

**WhiteBox Testing**

Software Testing

**FLOW CHART**

**MCDC**

**PATH PREDICTION**

**TEST ORACLE**

**FLOW CHART:**

function(num1,num2,num3)

u

1

num1>num2 && num1>num3 && num1!=0

2

3

True

Num1 greater

False

5

num2>num1 && num2>num3 && num2!=num1

4

True

Num2 greater

False

7

6

num3>num1 && num1<num2 && num3>num2 && num3!=0

True

Num3 greater

False

9

8

num2==num1 && num2==num3 && num1==num3

True

All number equal

10

False

Number format error

**MCDC:**

1. **DECISION STATEMENT**

**FOR:** num1>num2 && num1>num3 && num1!=0

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | **num1>num2 && num1>num3 && num1!=0** |
| T | T | T | T |
| T | T | F | F |
| T | F | T | F |
| T | F | F | F |
| F | T | T | F |
| F | T | F | F |
| F | F | T | F |
| F | F | F | F |

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | **num1>num2 && num1>num3 && num1!=0** |
| 15 | 7 | 9 | T |
| 34 | 6 | 71 | F |
| 6 | 23 | 3 | F |
| 753 | 511 | 3 | F |
| foo | 22 | 2 | F |
| 444 | 32 | 5 | F |
| 90 | 444 | 4 | F |
| 0 | 0 | 0 | F |

* 1. **IMPLEMENTATION**

**FOR:** num1>num2 && num1>num3 && num1!=0

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | num2>num1 && num2>num3 && num2!=num1 |
| T | T | T | T |
| T | T | F | F |
| T | F | T | F |
| T | F | F | F |
| F | T | T | F |
| F | T | F | F |
| F | F | T | F |
| F | F | F | F |

1. **DECISION STATEMENT**

**FOR:** num2>num1 && num2>num3 && num2!=num1

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | num2>num1 && num2>num3 && num2!=num1 |
| 1 | 7 | 6 | T |
| 4 | 6 | 7 | F |
| 1 | foo | 0 | F |
| 753 | 511 | 3 | F |
| 541 | 974 | 222 | F |
| 444 | 32 | 5 | F |
| 90 | 444 | 4 | F |
| 0 | 0 | 0 | F |

* 1. **IMPLEMENTATION**

**FOR:** num2>num1 && num2>num3 && num2!=num1

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | num3>num1 && num3>num2 && num3!=0 |
| T | T | T | T |
| T | T | F | F |
| T | F | T | F |
| T | F | F | F |
| F | T | T | F |
| F | T | F | F |
| F | F | T | F |
| F | F | F | F |

1. **DECISION STATEMENT**

**FOR:** num3>num1 && num3>num2 && num3!=0

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | num3>num1 && num3>num2 && num3!=0 |
| 1 | 5 | 6 | T |
| 8 | 7 | Foo | F |
| 10 | 9 | 8 | F |
| 753 | 511 | 3 | F |
| 10 | 5 | goo | F |
| 444 | 32 | 5 | F |
| 90 | 444 | 4 | F |
| 0 | 0 | 0 | F |

* 1. **IMPLEMENTATION**

**FOR:** num3>num1 && num3>num2 && num3!=0

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | num2==num1 && num2==num3 && num1==num3 |
| T | T | T | T |
| T | T | F | F |
| T | F | T | F |
| T | F | F | F |
| F | T | T | F |
| F | T | F | F |
| F | F | T | F |
| F | F | F | F |

1. **DECISION STATEMENT**

**FOR:** num2==num1 && num2==num3 && num1==num3

|  |  |  |  |
| --- | --- | --- | --- |
| **INPUT** | | | **EXPECTED OUTPUT** |
| **num1** | **num2** | **num3** | num2==num1 && num2==num3 && num1==num3 |
| 1 | 1 | 1 | T |
| 8 | 7 | Foo | F |
| 10 | 9 | 8 | F |
| 753 | 511 | 3 | F |
| 10 | 5 | goo | F |
| 444 | 32 | 5 | F |
| 90 | 444 | 4 | F |
| 0 | 0 | 0 | F |

* 1. **IMPLEMENTATION**

**FOR:** num3>num1 && num3>num2 && num3!=0

**PATH PREDICTION**

* **FOR: num1>num2 && num1>num3 && num1!=0**

Path: 1 -> 2 -> 3

* **FOR: num2>num1 && num2>num3 && num2!=num1**

Path: 1 -> 2 -> 4 -> 5

* **FOR: num3>num1 && num3>num2 && num3!=0**

Path: 1 -> 2 -> 4 ->6 -> 7

* **FOR: num2==num1 && num2==num3 && num1==num3**

Path: 1 -> 2 -> 4 -> 6 -> 8 -> 9

* **FOR: IF NO CONDITION IS TRUE**

Path: 1 -> 2 -> 4 -> 6 -> 8 -> 10

**TEST ORACLE**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **INPUT**  **Num1 Num2 Num3** | | | **PATH** | **EXPECTED OUTPUT** | **ACTUAL OUTPUT** |
| 6 | 3 | 1 | 1 -> 2 -> 3 | 6 is greater | 6 is greater |
| 1 | 6 | 3 | 1 -> 2 -> 4 -> 5 | 6 is greater | 6 is greater |
| 3 | 1 | 6 | 1->2->4->6->7 | 6 is greater | 6 is greater |
| 1 | 1 | 1 | 1 -> 2 -> 4 -> 6 -> 8 -> 9 | All are same | All are same |
| foo | 4 | 6 | 1 -> 2 -> 4 -> 6 -> 8 -> 10 | Number format error | Number format error |