SOFTWARE TESTING

Assignment 3

Section 2

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Submitted To

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Contents

1 Case Study:

1.1 Brief Description

In this project we are calculating the GPA by giving 3 different evaluation criteria's that are midterm marks, assignment marks and finals marks also we have assigned boundaries to marks. For assignments 1-20, for midterms 1-20 and for finals 1-60and assigning them grades. In our project we have 3 functions 1st function marks with 3 parameters. 2nd function grades with 1 parameter. 3rdGPAwith 1 parameter. In marks function 3 parameters midterm marks, assignment marks, and final marks is taking input from test cases and calculating sum of assignment marks, midterm marks and finals marks then saving the sum of three inputs in some variable and then we are passing value of sum in 2nd function which is grade now in our 2nd function with one parameter taking value of sum and assigning them grade by following conditions if sum grater or equals to 90 assign grade A, if sum grater or equals 80 assign grade B, if sum grater or equals to 70 assign grade C, if sum grater or equals to 50 assign grade D, if sum is below 50 then assign grade F. These grades are passing in our 3rd function that is GPA. In 3rd function we assign GPA according to grade.

If grade is equal to A assign GPA equals 4.01, If grade is equal to B assign GPA equals 3.33, If grade is equal to C assign GPA equals 2.33, If grade is equal to D assign GPA equals 1.2 ,grade equals F assign F.

With above description we have generated our test cases with worst BVA and strong robust equivalence class. Mentioned below

2 Feature 1:

```
static public String marks ( int ass, int mid, int finals ) {//numbers input from 100

    int sum=ass + mid +finals;

    String var=grade(sum);

     return gpa (var);
```

In marks function. 3 parameters midterm marks, assignment marks, and final marks is taking input from test cases and calculating sum of assignment marks, midterm marks and finals marks then saving the sum of three inputs in some variable and then we are passing value of sum into next function so there is no causes that make some effect.

3 Feature 2:

static public String grade(int result)

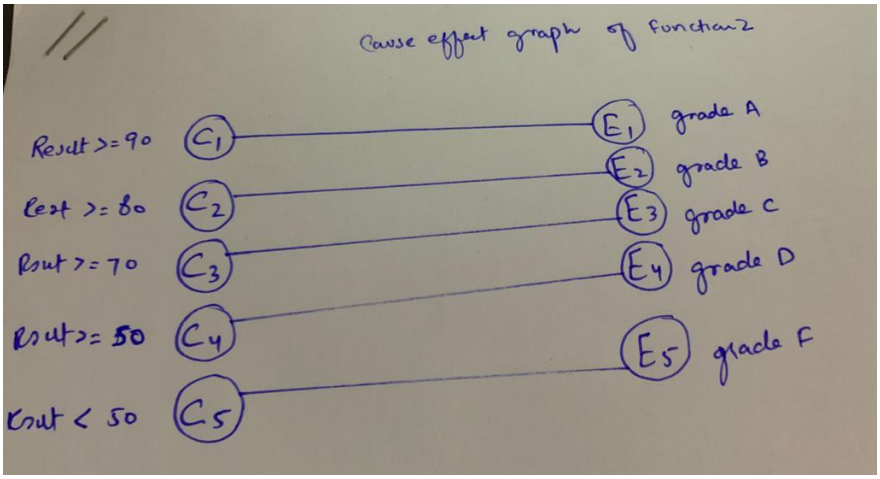
3.1 Cause Effect Identification

- If result(sum)>=90 then, grade will be A.
- If result(sum)>=80 then, grade will be B.
- If result(sum)>=70 then, grade will be C.
- If result(sum)>=50 then, grade will be D.
- If result(sum)<50 then, grade will be F.

3.2 Cause Effect Table

Causes	Effects
C1: (Result sum)>= (90)	E1: A
C2: (Result sum)>= (80)	E2: B
C3: (Result sum)>= (70)	E3: C
C4: (Result sum)>= (50)	E4:D
C5: (Result sum) < (50)	E5:F

3.3 Cause Effect Graph



3.4 Decision Table

ACTION	T1	T2	T3	T4	T5
C1: (Result sum)>= (90)	1	0	0	1	0

C2 (Result sum)>= (80)	0	1	0	0	0
C3 (Result sum)>= (70)	0	0	1	0	0
C4 (Result sum)>= (50)	0	0	0	1	0
C5 (Result sum)< (50)	0	0	0	0	1
E1: A	1	0	0	0	0
E2: B	0	1	0	0	0
E3: C	0	0	1	0	0
E4: D	0	0	0	1	0
E5: F	0	0	0	0	1

3.5 Test Cases

Test	INPUT	Output
1	91	A
2	82	B
3	75	C
4	50	D
5	40	F

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4 Feature 3:

static public String gpa (String a)

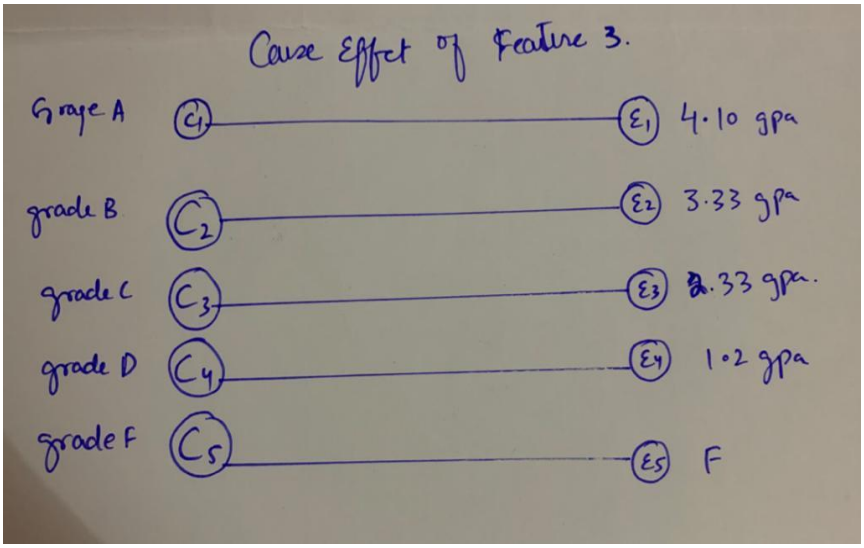
4.1 Cause Effect Identification

- If GRADE=A then, gpa will be 4.10.
- If GRADE=B then, gpa will be 3.33
- If GRADE=C then, gpa will be 2.33.
- If GRADE=D then, gpa will be 1.2.
- If GRADE=F then, gpa will be F.

4.2 Cause Effect Table

Causes	Effects
C1: GRADE=A	E1:4.10
C2: GRADE=B	E2: 3.33
C3: GRADE=C	E3: 2.33
C4: GRADE=D	E4:1.2
C5: GRADE=F	E5:F

4.3 Cause Effect Graph



4.4 Decision Table

ACTION	T1	T2	T3	T4	T5
C1: GRADE=A	1	0	0	1	0
C2: GRADE=B	0	1	0	0	0
C3: GRADE=C	0	0	1	0	0
C4: GRADE=D	0	0	0	1	0
C5: GRADE=F	0	0	0	0	1
E1: 4.10	1	0	0	0	0
E2: 3.33	0	1	0	0	0
E3: 2.33	0	0	1	0	0
E4: 1.2	0	0	0	1	0
E5: F	0	0	0	0	1

4.5 Test Cases

Test	INPUT	OUTPUT
1	A	4.10
2	B	3.33
3	C	2.33
4	D	1.2
5	F	F
