Capital University of Science and Technology

Software Testing

Section 2

Data:6/9/2020

Assignment 4 & 5

Submitted to:

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Code Description

This code is a log checker where it takes time (hour, minute, second) and the KDA (kill, death, assist) of the player in order to find that if the player has reached Diamond Rank or not. As the rank of the game is updated after the time 1200 hrs. If the player rank is updated, the log will then return a message saying that the player has successfully reached Diamond Rank.

To achieve Diamond Rank, the kills should be in between 15 to 50 where 15 and 50 are included, deaths should be equal or less than 6 and assist should be in between 8 to 30 where 8 and 30 is included. The time is in the 24-hour format, where the rank updation is done after 1200 hr.

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Following highlighted testcases are enough for modified condition decision coverage rest are redundant.

1. Decision Statement

(kill >= 15 && death <= 6 && assist >= 8)

Input			**Output**
Kill	**Death**	**Assist**	**(kill >= 15 && death <= 6 && assist >= 8)**
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

1.1 Implementation

(kill >= 15 && death <= 6 && assist >= 8)

Input			**Output**
Kill	**Death**	**Assist**	**(kill >= 15 && death <= 6 && assist >= 8)**
16	3	11	T
18	5	5	F
20	8	10	F
22	9	3	F
10	2	13	F
9	3	2	F
11	10	18	F
12	11	1	F

2. Decision Statement

(hour>=12 && minute>0 && second >=1)

Input			Output
Hour	**Minute**	**Second**	**(hour>=12 && minute>0 && second >=1)**
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

2.2 Implementation

(hour>=12 && minute>0 && second >=1)

Input			Output
Hour	**Minute**	**Second**	**(hour>=12 && minute>0 && second >=1)**
13	25	50	T
15	10	0	F
18	0	20	F
20	0	0	F
6	35	15	F
2	58	0	F
1	0	55	F
5	0	0	F

3. Decision Statement

(flag1==1 && flag2==1)

Input		Output
Flag1	**Flag2**	**(flag1==1 && flag2==1)**
T	T	T
T	F	F
F	T	F
F	F	F

3.1 Implementation

(flag1==1 && flag2==1)

Input		Output
Flag1	**Flag2**	**(flag1==1 && flag2==1)**
1	1	Success
1	0	Unsuccessful
0	1	Unsuccessful
0	0	Unsuccessful

Control Flow Graph

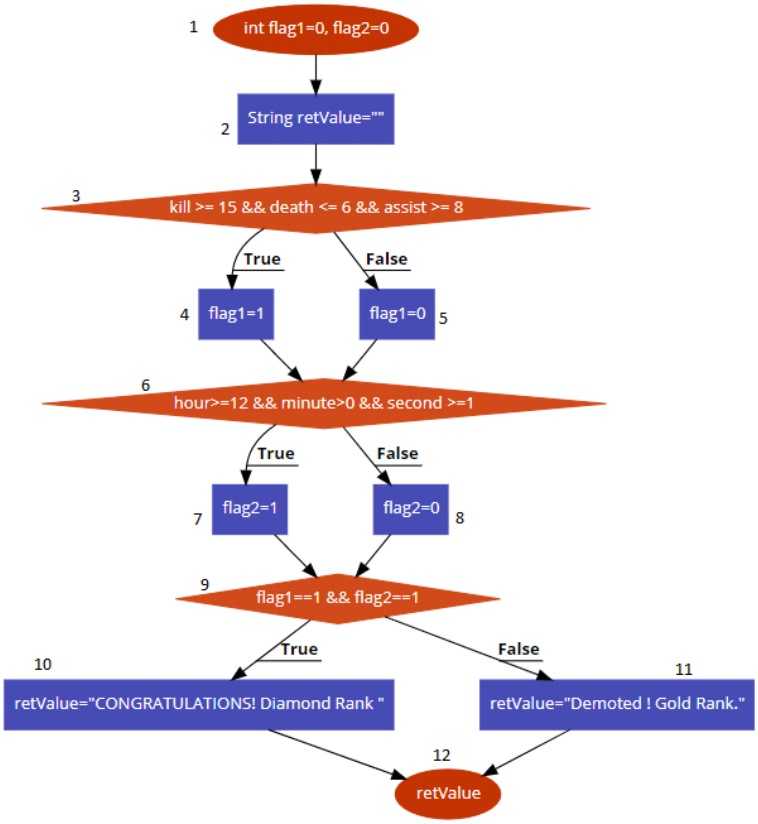

Figure 1 Control Flow Graph of Function logChecker

Path Prediction Expression

Prediction 1

Path

1 → 2 → 3 → 4 → 6 → 7 → 9 → 10 → 12

Expression

{kill >= 15 && death <= 6 && assist >= 8, hour>=12 && minute>0 && second >=1, flag1==1 && flag2==1}

Prediction 2

Path

1 → 2 → 3 → 5 → 6 → 7 → 9 → 11 → 12

Expression

{kill <= 15 && death <= 6 && assist >= 8, hour>=12 && minute>0 && second >=1, flag1 !=1 && flag2==1}

Prediction 3

Path

1 → 2 → 3 → 4 → 6 → 8 → 9 → 11 → 12

Expression

{kill >= 15 && death <= 6 && assist >= 8, hour>=12 && minute==0 && second >=1, flag1==1 && flag2 !=1}

Prediction 4

Path

1 → 2 → 3 → 5 → 6 → 8 → 9 → 11 → 12

Expression

{kill <= 15 && death <= 6 && assist >= 8, hour>=12 && minute==0 && second >=1, flag1 !=1 && flag2 !=1}

Test Oracle

Expect Outcome 1: “CONGRATULATIONS! Diamond Rank "
Expect Outcome 2: "Demoted! Gold Rank."

Path	Inputs						Actual Outcome	Expected Outcome
	Kill	Death	Assist	Hour	Minutes	Seconds		
1 → 2 → 3 → 4 → 6 → 7 → 9 → 10 → 12	16	3	11	13	25	50	“Congratulations! Diamond Rank”	“Congratulations! Diamond Rank”
1 → 2 → 3 → 5 → 6 → 7 → 9 → 11 → 12	10	2	12	15	20	30	"Demoted! Gold Rank."	"Demoted! Gold Rank."
1 → 2 → 3 → 4 → 6 → 8 → 9 → 11 → 12	18	4	10	14	0	20	"Demoted! Gold Rank."	"Demoted! Gold Rank."
1 → 2 → 3 → 5 → 6 → 8 → 9 → 11 → 12	9	0	10	16	0	30	"Demoted! Gold Rank."	"Demoted! Gold Rank."