Fall 2019

CSE-5321-002 - Software Testing

Homework Assignment 4

Name	UTA ID
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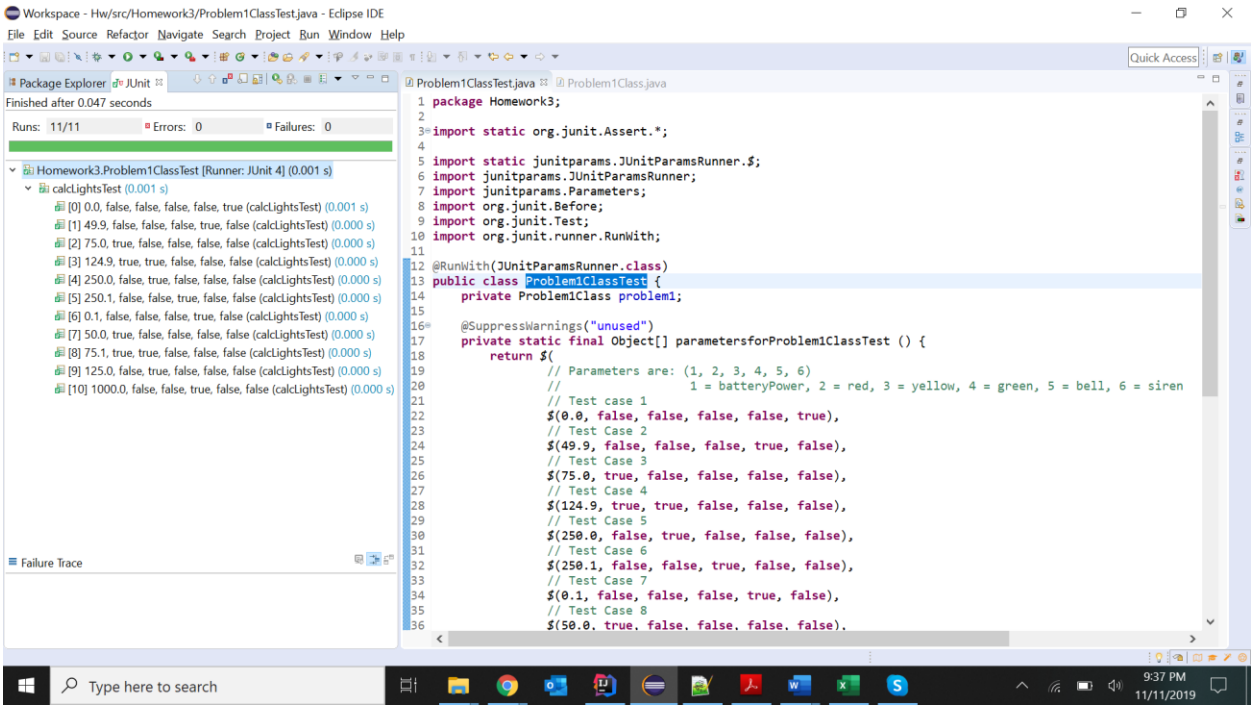
Please find the CSV files I used for testing (/CsvTestCaseTables) and Junit test files (/JUnit Test Files), attached to the zip file I submitted.

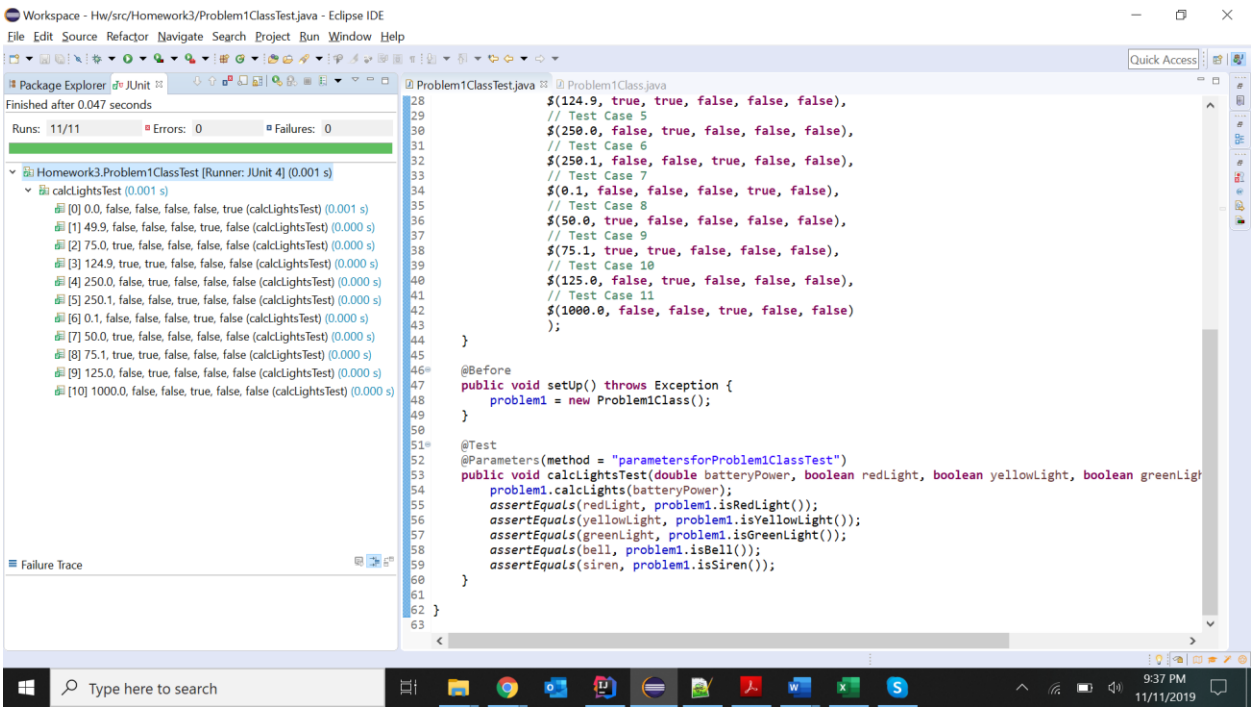
Problem 1

1.Test Case Table:

