



ASSIGNMENT-3

HASSAM ULLAH, SOHAIL KHAN



FEBRUARY 11, 2020

Table of Contents

CASE STUDY.....	2
taxValidator(plotsize, taxrate)	2
Requirements.....	2
Causes and Effects	2
landDecider(no. of applications, amount of land planned to buy).....	4
Requirements.....	4
Causes and Effects	4

CASE STUDY

Shalimar Housing Society is located near Faisalabad City. The society covers an area of 220 acres i.e. 35200 marla. 20 acres is commercial area while the rest of 200 acres is housing area. There are 700 20 marla plots, 800 15 marla plots, 300 12 marla plots, 80 10 marla plots, 200 8 marla plots. The tax on buying a plot can range from 120,000 for 8 marla, 150,000 for 10 marla, 190,000 for 12 marla, 240,000 for 15 marla and 270,000 for 20 marla, depending on the size of the plot. The society owners are planning for an extension to the society. There is another 30 acres vacant land beside the society which the society is planning to acquire only if a minimum of 80 and a maximum of 200 applications are received from new buyers. The owners of the vacant land demand a minimum of 18 acres be bought by the society if the society owners wish to buy it.

A person wants to get a plot of 15 marla and wants to build a 2-story house with 4 rooms of equal size on each floor. Maximum height of the house can be 20m and there can be a maximum of 2 floors on the house. Also, the length and width of a single room can be a minimum of 3m and a maximum of 5m. According to society's construction limitations, height of a house cannot be more than 20meter.

Function 2:

taxValidator(plotsize, taxrate)

8 < plotsize < 20

150000 < Taxrate < 270000

Requirements

1. If plot size is greater than 8 AND tax amount is greater150000 than function will return VALID
2. If plot size is less than 8 AND tax rate is greater than 150000 than tax cannot be VALIDATED
3. If plot size is greater8 and tax rate is greater than 270000 than tax cannot be validated.
4. If plot size is less than 8 OR greater than 20 AND tax amount is less than 150000 or greater than 270000 than tax is not validated

Causes and Effects

C1- = PLOTSIZE > 8

C2- = PLOTSIZE < 8

C3- = TAXAMOUNT > 150000

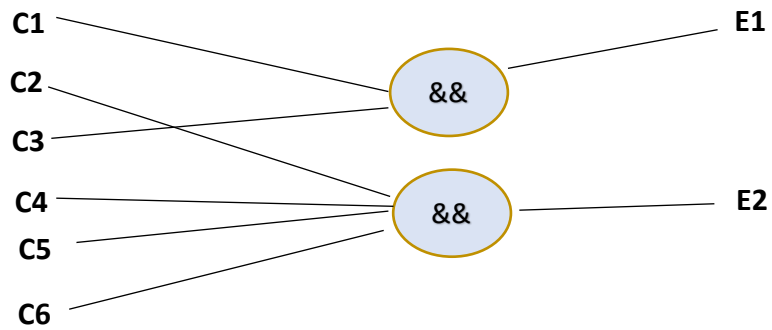
C4- = taxamount > 270000

C5 = PLOTSIZE < 8 && PLOTSIZE > 20

C6 = TAXAMOUNT < 150000 && TAXAMOUNT > 270000

E1- VALID

E2- INVALID



		1	2	3	4
Condition/Cause	C1- PLOTSIZE > 8	1	0	1	0
Condition/Cause	C2- PLOTSIZE < 8	0	1	0	1
Condition/Cause	C3- TAXAMOUNT > 150000	1	1	0	0
Condition/Cause	C4- TAXAMOUNT > 270000	0	0	1	1
Condition/Cause	C5 = PLOTSIZE < 8 && PLOTSIZE > 20	0	0	0	1
Condition/Cause	C6 = TAXAMOUNT < 150000 && TAXAMOUNT > 270000	0	0	0	1
Action/Effort	E1- VALID	1	0	0	0
Action/Effort	E2- INVALID	0	1	1	1

Sr #.	PLOTSIZE	TAXRATE	EXPECTED OUTPUT
1	10	140000	E2
2	12	300000	E2
3	7	260000	E2
4	27	200000	E2
5	6	140000	E2
6	21	280000	E2
7	7	300000	E2

8	30	100000	E2
9	10	170000	E1

Function 3

landDecider(no. of applications, amount of land planned to buy)

18 < amount of land planned to buy < 30

80 < No. of applications < 201

Requirements

1. If LAND AMOUNT is greater than 18 AND APPLICATIONS is greater than 80, function will return BUY.
2. If LAND AMOUNT is less than 18 AND APPLICATIONS is greater than 201 then function will return DON'T BUY.
3. If LAND AMOUNT is greater than 18 and APPLICATIONS is greater than 201 then function will return DON'T BUY
4. If LAND AMOUNT is less than 18 OR greater than 20 AND APPLICATIONS is less than 80 OR greater than 201 function will return DON'T BUY.

Causes and Effects

C1- = LAND AMOUNT > 8

C2- = LAND AMOUNT < 8

C3- = APPLICATIONS > 150000

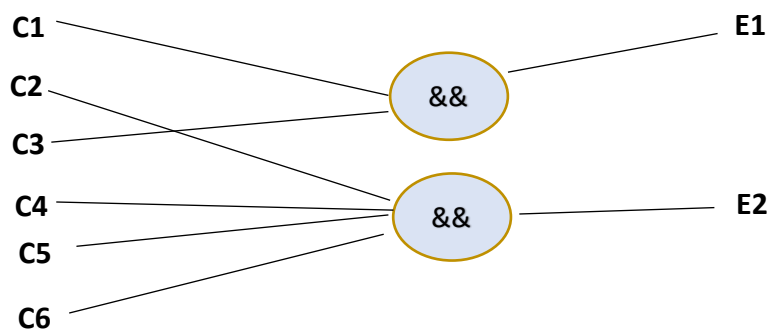
C4- = APPLICATIONS > 270000

C5 = LAND AMOUNT < 8 && LAND AMOUNT > 20

C6 = APPLICATIONS < 150000 && APPLICATIONS > 270000

E1- BUY

E2- DON' BUY



		1	2	3	4
Condition/Cause	C1- LAND AMOUNT > 18	1	0	1	0
Condition/Cause	C2- LAND AMOUNT < 18	0	1	0	1
Condition/Cause	C3- APPLICATIONS >80	1	1	0	0
Condition/Cause	C4- APPLICATIONS > 201	0	0	1	1
Condition/Cause	C5 = LAND AMOUNT < 18 && LAND AMOUNT > 30	0	0	0	1

Condition/Cause	C6 = APPLICATIONS < 80 && APPLICATIONS > 201	0	0	0	1
Action/Effort	E1- VALID	1	0	0	0
Action/Effort	E2- INVALID	0	1	1	1

Sr #.	LANDAMOUNT	APPLICATIONS	EXPECTED OUTPUT
1	19	70	E2
2	20	230	E2
3	10	180	E2
4	35	180	E2
5	12	50	E2
6	40	250	E2
7	11	300	E2
8	45	50	E2
9	20	100	E1

Function 1:

roomVolumeCalc(length, width, height)

Requirements

1. length of the room can no exceed 5 meter and cannot be less than 3m
2. length of the room can no exceed 5 meter and cannot be less than 3m
3. height of a room cannot exceed 10m

Causes and Effects

C1- length < 5

C2- length = 5

C3- length > 5

C4- width < 5

C5- width = 5

C6- width > 5

C7- height < 10

C8- height = 10

C9- height > 10

E1- Measurements are valid

E2- Measurements are invalid