Software Testing

UCL Buddy

Assignment 3 | Section 2

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TABLE OF CONTENTS

Case Study

Introduction

UEFA Champions league is football competition where there are many teams that play against each other to win the champions league title. In this competition top 2 to 4 teams from all Europeans football leagues take part and the winner team is called the best team in Europe and is selected for the Club World Cup to get the Club world Cup title and also the winner team is give almost 85m Dollars as reward price followed by 65m Dollars for runner ups.

Brief Description

In this application the player performance is tracked i.e. his goals, assists and matches are counted by the application. Goals assist ratio (G/A) is calculated by the sum of number of goals a player scores and the number of assists he has given in a match where goals are valued twice as assists. Goal range in the champions' league is 0 to 15(including 0 and 15), and number of assists could be from 0 to max 10 in the competition. Also, G/A can't be calculated if the number of matches is 0. G/A can be calculated by adding Goals and assists and dividing the number with the total matches played

Player rating is calculated by using the G/A, if the rating is low, we will write bad season, average season for average rating and great season for high rating

Tracking system is also used to track the progress of the goal keeper and calculate that how much clean sheet a keeper keeps in a number of matches. A clean sheet is kept by a keeper if he doesn't let the opposition team score against him. Also, there can be only one clean sheet per match so the number of matches may be equal to or higher than the clean sheets a keeper kept. If the numbers of clean sheets are higher than matches then the output should be invalid.

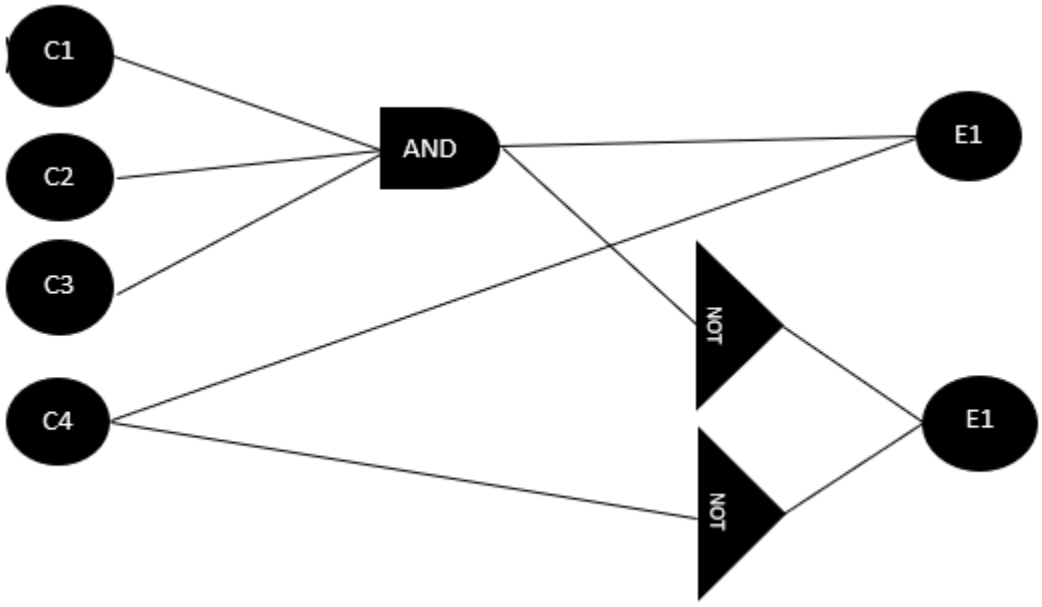
Cause Effect Graphing

Function I

float playerGA (float matches,float goal, float assist)

Causes	Effects
C1: goal>=0 && goal<=15	**E1:** GA is displayed by the system
C2: matches=>0&&matches<=7	**E2:** Invalid
C3: assist>=0&&assist<=10	
C4: matches > 0	

Cause Effect Graph



Decision Table

Action	T1	T2	T3	T4	T5	T6	T7	T8	T9
C1	0	1	0	0	1	0	1	1	1
C2	0	0	1	0	1	1	0	1	1
C3	0	0	0	1	0	1	1	1	1
C4	No value	No value	No value	No value	No value	No value	No value	0	1
E1	0	0	0	0	0	0	0	0	1
E2	1	1	1	1	1	1	1	1	0

