

Unit Tests

The back-end part of the program can be broken down into smaller entities, each of which was developed using Test Driven Development (TDD). The tests for each entity are shown below:

- LandPlot
- Market
- Player
- Roboticon
- RoboticonQuest

Here are the results of these tests:

Test ID	Test Entity	Test Name	Pass/Fail Criteria	Passed?
1	LandPlot	testInstallRoboticon()	Roboticons are installed successfully on plot	Pass
2	LandPlot	landPlotShouldNotReinstallRoboticon()	Roboticons are only installed once	Pass
3	LandPlot	testProduceResources()	Land plot successfully produces resources on correct quantities	Pass
4	Market	marketShouldInitWithCorrectValues()	Market has correct amounts of resources on initialisation	Pass
5	Market	marketShouldAbleToGetAndSetResources()		Pass
6	Market	marketShouldHaveCorrectPricesForResources()	Market has correct resource buy prices on initialisation	Pass
7	Market	marketCanCheckResourceMoreThanAmountYouWantToBuy()	Market can test to see if it has enough resources to fulfill a request	Pass

8	Market	marketShouldReturnCorrectSellPrice()	Market returns correct sell prices on initialisation	Pass
9	Market	marketShouldReduceResourcesWhenSells()	Market reduces the amounts of resources it has when it sells	Pass
10	Player	testPlayerInitialMoney()	Player has the correct amount of money on initialisation (100)	Pass
11	Player	testPlayerBuyResource()	Player can successfully buy resources	Pass
12	Player	testPlayerSellResource()	Player can successfully sell resources	Pass
13	Player	testPlayerCannotBuyMoreThanAllowed()	Player cannot buy more resources than the market has	Pass
14	Player	testPlayerCannotSellMoreEnergyThanAllowed()	Player cannot sell more energy than they own	Pass
15	Player	testPlayerCannotSellMoreOreThanAllowed()	Player cannot sell more ore than they own	Pass
16	Player	testPlayerCanCustomiseRoboticon()	Player can successfully customise a roboticon	Pass
17	Player	testPlayerCanCustomiseOwnedRoboticons()	Player can successfully customise a roboticon that they own	Pass
18	Roboticon	initialisationTest()	Roboticon is initialised correctly	Pass

19	Roboticon	customisationTest()	Roboticon can be successfully customised	Pass
20	Roboticon	installationTest()	Roboticon can be installed	Pass
21	StringUtil	capitaliseShouldBeDoneProperly()	First letter of input string is capitalised	Pass
22	RoboticonQuest	phaseTest()	Game moves to the next phase successfully	Fail
23	RoboticonQuest	playerTest()	Game moves to next player successfully	Pass