

Groupwork 2

Please design tests to satisfy PC (predicate coverage), CC (clause coverage), and CACC (correlated active clause coverage) for Thermostat class and your proposed project (if TDD with no implementation, design tests on the requirements or specifications)

1. Complete and run the tests to satisfy PC for the Thermostat class and your project.

- Thermostat

Predicate	curTemp < dTemp - thresholdDiff	override	curTemp < overTemp - thresholdDiff	timeSinceLastRun > minLag
	A	B	C	D
True	T	T	T	T
	curTemp = 20 dTemp = 30 thresholdDiff = 5	override = True	curTemp = 20 overTemp = 30 thresholdDiff = 5	timeSinceLastRun = 20 minLag = 10
False	F	T	F	F
	curTemp = 40 dTemp = 30 thresholdDiff = 5	override = True	curTemp = 40 overTemp = 30 thresholdDiff = 5	timeSinceLastRun = 5 minLag = 10

Predicate True:

curTemp = 20
dTemp = 30
thresholdDiff = 5
override = True
overTemp = 30
timeSinceLastRun = 20
minLag = 10

Predicate False:

curTemp = 40
dTemp = 35
thresholdDiff = 5
override = True
overTemp = 40
timeSinceLastRun = 5
minLag = 10

- Calc() :

CheckKeywords(sLine.c_str(), parser) 。檢查輸入是否為特殊指令ex:quit。

IsLine.length() 。檢查輸入不為空

if (nNum > 1) 。回傳結果多於1個

CheckKeywords && (!sLine.length() && nNum > 1))

Predic ate	CheckKeywords(sL ine.c_str(), parser)	!sLine.length()	nNum > 1
	A	B	D
True	T	T	T
	sLine="quit,quit"	sLine=" quit,quit"	nNum ==2
False	F	F	F
	sLine=""	sLine=""	nNum ==0

Predicate True:

sLine="quit, list var"

nNum ==2

Predicate False:

sLine=""

nNum ==0

2. Complete and run the tests to satisfy CC for the Thermostat class and your project.

● Thermostat

Predicate	curTemp < dTemp - thresholdDiff	override	curTemp < overTemp - thresholdDiff	timeSinceLastRun > minLag
	A	B	C	D
Case1	T	F	T	F
	curTemp = 20 dTemp = 30 thresholdDiff = 5	override = False	curTemp = 20 overTemp = 30 thresholdDiff = 5	timeSinceLastRun = 5 minLag = 10
Case2	F	T	F	T
	curTemp = 40 dTemp = 30 thresholdDiff = 5	override = True	curTemp = 40 overTemp = 30 thresholdDiff = 5	timeSinceLastRun = 20 minLag = 10

Case1:

curTemp = 20

dTemp = 30

thresholdDiff = 5

override = False

overTemp = 30

timeSinceLastRun = 5

minLag = 10

Case2:

curTemp = 40
 dTemp = 30
 thresholdDiff = 5
 override = True
 overTemp = 40
 timeSinceLastRun = 20
 minLag = 10

● Calc() :

Predicate	CheckKeywords(sLine.c_str(), parser)	!sLine.length()	nNum > 1
	A	B	D
True	T	T	T
	sLine="1+1,quit"	sLine=" 1+1,quit"	nNum ==2
False	F	F	F
	sLine=""	sLine=""	nNum ==0

Case1:

sLine=" 1+1,quit"
 nNum ==2

Case2:

sLine=""
 nNum ==0

Complete and run the tests to satisfy CACC for the Thermostat class and your project.

● Thermostat

Predicate	curTemp < dTemp - thresholdDiff	override	curTemp < overTemp - thresholdDiff	timeSinceLastRun > minLag
	A	B	C	D
Pa	T	T	F	T
	T	F	T	T
	T	F	F	T
	F	F	T	T
	F	T	F	T
	F	F	F	T

Pb	F	T	T	T
	F	F	T	T
Pc	F	T	T	T
	F	T	F	T
Pd	T	T	T	T
	T	T	F	T
	T	F	T	T
	T	F	F	T
	F	T	T	T
	T	T	T	F
	T	T	F	F
	T	F	T	F
	T	F	F	F
	F	T	T	F

