected output	B003	2/4/2020	Saleh AlMaqwashy	Saleh AlMaqwashy
TC007	Pass	--	--	2/4/2020	Saleh AlMaqwashy	Saleh AlMaqwashy
TC008	Pass	--	--	2/4/2020	Saleh AlMaqwashy	Saleh AlMaqwashy
TC009	Pass	--	--	2/4/2020	Hashim Al Ghamdi	Hashim Al Ghamdi

TC010	Pass	--	--	2/4/2020	Hashim Al Ghamdi	Hashim Al Ghamdi
TC011	Pass	--	--	2/4/2020	Hashim Al Ghamdi	Hashim Al Ghamdi
TC012	Pass	--	--	2/4/2020	Hashim Al Ghamdi	Hashim Al Ghamdi
TC013	Fail	Pressing on the 'On' button multiple times results on a noticeable decline in the speed value that is being displayed.	B004	4/4/2020	Salman Al Ghamdi	Salman Al Ghamdi
TC014	Pass	--	--	4/4/2020	Salman Al Ghamdi	Salman Al Ghamdi
TC015	Fail	The value observed cannot be determined due to the difference between the value displayed in the odometer and the value displayed on the CC.	B005	4/4/2020	Salman Al Ghamdi	Salman Al Ghamdi
TC016	Pass	--	--	4/4/2020	Salman Al Ghamdi	Salman Al Ghamdi
TC017	Fail	The value displayed on the CC is being reset to a value other than 0km/h.	B006	4/4/2020	Salman Al Ghamdi	Salman Al Ghamdi

TC ID	**Verdict (Pass/Fail/Pass with exception)**	**Comments (If fail or pass with exception (Actual output vs. Expected output)**	**Bug ID**	**Execution Date**	**Author**	**Engineer**
TC001	0					
TC002						
TC003						

		Bug List			
Bug ID	Test Case ID	Detailed Description	Severity (High/ Medium/low)	Data Found	Submitter
B001	TC002	It is expected that when the CC is activated the velocity is displayed in the odometer and in the right black digital	Medium	1/4/2020	Mohammed Al Salboukh

		page; however, it seems that there is inconsistency in the right digital speed, but the odometer worked as expected.			
B002	TC004	The CC is not turned off when breaking the system. It is expected that the CC turned off when the break button is fired	High	1/4/2020	Mohammed Al Salboukh
B003	TC006	When the CC is enabled to the wanted speed the speed is set on the speedometer, but the CC GUI is not displaying the correct speed there is a difference (about +20)	Medium	2/4/2020	Saleh Al Maqwashy
B004	TC013	Pressing on the 'On' button multiple times results on a noticeable decline -happens every 6-7 clicks approximately- in the speed value that is being displayed which results in incorrect values.	High	4/4/2020	Salman Al Ghamdi
B005	TC015	The test cannot be determined since the CC GUI is not displaying the correct speed and there is a huge noticeable difference (about +20) between the CC and the odometer.	Medium	4/4/2020	Salman Al Ghamdi
B006	TC017	When the engine is switched on after being off, the value displayed is around 30km/h which is not true since the CC have to be reset.	High	4/4/2020	Salman Al Ghamdi

		Bug List			
Bug ID	Test Case ID	Detailed Description	Severity (High/ Medium/low)	Date found	Submitter
B001	TC002				
B002	TC003				