

Race Car Set Up

Technical Architecture

Solution uses .Net 6.0 and UnitTest Project use MSTest.

Code Coverage report is generated with FineCodeCoverage tool.

Source code added in Git with public rights. Library hasn't any dependencies.

Unit Test project having Moq(4.18.1) and Microsoft.NET.Test.SDK(16.11.0) dependencies.

SonarQube Integration for Code Analysis.

Race Solution consists of 3 Projects.

- RaceSetUpLibrary : Core Logic is written under this. Interface ICarSetUp having SetCarRanks for calculating the car ranks on race completion time.
- RaceTestProject : This is unit test project for RaceSetUpLibrary. % different test method are written to test the logic of the code. 80% code coverage is done. Report is generated with the help of FineCodeCoverage tool.
- Race: This is console app, which use the RaceSetUpLibrary. This is just for demonstrate the usage of the SetCarRanks method. It generate the output like below:

Sonar Qube Code Analysis Report

Tool	Description
Code Coverage	80%
Vulnerabilities	0 – Rating A
Security Hotspot	Rating A
Reliability	Rating A
Code Smells	0 – Rating A
Maintainability	Rating A

Code Coverage Report

Collapse all | Expand all

By assembly

Grouping:

Filter:

▼ Name	▼ Covered	▼ Uncovered	▼ Coverable	▼ Total	▼ Line coverage	▼ Covered	▼ Total	▼ Branch coverage
+ Moq	0	0	0	0	<div></div>	0	0	<div></div>
- RaceSetUpLibrary	64	18	82	124	78% <div></div>	20	22	90.9% <div></div>
RaceSetUpLibrary.RaceCarConfiguration	11	0	11	22	100% <div></div>	0	0	<div></div>
RaceSetUpLibrary.RaceCarRankDetails	2	3	5	12	40% <div></div>	0	0	<div></div>
RaceSetUpLibrary.RaceCarSetup	51	12	63	78	80.9% <div></div>	20	22	90.9% <div></div>
RaceSetUpLibrary.RaceTrackConfiguration	0	3	3	12	0% <div></div>	0	0	<div></div>
+ RaceTestProject	54	0	54	96	100% <div></div>	0	0	<div></div>

Console Output

```
Car Rank: 1
Car Race Completion Time: 1509
Car Details: -----
Car Fuel Capacity: 189
Car Lap Completion Time: 30
```

Car Lap Fuel Consumption: 8
Car Rank: 2
Car Race Completion Time: 1603
Car Details: -----
Car Fuel Capacity: 258
Car Lap Completion Time: 32
Car Lap Fuel Consumption: 5
Car Rank: 3
Car Race Completion Time: 1809
Car Details: -----
Car Fuel Capacity: 151
Car Lap Completion Time: 36
Car Lap Fuel Consumption: 8
Car Rank: 4
Car Race Completion Time: 2306
Car Details: -----
Car Fuel Capacity: 276
Car Lap Completion Time: 46
Car Lap Fuel Consumption: 9
Car Rank: 5
Car Race Completion Time: 2309
Car Details: -----
Car Fuel Capacity: 156
Car Lap Completion Time: 46
Car Lap Fuel Consumption: 9