選擇上述紅線的集合，2重覆，共6筆測資。

Pa	T	T	F	T
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curTemp = 20

dTemp = 30

thresholdDiff = 5

override = True

overTemp = 40

timeSinceLastRun = 20

minLag = 10

Pa	F	T	F	T
----	---	---	---	---

curTemp = 40

dTemp = 30

thresholdDiff = 5

override = True

overTemp = 40

timeSinceLastRun = 20

minLag = 10

Pb	F	T	T	T
----	---	---	---	---

curTemp = 40

dTemp = 30

thresholdDiff = 5

override = True
overTemp = 20
timeSinceLastRun = 20
minLag = 10

Pb	F	F	T	T
----	---	---	---	---

curTemp = 40
dTemp = 30
thresholdDiff = 5
override = False
overTemp = 20
timeSinceLastRun = 20
minLag = 10

Pc	F	T	T	T
----	---	---	---	---

curTemp = 40
dTemp = 30
thresholdDiff = 5
override = True
overTemp = 20
timeSinceLastRun = 20
minLag = 10

Pc	F	T	T	T
----	---	---	---	---

curTemp = 40
dTemp = 30
thresholdDiff = 5
override = True
overTemp = 20
timeSinceLastRun = 20
minLag = 10

Pd	T	T	T	T
----	---	---	---	---

curTemp = 20
dTemp = 30
thresholdDiff = 5
override = True
overTemp = 20
timeSinceLastRun = 20
minLag = 10

Pd	T	T	T	F
----	---	---	---	---

curTemp = 20
 dTemp = 30
 thresholdDiff = 5
 override = True
 overTemp = 20
 timeSinceLastRun = 5
 minLag = 10

● muParser.cpp

CheckKeywords && (!sLine.length() && nNum > 1)

	CheckKeywords(sLine.c_str(), parser)	!sLine.length()	nNum > 1
	A	B	C
Pa	T	T	T
	F	T	T
Pb	T	T	T
	T	F	T
Pc	T	T	T
	T	T	F

(T, T, T)皆重覆。共 4 筆測資。

Pa,Pb,Pc	T	T	T
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sLine=""quit,list var"

nNum=2

Pa	F	T	T
----	---	---	---

sLine=""1+2,2+3"

nNum=2

Pb	T	F	T
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sLine=""\nquit"