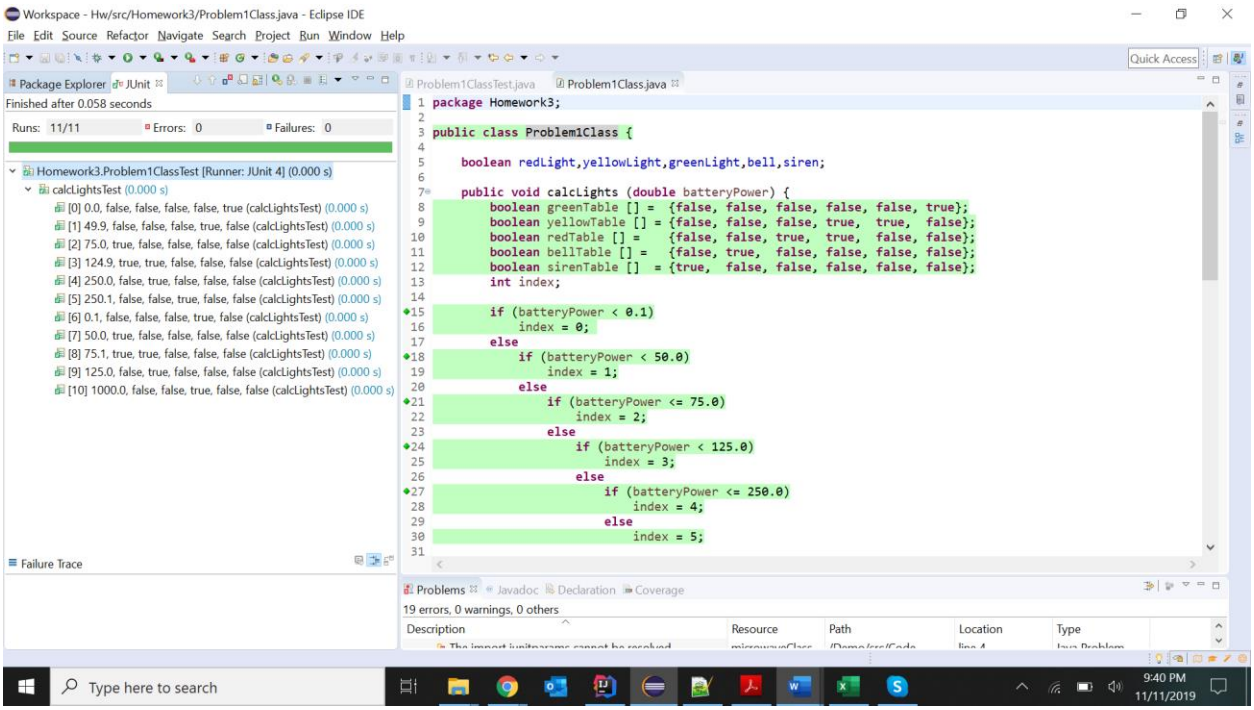
Test Case Number	Inputs	Expected Outputs					
	batteryPower (watts)	red	yellow	green	bell	siren	Basis Path
1	0.0	FALSE	FALSE	FALSE	FALSE	**TRUE**	15-16-32
2	49.9	FALSE	FALSE	FALSE	**TRUE**	FALSE	15-18-19-32
3	75.0	**TRUE**	FALSE	FALSE	FALSE	FALSE	15-18-21-22-32
4	124.9	**TRUE**	**TRUE**	FALSE	FALSE	FALSE	15-18-21-24-25-32
5	250.0	FALSE	**TRUE**	FALSE	FALSE	FALSE	15-18-21-24-27-28-32
6	250.1	FALSE	FALSE	**TRUE**	FALSE	FALSE	15-18-21-24-**27-30-32**
7	0.1	FALSE	FALSE	FALSE	**TRUE**	FALSE	-
8	50.0	**TRUE**	FALSE	FALSE	FALSE	FALSE	-
9	75.1	**TRUE**	**TRUE**	FALSE	FALSE	FALSE	-
10	125.0	FALSE	**TRUE**	FALSE	FALSE	FALSE	-
11	1,000.0	FALSE	FALSE	**TRUE**	FALSE	FALSE	-

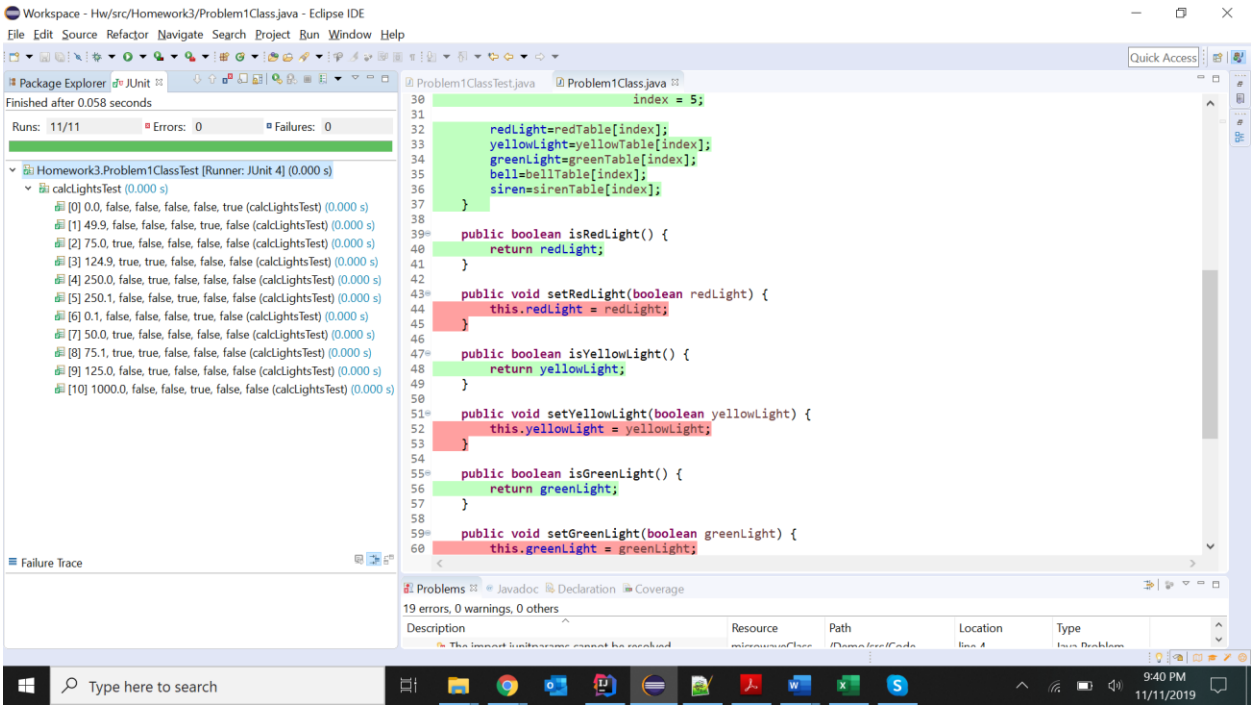
2.Junit Pass Indicator:

