**Groupwork 2**

Please design tests to satisfy PC (predicate coverage), CC(clause coverage), and CACC(correlated active clause coverage) for Themostat 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

* muParser.cpp

|  |  |  |  |
| --- | --- | --- | --- |
| Predicate | iEnd == (stringstream\_ type::pos\_type) - 1 | mu::TypeInfo<mu::value\_ type>::IsInteger() | fEpsilon == 0 |
|  | A | B | C |
| True | T | T | T |
|  | iEnd = 2  stringstream\_type::pos\_type = 1 | mu::TypeInfo<mu::value\_ type>::IsInteger() = True | fEpsilon = 0 |
| False | F | F | F |
|  | iEnd = 3  stringstream\_type::pos\_type = 1 | mu::TypeInfo<mu::value\_ type>::IsInteger() = False | fEpsilon = 1 |

Predicate True:

iEnd = 2

stringstream\_type::pos\_type = 1

mu::TypeInfo<mu::value\_ type>::IsInteger() = True

fEpsilon = 0

Predicate False:

iEnd = 3

stringstream\_type::pos\_type = 1

mu::TypeInfo<mu::value\_ type>::IsInteger() = False

fEpsilon = 1

1. 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

* muParser.cpp

|  |  |  |  |
| --- | --- | --- | --- |
| Predicate | iEnd == (stringstream\_ type::pos\_type) - 1 | mu::TypeInfo<mu::value\_ type>::IsInteger() | fEpsilon == 0 |
|  | A | B | C |
| True | T | F | T |
|  | iEnd = 2  stringstream\_type::pos\_type = 1 | mu::TypeInfo<mu::value\_ type>::IsInteger() = False | fEpsilon = 0 |
| False | F | T | F |
|  | iEnd = 3  stringstream\_type::pos\_type = 1 | mu::TypeInfo<mu::value\_ type>::IsInteger() = True | fEpsilon = 1 |

Case1:

iEnd = 2

stringstream\_type::pos\_type = 1

mu::TypeInfo<mu::value\_ type>::IsInteger() = False

fEpsilon = 0

Case2:

iEnd = 3

stringstream\_type::pos\_type = 1

mu::TypeInfo<mu::value\_ type>::IsInteger() = True

fEpsilon = 1

1. 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 |

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