sLine.length()=0

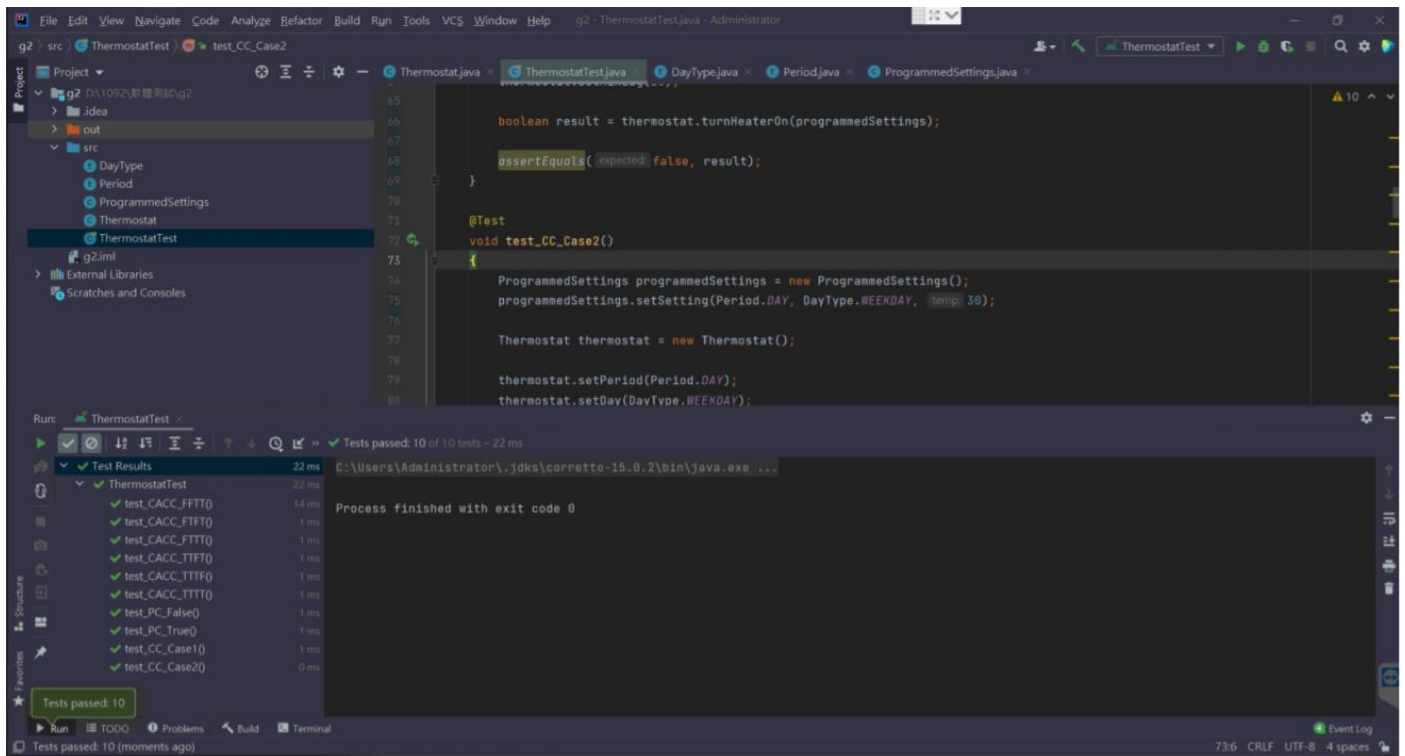
nNum=1

Pc	T	T	F
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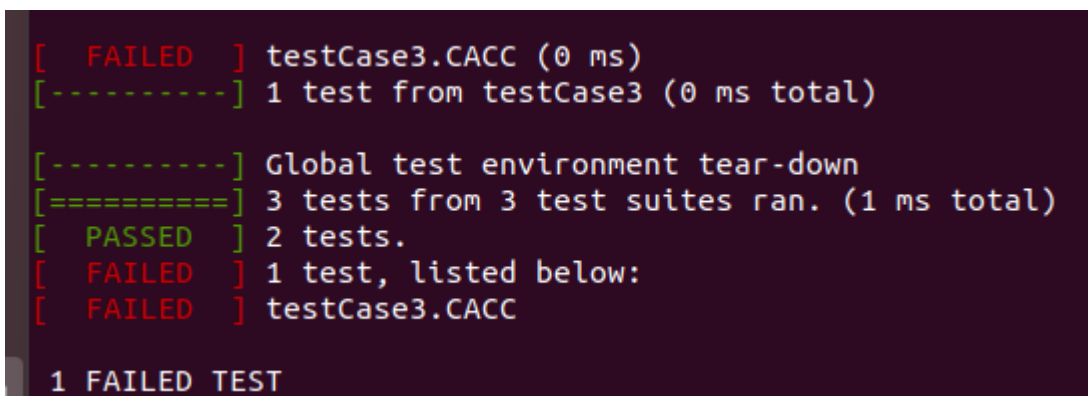
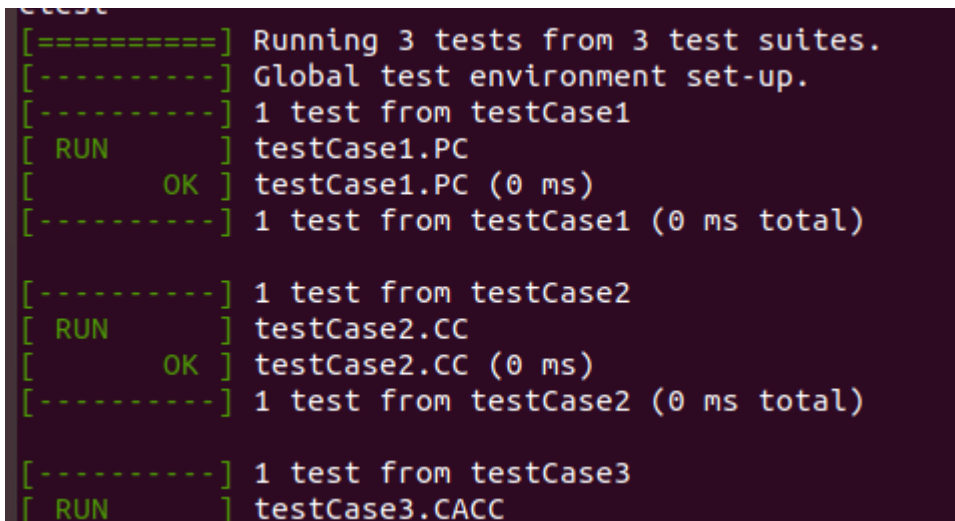
sLine=""1+2"

nNum=1

測試結果：ThermostatTest.java



exampletest.cpp



測試結果 CACC Failed