Test Cases

Test cases	Causes			Expected Output (Effects)
	Goals	Matches	Assist	
T1	-1	0	11	Invalid
T2	10	8	13	Invalid
T3	-3	3	15	Invalid
T4	-5	10	5	Invalid
T5	5	2	-1	Invalid
T6	20	4	6	Invalid
T7	15	-1	8	Invalid
T8	13	0	7	Invalid
T9	14	5	9	GA

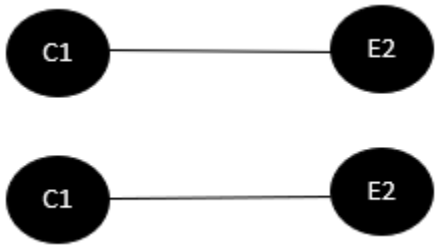
Function II

float GAratio(int GA)

Cause & Effects

Causes	Effects
C1: GA>0 && GA<=40	**E1:** result displayed
C2: GA >= 0 && GA < 40	**E2:** Invalid

Cause Effect Graph



Decision Table

Action	T1	T2
C1	0	1
C2	1	0
E1	0	1
E2	1	0

Test Cases

Test case #	Input (Causes)	Expected Output (Effects)
	GA ratio	
T1	20	result displayed
T2	50	Invalid

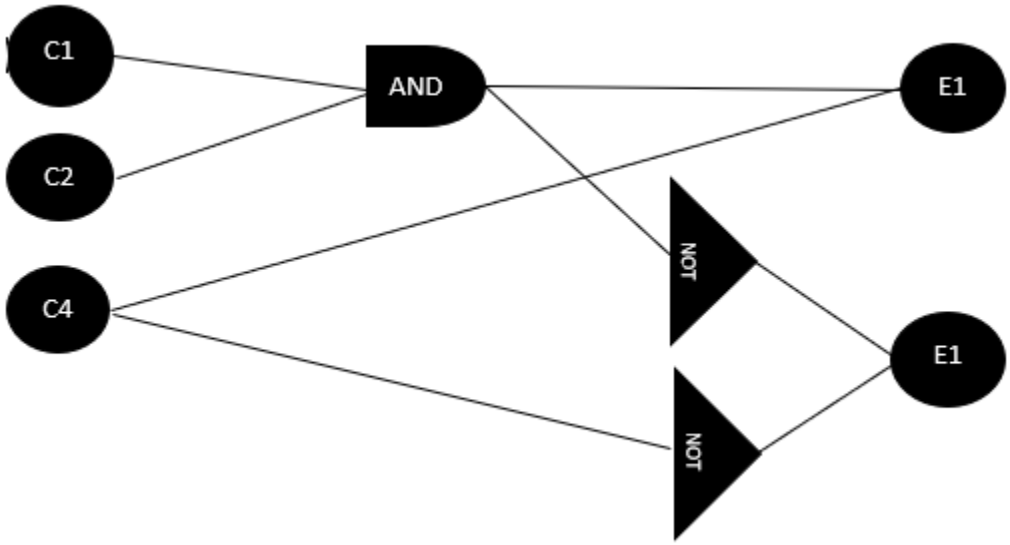
Function III

float cleansheetratio (float matches, float cs)

Cause & Effects

Causes	Effects
C1: matches >= 0 && matches <= 7	**E1:** Clean sheets ratio
C2: CS >= 1 && BD <= 7	**E2:** Invalid
C3: CS < matches	

Cause Effect Graph



Decision Table

Action	T1	T2	T3	T4	T5
C1	0	1	0	1	1
C2	0	0	1	1	1
C3	No value	No value	No value	0	1
E1	0	0	0	0	1
E2	1	1	1	1	0

Test Cases

Test cases	Input (Causes)		Expected Output (Effects)
	Matches	CS	
T1	0	0	Invalid
T2	4	0	Invalid
T3	0	4	Invalid
T4	3	5	Invalid
T5	5	3	result displayed