开始

x>=80 and y>=80

x+y>=140 and (x>=90 or y>=90)

T=2

T=3

T=1

结束

F

T

T

F

o

a

b

c

d

e

现有一程序结构如上图所示，请使用语句覆盖，判定覆盖，条件覆盖，判定/条件覆盖，条件组合覆盖方法对其设计测试用例。

D1：x>=80 and y>=80 D2：x+y>=140 and (x>=90 or y>=90)

C1：x>=80

C2：y>=80

C3：x+y>=140

C4：x>=90

C5：y>=90

1. 语句覆盖

可以直接通过流程图分析得出三个测试用例：

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 输入数据 | | 预期输出 | 覆盖路径 | 实际输出 | 测试结果 |
| x | y |  |
| 1 | 80 | 80 | T=1 | oae |  |  |
| 2 | 79 | 90 | T=2 | obce |  |  |
| 3 | 60 | 50 | T=3 | obde |  |  |

1. 判定覆盖

|  |  |
| --- | --- |
| 判定 | 具体情况 |
| D1 | x>=80 and y>=80 |
| D2 | x+y>=140 and (x>=90 or y>=90) |
| ！D1 | X<80 or y<80 |
| ！D2 | X+y <140 or x<90 and y<90 |

可以直接使用语句覆盖的测试用例，符合判定覆盖条件。

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 输入数据 | | 预期输出 | 覆盖路径 | 实际输出 | 测试结果 |
| x | y |  |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |

1. 条件覆盖

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 条件 | T | 表示 | F | 表示 |
| C1：x>=80 | x>=80 | T1 | x<80 | F1 |
| C2：y>=80 | y>=80 | T2 | y<80 | F2 |
| C3：x+y>=140 | x+y>=140 | T3 | x+y<140 | F3 |
| C4：x>=90 | x>=90 | T4 | x<90 | F4 |
| C5：y>=90 | y>=90 | T5 | y<90 | F5 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 输入数据 | | 预期输出 | 覆盖路径 | 覆盖条件 | 测试结果 |
| x | y |  |
| 1 | 100 | 50 | T=2 |  | T1，F2，T3，T4，F5 |  |
| 2 | 30 | 100 | T=3 |  | F1，T2，F3，F4，T5 |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. 判定\条件覆盖

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 输入数据 | | 预期输出 | 覆盖路径 | 覆盖条件 | 测试结果 |
| x | y |  |
| 1 | 100 | 50 | T=2 |  | T1，F2，T3，T4，F5 |  |
| 2 | 30 | 100 | T=3 |  | F1，T2，F3，F4，T5 |  |
| 3 | 80 | 80 | T=1 |  |  |  |

1. 条件组合覆盖

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 条件 | 可能组合 | 编号 |  |  |
| C1：x>=80  C2：y>=80 | T1 T2 | 1 |  |  |
| T1 F2 | 2 |  |  |
| F1 T2 | 3 |  |  |
| F1 F2 | 4 |  |  |
| C3：x+y>=140  C4：x>=90  C5：y>=90 | T3 T4 T5 | 5 |  |  |
| T3 T4 F5 | 6 |  |  |
| T3 F4 T5 | 7 |  |  |
| T3 F4 F5 | 8 |  |  |
| F3 T4 F5 | 9 |  |  |
| F3 F4 T5 | 10 |  |  |
| F3 F4 F5 | 11 |  |  |
| F3 T4 T5 | 12 |  |  |

1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 序号 | 输入数据 | | 预期输出 | 覆盖路径 | 覆盖组合 | 测试结果 |
| x | y |  |
| 1 | 90 | 90 | T=1 | oae | 1 |  |
| 2 | 100 | 70 | T=2 | obc | 2，6 |  |
| 3 | 70 | 100 | T=2 | obc | 3，7 |  |
| 4 | 70 | 70 | T=3 | obde | 4，8 |  |

1. 修正判定/条件覆盖

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 条件 | 可能组合 | 编号 |  |  |
| C1：x>=80  C2：y>=80 | T1 T2 | 1 |  |  |
| T1 F2 | 2 |  |  |
| F1 T2 | 3 |  |  |
| C3：x+y>=140  C4：x>=90  C5：y>=90 | T3 T4 F5 | 6 |  |  |
| T3 F4 T5 | 7 |  |  |
| T3 F4 F5 | 8 |  |  |
| F3 T4 F5 | 9 |  |  |