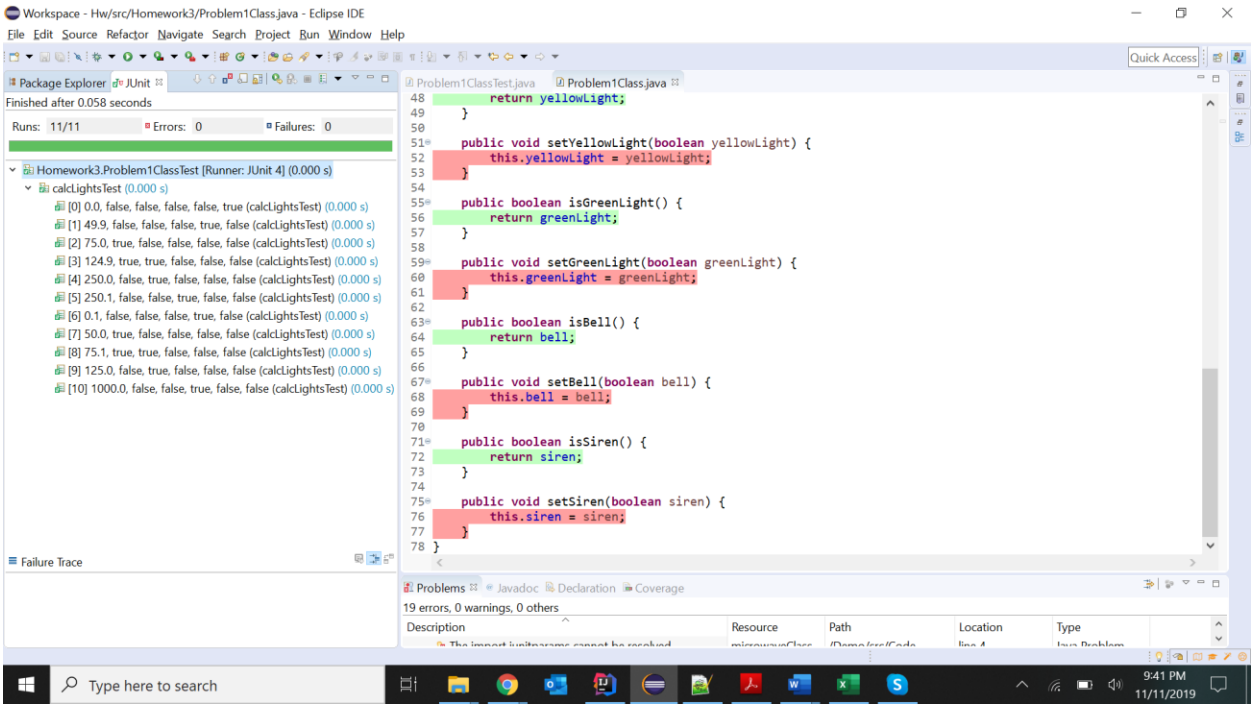




3. JaCoCo Statement Coverage:





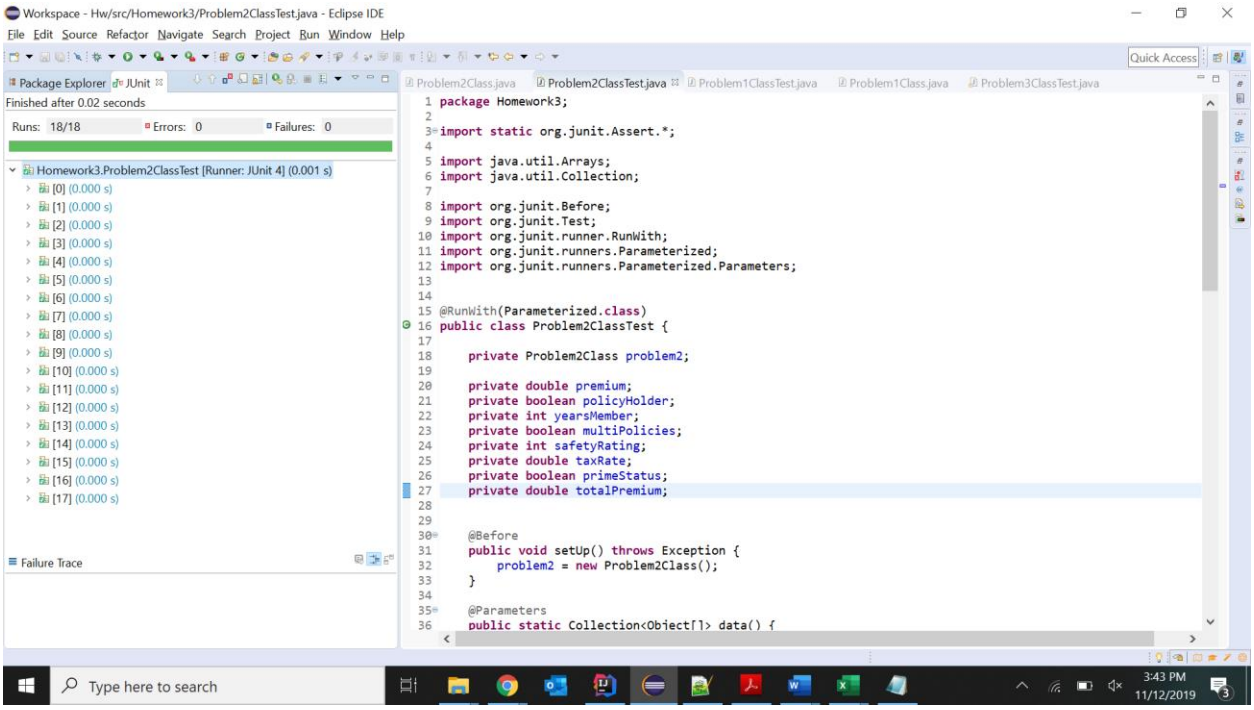


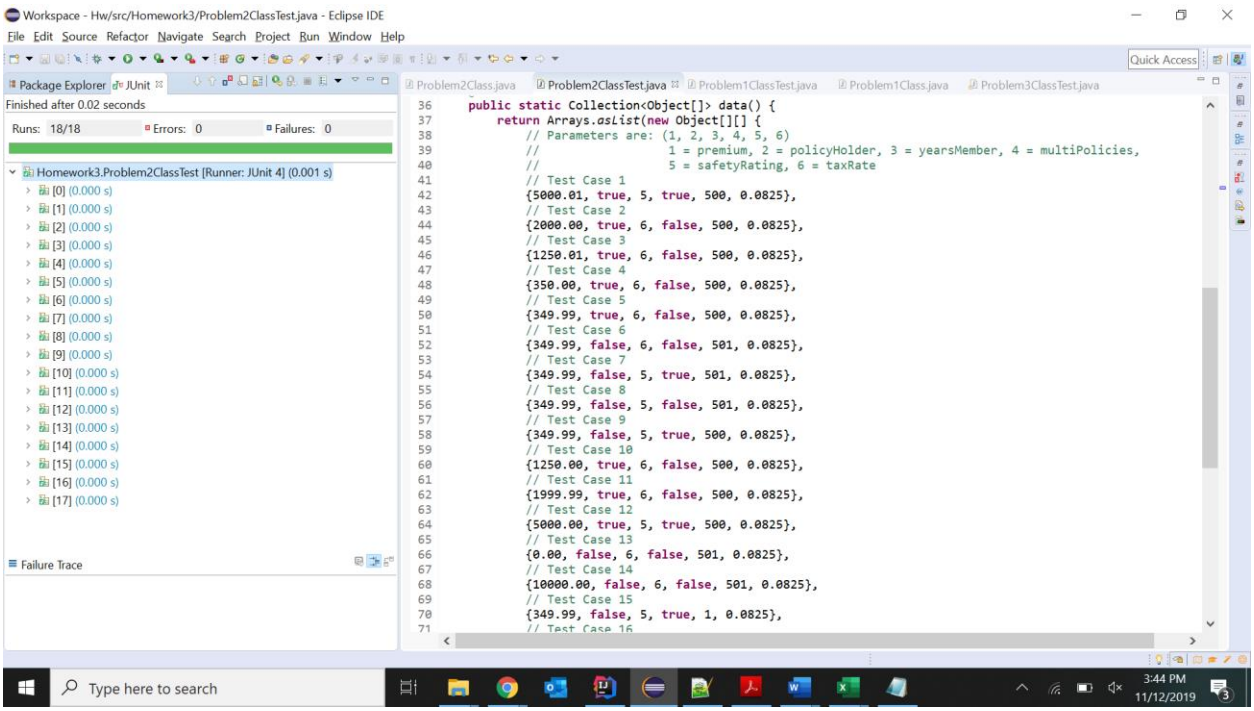
Problem 2

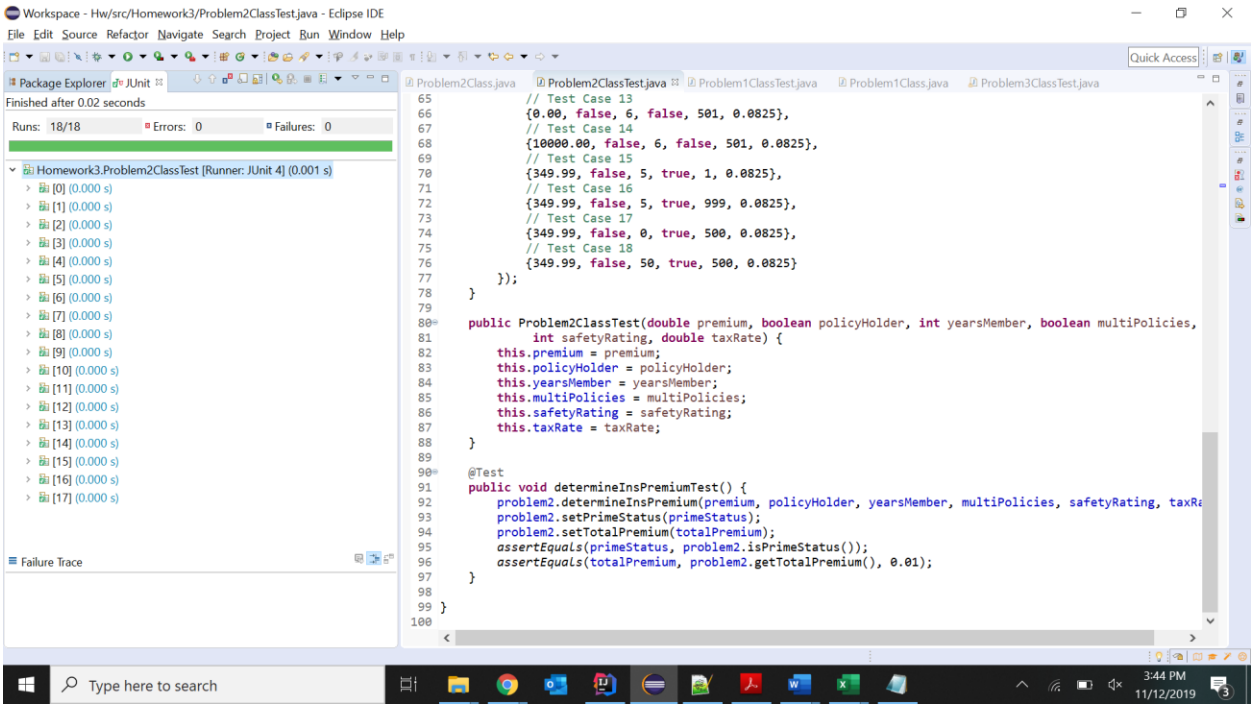
1.Test Case Table:

