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# Black Box

## Compute Calories

CRITERIA

weightProteins

weightFats

weightCarbohidrates

PREDICATES

weightProteins sign <0,>0

weightFats sign <0,>0

weightCarbohidrates sign <0,>0

BOUNDARIES

weightProteins

[minint,-1] [0,maxint]

weightFats

[minint,-1] [0,maxint]

weightCarbohidrates

[minint,-1] [0,maxint]

EQUIVALENCE CLASSES AND TESTING

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| weightProteins | weightFats | weightCarbohidrates | Valid | Test Cases |
| [minint,-1] | \* | \* | I | T1(-8,…,…)->Error  TB(-1,..,…)->Error |
| \* | [minint,-1] | \* | I | T2(…,-8,…)->Error  TB(…,-1,…)->Error |
| \* | \* | [minint,-1] | I | T3(…,…,-8)->Error  TB(…,..,-1)->Error |
| [0,maxint] | [0,maxint] | [0,maxint] | V | T4(0,0,0)->0  TB for the others |
| [0,maxint] | [0,maxint] | [0,maxint] | V | T5(4,2,5)->54 |
| [0,maxint] | [0,maxint] | [0,maxint] | V | T6(0,2,5)->38 |
| [0,maxint] | [0,maxint] | [0,maxint] | V | T7(4,0,5)->36 |
| [0,maxint] | [0,maxint] | [0,maxint] | V | T8(4,2,0)->34 |

## Compute Fee

CRITERIA

Duration

Minrate

Minrate2

PREDICATES

Duration sign

Minrate sign

Minrate2 sign

BOUNDARIES

Duration

[minint,-1] [0,30] [31,90] [91,maxint]

Minrate

[minint,-1] [0,maxint]

Minrate2

[minint,-1] [0,maxint]

EQUIVALENCE CLASSES AND TEST

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Duration | Minrate | Minrate2 | Valid | Test Cases |
| [minint,-1] | \* | \* | I | T1(-8,…,…)->Error  TB(-1,…,…)->Error |
| \* | [minint,-1] | \* | I | T2(…,-8,…)->Error  TB(…,-1,…)->Error |
| \* | \* | [minint,-1] | I | T3(…,…,-8)->Error  TB(…,…,-1)->Error |
| [0,30] | [0,maxint] | [0,maxint] | V | T4(20,1,5)->0  TB(30,0,0)->0 |
| [31,90] | [0,maxint] | [0,maxint] | V | T5(35,10,20)->50  TB(90,10,20)->600 |
| [91,maxint] | [0,maxint] | [0,maxint] | V | T6(95,10,20)->700  TB(91,10,20)->620 |

# White Box

## While Loop

|  |  |  |  |
| --- | --- | --- | --- |
| Coverage | N of Test to obtain 100% coverage | Coverage Obtained with test case defined | Test Cases |
| Node | 2 | 100% | T1-T2 |
| Edge Coverage | 2 | 100% | T1-T2 |
| Multiple Condition Coverage | 4 | 100% | TT T1  FF T3  TF T2  FT T4 |
| Loop Coverage | 3 | 100% | T1 enter one  T2 try no enter  T5 enter many |
| Path Coverage | 2\*1\*2=4, so it is feasible | 100% | T1-T2-T4 |

T1(-1,-1,-6) T2(1,1,1) T3(2,1,3) T4(2,1,0) T5(-5,-5,-5)

## For Loop

|  |  |  |  |
| --- | --- | --- | --- |
| Coverage Type | N test to obtain 100% coverage | Coverage obtained with test cases defined | Test Cases |
| Node | 2 | 100% | T1-T2 |
| Edge | 3 | 100% | T1-T2-T3 |
| Multiple Condition line 7 | 4 | 100% | TT T1  TF T4  FT T2  FF T3 |
| Loop line 6 | 3 | 100% | Try no enter T5  Enter one T6  Enter many T2 |
| Loop line 9 | 3 | 100% | Try no enter T6  Enter one T7  Enter many T2 |
| Path | x\*x | Not feasible | - |

T1(-1,5) T2(5,5) T3(40,30) T4(30,40) T5(0,0) T6(1,0) T7(2,0)