Test Case	Inputs						Expercted Outputs			
Number	premium	policyHolder	yearsMember	multiPolicies	safetyRating	taxRate	primeStatus	totalPremium	Basis Path	MCDC stmt 26-35
1	$5,000.01	TRUE	5	TRUE	500	8.25%	TRUE	$4,330.01	12-13-26-27-36	TFTF
2	$2,000.00	TRUE	6	FALSE	500	8.25%	TRUE	$1,840.25	12-15-16-26-27-36	
3	$1,250.01	TRUE	6	FALSE	500	8.25%	TRUE	$1,217.82	12-15-18-19-26-27-36	
4	$350.00	TRUE	6	FALSE	500	8.25%	TRUE	$359.93	12-15-18-21-22-26-27-36	
5	$349.99	TRUE	6	FALSE	500	8.25%	TRUE	$378.86	12-15-18-21-24-26-27-36	
6	$349.99	FALSE	6	FALSE	501	8.25%	TRUE	$378.86	12-15-18-21-24-26-29-30-36	FTFT
7	$349.99	FALSE	5	TRUE	501	8.25%	TRUE	$378.86	12-15-18-21-24-26-29-32-33-34-36	FFTT
8	$349.99	FALSE	5	FALSE	501	8.25%	FALSE	$378.86	12-15-18-21-24-26-29-32-36	FFFT
9	$349.99	FALSE	5	TRUE	500	8.25%	FALSE	$378.86	12-15-18-21-24-26-29-32-33-36	FFTF
10	$1,250.00	TRUE	6	FALSE	500	8.25%	TRUE	$1,285.47	-	
11	$1,999.99	TRUE	6	FALSE	500	8.25%	TRUE	$1,948.49	-	
12	$5,000.00	TRUE	5	TRUE	500	8.25%	TRUE	$4,600.63	-	
13	$0.00	FALSE	6	FALSE	501	8.25%	TRUE	$0.00	Extreme range premium	
14	$10,000.00	FALSE	6	FALSE	501	8.25%	TRUE	$8,660.00	Extreme range premium	
15	$349.99	FALSE	5	TRUE	1	8.25%	FALSE	$378.86	Extreme range safety rating	
16	$349.99	FALSE	5	TRUE	999	8.25%	TRUE	$378.86	Extreme range safety rating	
17	$349.99	FALSE	0	TRUE	500	8.25%	FALSE	$378.86	Extreme range years member	
18	$349.99	FALSE	50	TRUE	500	8.25%	TRUE	$378.86	Extreme range years member	

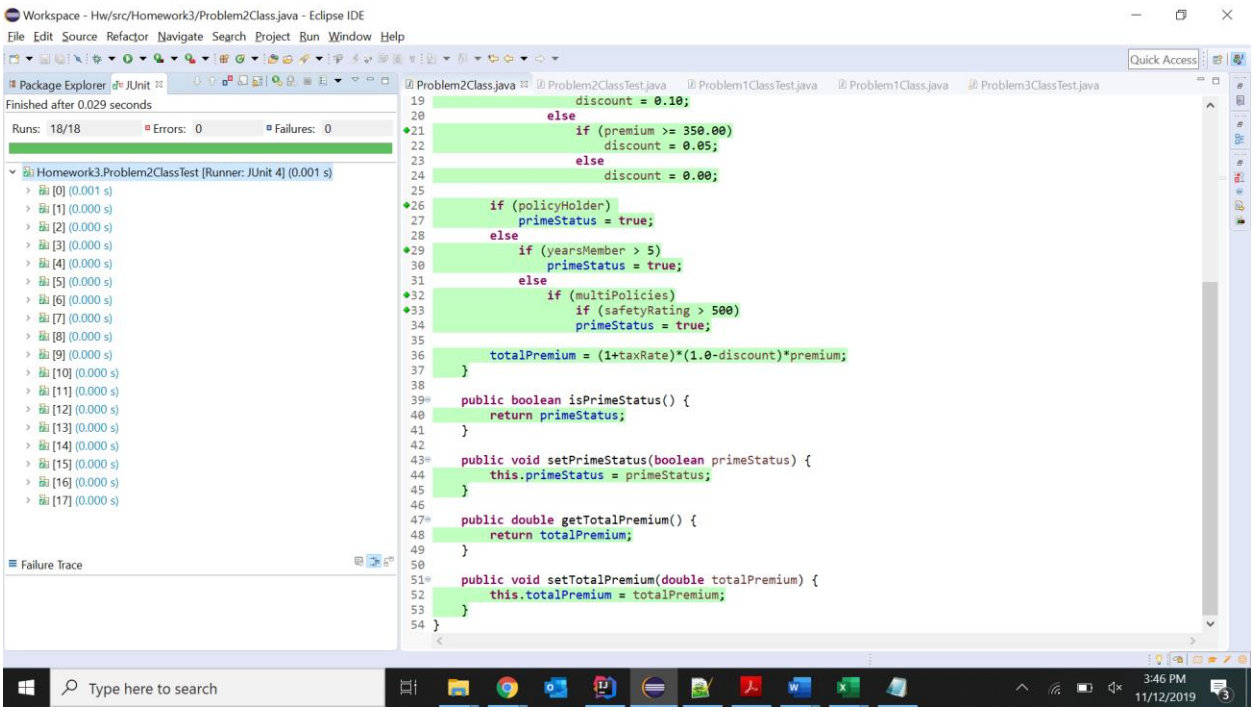
2.Junit Pass Indicator:

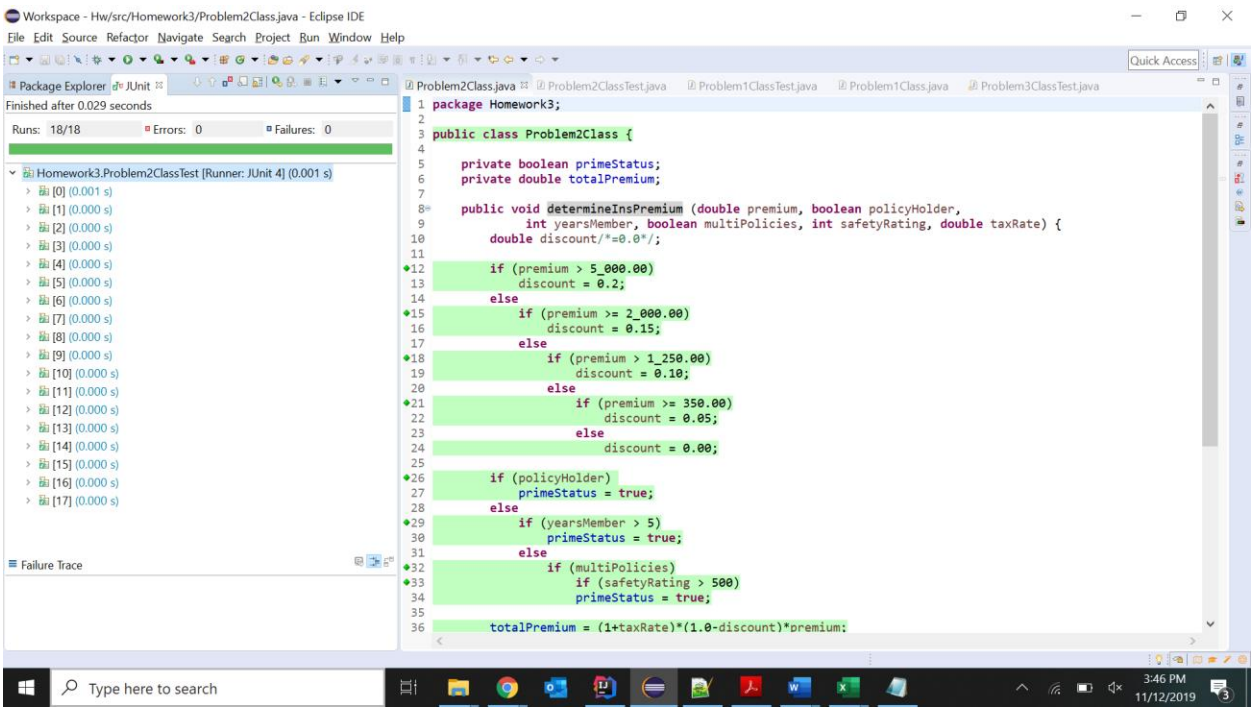






3. JaCoCo Statement Coverage:



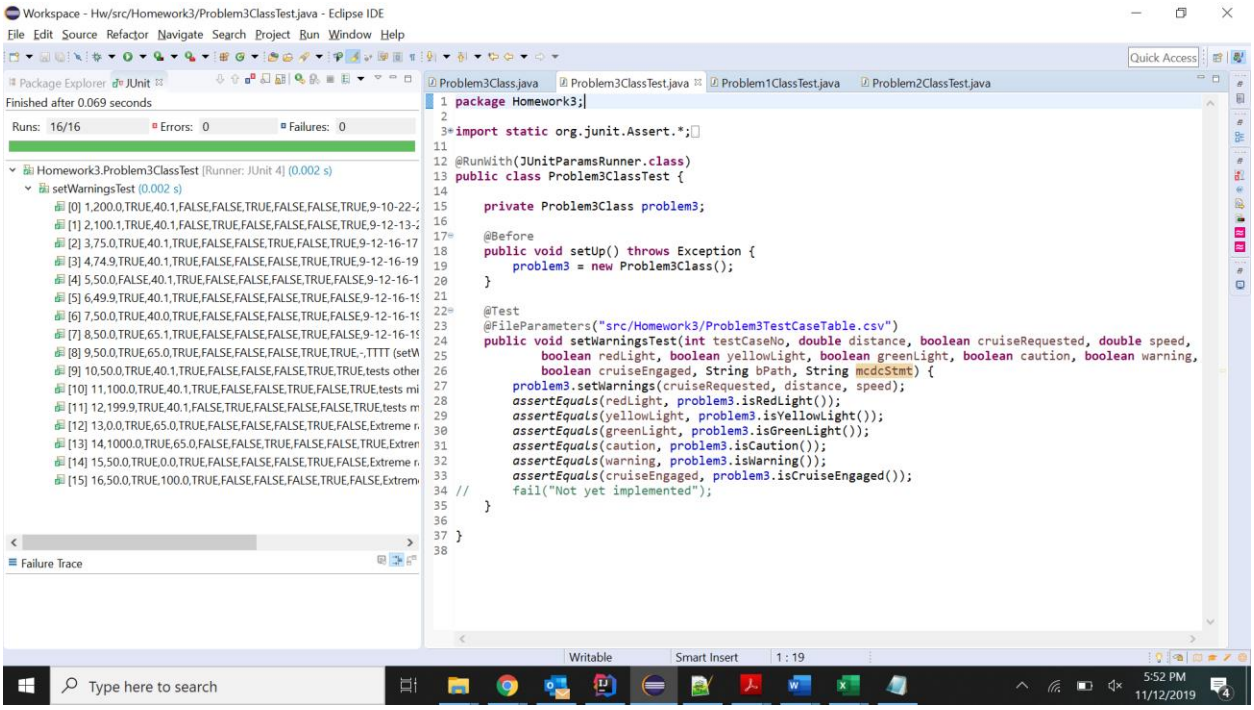


Problem 3

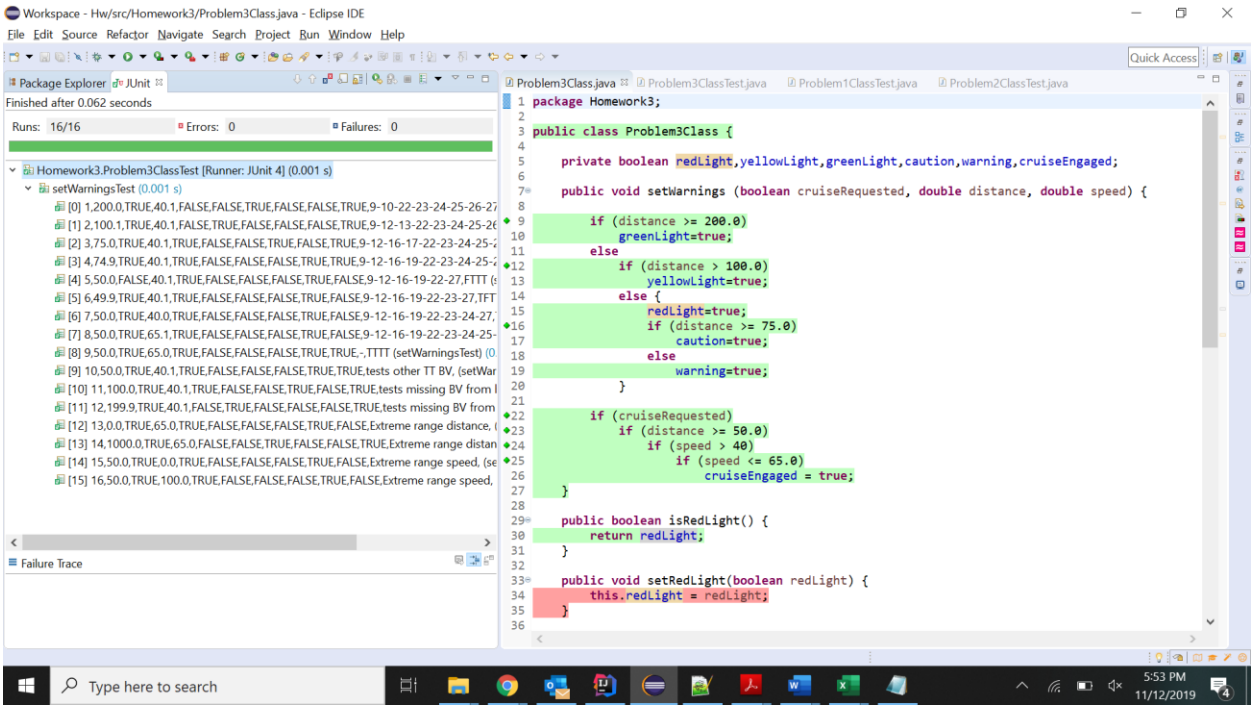
1.Test Case Table:

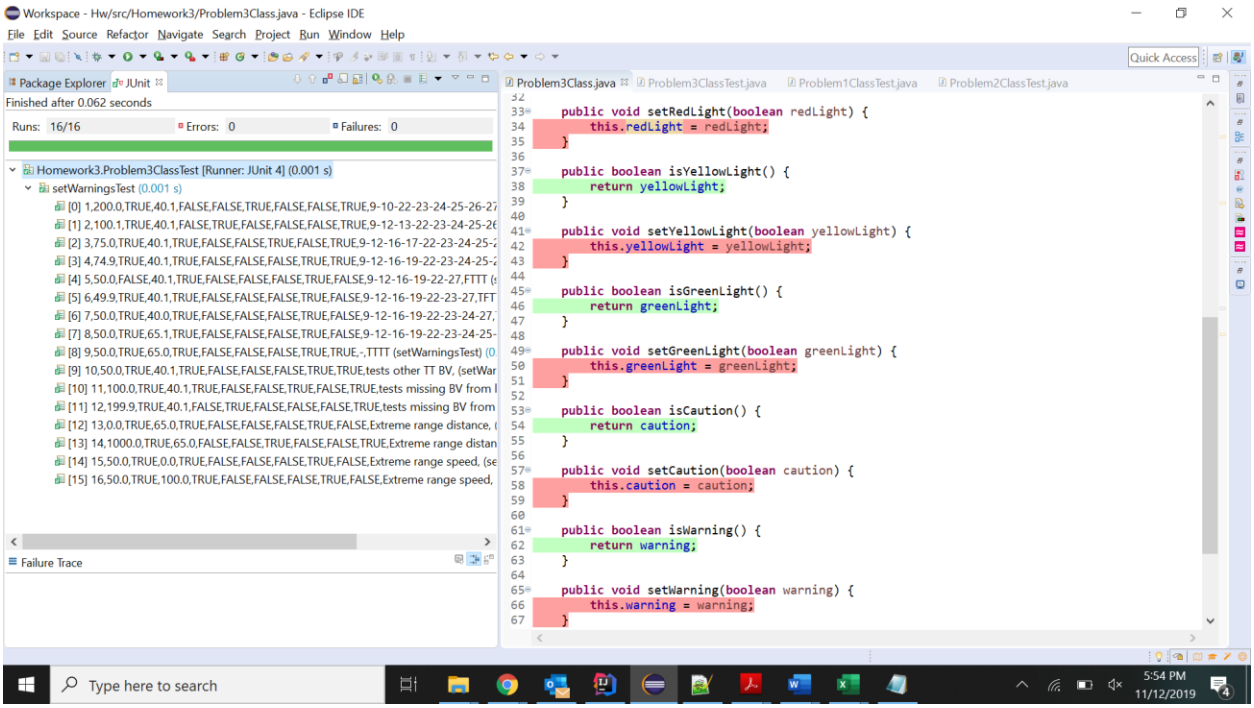
Test Case Number	Inputs			Expected Outputs						Basis Path	MCDC stmt 22-26
	distance (ft.)	cruiseRequested	speed (mph)	redLight	yellowLight	greenLight	caution	warning	cruiseEngaged		
1	200.0	TRUE	40.1	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	9-10-22-23-24-25-26-27	
2	100.1	TRUE	40.1	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	9-12-13-22-23-24-25-26-27	
3	75.0	TRUE	40.1	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	9-12-16-17-22-23-24-25-26-27	
4	74.9	TRUE	40.1	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	9-12-16-19-22-23-24-25-26-27	
5	50.0	FALSE	40.1	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	9-12-16-19-22-27	FTTT
6	49.9	TRUE	40.1	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	9-12-16-19-22-23-27	TFTT
7	50.0	TRUE	40	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	9-12-16-19-22-23-24-27	TTFT
8	50.0	TRUE	65.1	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	9-12-16-19-22-23-24-25-27	TTTF
9	50.0	TRUE	65	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	-	TTTT
10	50.0	TRUE	40.1	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	tests other TT BV	
11	100.0	TRUE	40.1	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	tests missing BV from bPath	
12	199.9	TRUE	40.1	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	tests missing BV from bPath	
13	0.0	TRUE	65	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	Extreme range distance	
14	1,000.0	TRUE	65	FALSE	FALSE	TRUE	FALSE	FALSE	TRUE	Extreme range distance	
15	50.0	TRUE	0	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	Extreme range speed	
16	50.0	TRUE	100	TRUE	FALSE	FALSE	FALSE	TRUE	FALSE	Extreme range speed	

2.Junit Pass Indicator:



3. JaCoCo Statement Coverage:




Workspace - Hw/src/Homework3/Problem3Class.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
Package Explorer JUnit
Finished after 0.062 seconds
Runs: 16/16 Errors: 0 Failures: 0
Homework3.Problem3ClassTest [Runner: JUnit 4] (0.001 s)
setWarningsTest (0.001 s)
[0] 1,200.0,TRUE,40.1,FALSE,FALSE,TRUE,FALSE,FALSE,TRUE,9-10-22-23-24-25-26-27
[1] 2,100.1,TRUE,40.1,FALSE,TRUE,FALSE,FALSE,FALSE,TRUE,9-12-13-22-23-24-25-26
[2] 3,75.0,TRUE,40.1,TRUE,FALSE,FALSE,TRUE,FALSE,TRUE,9-12-16-17-22-23-24-25-2
[3] 4,74.9,TRUE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,9-12-16-19-22-23-24-25-2
[4] 5,50.0,FALSE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-27,FTTT (s
[5] 6,49.9,TRUE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-23-27,TFT
[6] 7,50.0,TRUE,40.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-23-24-27,
[7] 8,50.0,TRUE,65.1,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-23-24-25-
[8] 9,50.0,TRUE,65.0,TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,-,TTTT (setWarningsTest) (0
[9] 10,50.0,TRUE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,tests other TT BV, (setWar
[10] 11,100.0,TRUE,40.1,TRUE,FALSE,FALSE,TRUE,FALSE,TRUE,tests missing BV from
[11] 12,199.9,TRUE,40.1,FALSE,TRUE,FALSE,FALSE,FALSE,TRUE,tests missing BV from
[12] 13,0.0,TRUE,65.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,Extreme range distance,
[13] 14,1000.0,TRUE,65.0,FALSE,FALSE,TRUE,FALSE,FALSE,TRUE,Extreme range distan
[14] 15,50.0,TRUE,0.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,Extreme range speed, (se
[15] 16,50.0,TRUE,100.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,Extreme range speed,
Failure Trace
Problem3Class.java Problem3ClassTest.java Problem1ClassTest.java Problem2ClassTest.java
public void setRedLight(boolean redLight) {
this.redLight = redLight;
}
public boolean isYellowLight() {
return yellowLight;
}
public void setYellowLight(boolean yellowLight) {
this.yellowLight = yellowLight;
}
public boolean isGreenLight() {
return greenLight;
}
public void setGreenLight(boolean greenLight) {
this.greenLight = greenLight;
}
public boolean isCaution() {
return caution;
}
public void setCaution(boolean caution) {
this.caution = caution;
}
public boolean isWarning() {
return warning;
}
public void setWarning(boolean warning) {
this.warning = warning;
}
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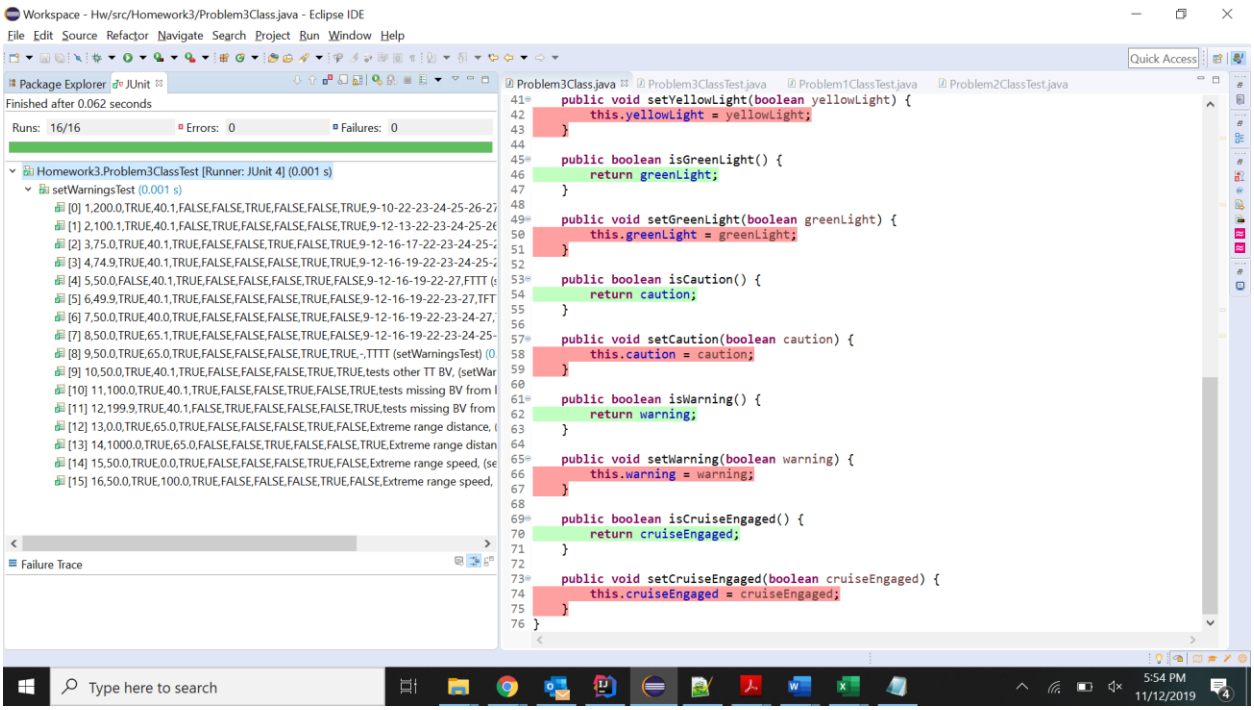
Workspace - Hw/src/Homework3/Problem3Class.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Quick Access
Package Explorer JUnit
Finished after 0.062 seconds
Runs: 16/16 Errors: 0 Failures: 0
Homework3.Problem3ClassTest [Runner: JUnit 4] (0.001 s)
setWarningsTest (0.001 s)
[0] 1,200.0,TRUE,40.1,FALSE,FALSE,TRUE,FALSE,FALSE,TRUE,9-10-22-23-24-25-26-27
[1] 2,100.1,TRUE,40.1,FALSE,TRUE,FALSE,FALSE,FALSE,TRUE,9-12-13-22-23-24-25-26
[2] 3,75.0,TRUE,40.1,TRUE,FALSE,FALSE,TRUE,FALSE,TRUE,9-12-16-17-22-23-24-25-2
[3] 4,74.9,TRUE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,9-12-16-19-22-23-24-25-2
[4] 5,50.0,FALSE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-27,FTTT (s
[5] 6,49.9,TRUE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-23-27,TFT
[6] 7,50.0,TRUE,40.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-23-24-27,
[7] 8,50.0,TRUE,65.1,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,9-12-16-19-22-23-24-25-
[8] 9,50.0,TRUE,65.0,TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,-,TTTT (setWarningsTest) (0
[9] 10,50.0,TRUE,40.1,TRUE,FALSE,FALSE,FALSE,TRUE,TRUE,tests other TT BV, (setWar
[10] 11,100.0,TRUE,40.1,TRUE,FALSE,FALSE,TRUE,FALSE,TRUE,tests missing BV from
[11] 12,199.9,TRUE,40.1,FALSE,TRUE,FALSE,FALSE,FALSE,TRUE,tests missing BV from
[12] 13,0.0,TRUE,65.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,Extreme range distance,
[13] 14,1000.0,TRUE,65.0,FALSE,FALSE,TRUE,FALSE,FALSE,TRUE,Extreme range distan
[14] 15,50.0,TRUE,0.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,Extreme range speed, (se
[15] 16,50.0,TRUE,100.0,TRUE,FALSE,FALSE,FALSE,TRUE,FALSE,Extreme range speed,
Failure Trace
Problem3Class.java Problem3ClassTest.java Problem1ClassTest.java Problem2ClassTest.java
public void setYellowLight(boolean yellowLight) {
this.yellowLight = yellowLight;
}
public boolean isGreenLight() {
return greenLight;
}
public void setGreenLight(boolean greenLight) {
this.greenLight = greenLight;
}
public boolean isCaution() {
return caution;
}
public void setCaution(boolean caution) {
this.caution = caution;
}
public boolean isWarning() {
return warning;
}
public void setWarning(boolean warning) {
this.warning = warning;
}
public boolean isCruiseEngaged() {
return cruiseEngaged;
}
public void setCruiseEngaged(boolean cruiseEngaged) {
this.cruiseEngaged = cruiseEngaged;
}
}
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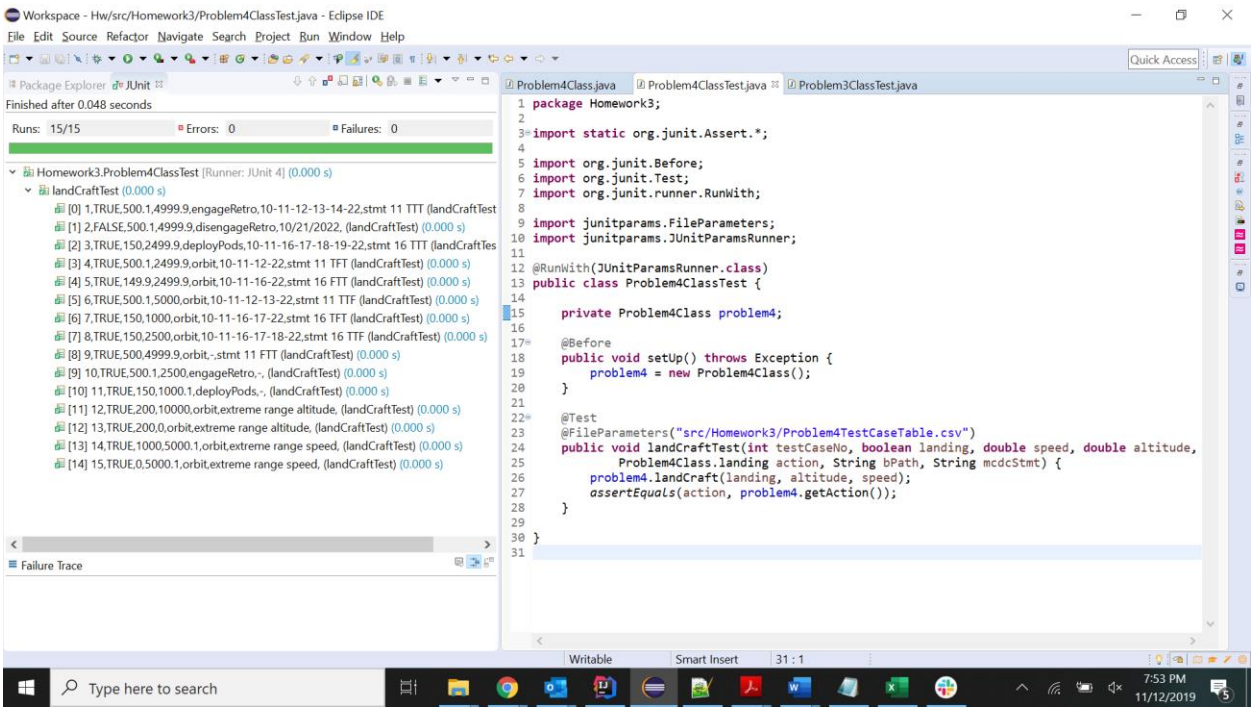
Problem 4

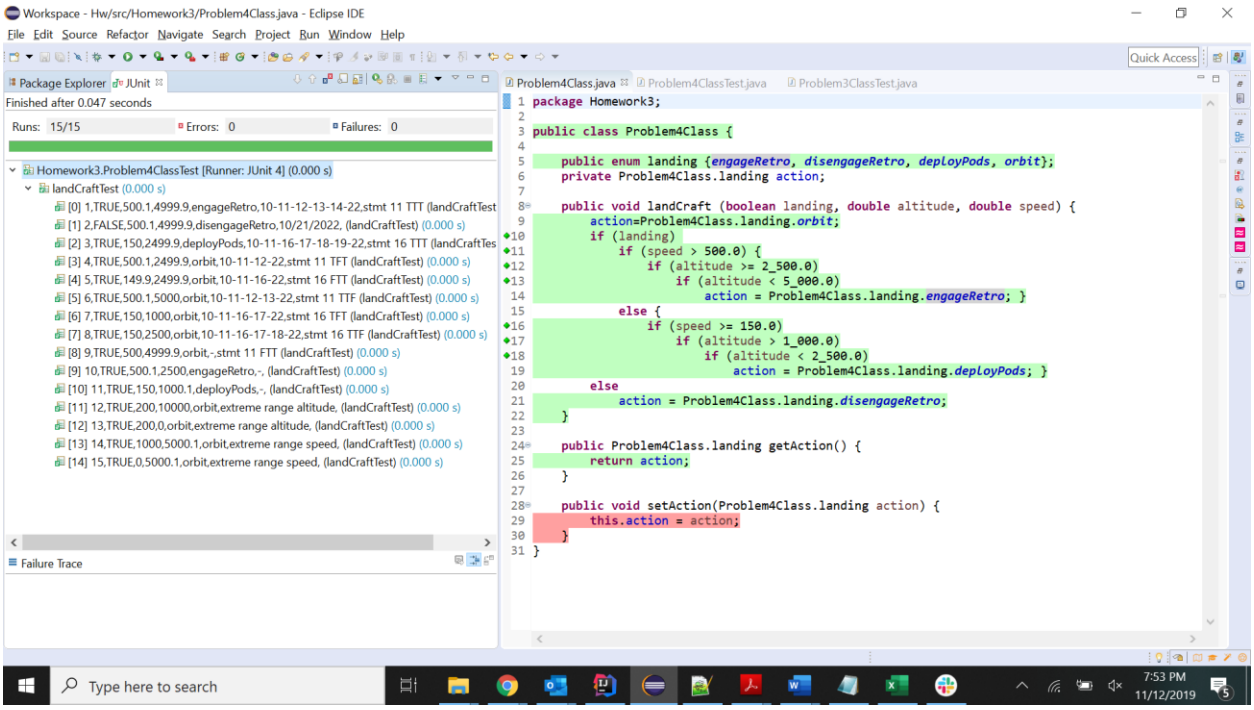
1.Test Case Table:

Test Case Number	Inputs			Exp Out	Basis Path	MCDC
	landin	speed (mpl	altitude (fi	return		
1	TRUE	500.1	4,999.9	engageRetro	10-11-12-13-14-22	stmt 11 TTT
2	FALSE	500.1	4,999.9	disengageRetro	10-21-22	
3	TRUE	150.0	2,499.9	deployPods	10-11-16-17-18-19-22	stmt 16 TTT
4	TRUE	500.1	2,499.9	orbit	10-11-12-22	stmt 11 TFT
5	TRUE	149.9	2,499.9	orbit	10-11-16-22	stmt 16 FTT
6	TRUE	500.1	5,000.0	orbit	10-11-12-13-22	stmt 11 TTF
7	TRUE	150.0	1,000.0	orbit	10-11-16-17-22	stmt 16 TFT
8	TRUE	150.0	2,500.0	orbit	10-11-16-17-18-22	stmt 16 TTF
9	TRUE	500.0	4,999.9	orbit	-	stmt 11 FTT
10	TRUE	500.1	2,500.0	engageRetro	-	
11	TRUE	150.0	1,000.1	deployPods	-	
12	TRUE	200.0	10,000.0	orbit	extreme range altitude	
13	TRUE	200.0	0.0	orbit	extreme range altitude	
14	TRUE	1,000.0	5,000.1	orbit	extreme range speed	
15	TRUE	0.0	5,000.1	orbit	extreme range speed	

2.Junit Pass Indicator:



3. JaCoCo Statement Coverage:

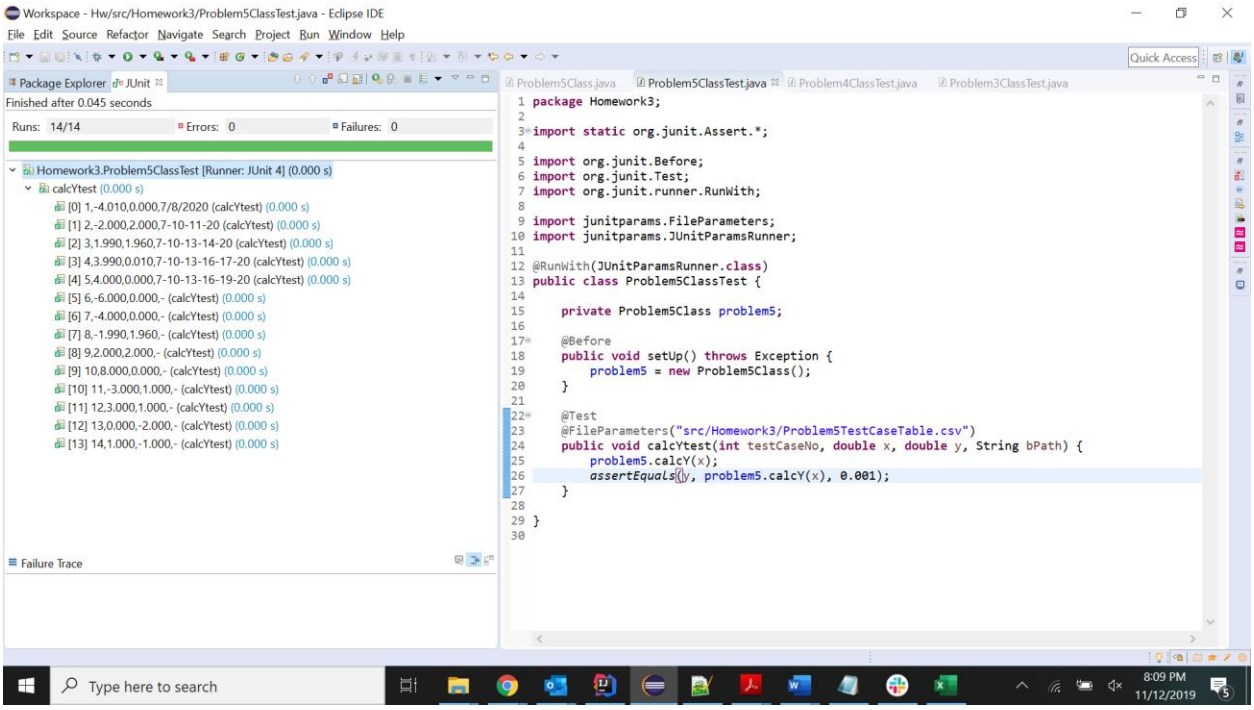


Problem 5

1.Test Case Table:

Test Case Number	Inputs x	Exp Out y	Basis Path Tested
1	-4.01	0.00	7-8-20
2	-2.00	2.00	7-10-11-20
3	1.99	1.96	7-10-13-14-20
4	3.99	0.01	7-10-13-16-17-20
5	4.00	0.00	7-10-13-16-19-20
6	-6.00	0.00	-
7	-4.00	0.00	-
8	-1.99	1.96	-
9	2.00	2.00	-
10	8.00	0.00	-
11	-3.00	1.00	-
12	3.00	1.00	-
13	0.00	-2.00	-
14	1.00	-1.00	-

2.Junit Pass Indicator:



3. JaCoCo Statement Coverage: