



# 2020

## SOFTWARE TESTING

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# ASSIGNMENT # 03



**Capital University of Science and Technology**

**Islamabad**

**Software Testing**

**Assignment # 3**

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# **Convocation Management System**

On successful completion of a degree program, University issues a “Degree” and honors in a university convocation ceremony. This ceremony held annually for fresh graduates. Different distinguished guests address the students and advise them about their practical professional life. To invite students for convocation, University had set some criteria based on which students get to know 6 months before the convocation that if they had qualified for the convocation ceremony or not. There are three categories in which students lie; Qualified, Disqualified, and Not Applicable. Students lie in these categories concerning their departments criteria. There are three departments; Computer Science (CS), Mechanical Engineering (ME), Electrical Engineering (EE). For CS the criteria are set that student must be having CGPA of greater than 2.0, minimum credit hours should be equal to 152 and maximum semesters equals to 14. For ME the criteria are set that student must be having CGPA of greater than 2.0, minimum credit hours should be equal to 156 and a maximum semester spent equals 14. For EE the criteria are set that student must be having CGPA of greater than 2.0, minimum credit hours should be equal to 160 and a maximum semester spent equals 14. Moreover, the concerned department of scholarship reports the scholarships provided to the student. Students will be rewarded scholarships on three bases; if they achieve the 1<sup>st</sup> position then they will be granted with 75% scholarship, if they achieve 2<sup>nd</sup> position then they will be granted with 50% scholarship, and if they achieve 3<sup>rd</sup> position then they will be granted with 25% scholarship. Students registered with PGC scholarship will be given 25% scholarship by default, in any case of achieving the first 3 position the student will either be given position scholarship or the PGC scholarship.

## Identification of Functions

- 1) Convocation Management
- 2) Scholarships
- 3) Fee Taxes

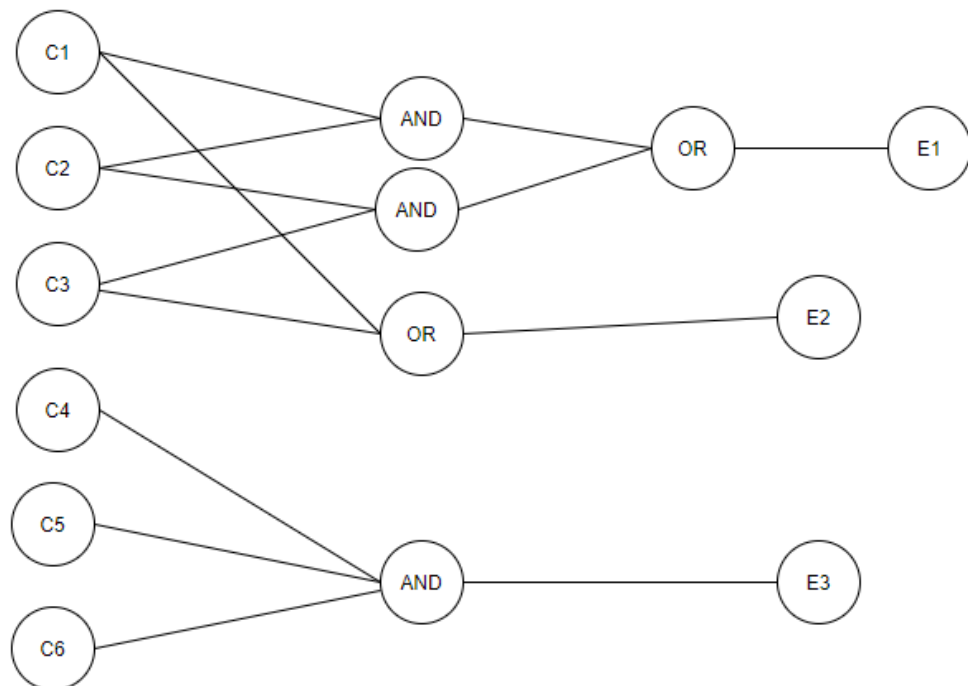
## Cause Effect Graphing

**ConvocationManagement** (int credithours, float gpa, int semester)

### Decision Table

Action	T1	T2	T3	T4	T5	T6	T7	T9	T10
C1	0	0	0	0	1	1	1	1	1
C2	0	0	1	1	0	0	1	1	0
C3	0	1	0	1	0	1	0	1	0
C4	1	0	1	0	1	0	1	0	1
C5	1	1	1	1	0	0	0	0	1
C6	1	1	0	0	1	1	0	0	1
E1	1	0	1	0	0	0	1	0	0
E2	0	0	0	1	0	0	0	1	1
E3	0	1	1	0	1	0	0	0	0

Causes	Effects
C1: gpa<2 C2: semester>13 C3: credithours<152 C4: gpa>=2 && gpa<=4 C5: semester>=8 && semester<=14 C6: credithours>152	E1: not applicable E2: Qualified E3: disqualified

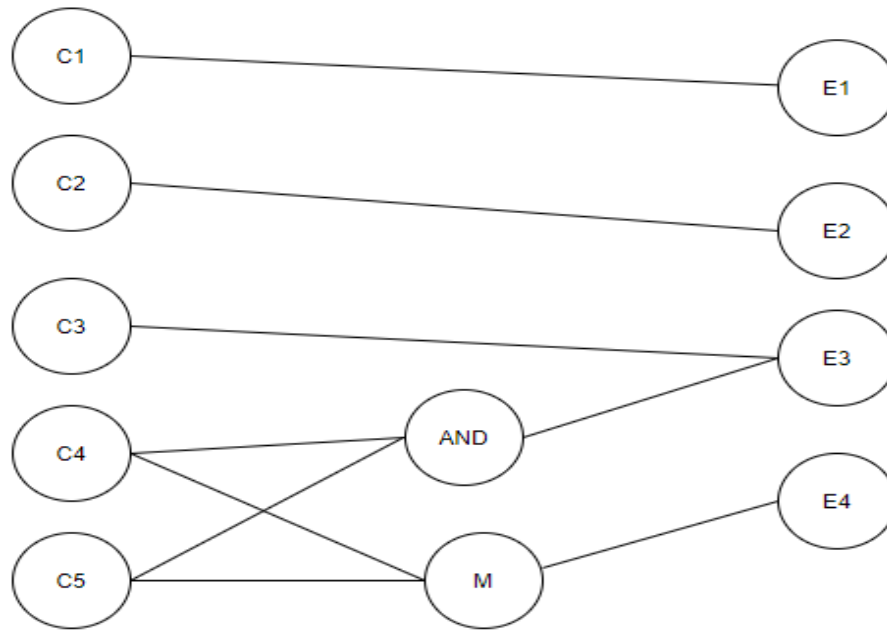


**Scholarships(int position, boolean PGC, float GPA)**

**Decision Table**

Action	T1	T2	T3	T4	T5	T6	T7	T9	T10
C1	0	0	0	0	1	1	1	1	1
C2	0	0	1	1	0	0	1	1	0
C3	0	1	0	1	0	1	0	1	0
C4	1	0	1	0	1	0	1	0	1
C5	1	1	1	1	0	0	0	0	1
C6	1	1	0	0	1	1	0	0	1
E1	1	0	1	0	0	0	1	0	0
E2	0	0	0	1	0	0	0	1	1
E3	0	0	0	0	1	0	0	0	0
E4	0	1	0	0	0	1	0	0	0

Causes	Effects
C1: position==1 C2: position==2 C3: position==3 C4: position<3 && GPA>=2.5 C5: PGC == true	E1: scholarship =75 E2: scholarship =50 E3: scholarship =25 E4: scholarship= 0



**Scholarships(int position, boolean PGC, float GPA)**

### Decision Table

Action	T1	T2	T3	T4	T5	T6	T7	T9	T10
C1	0	0	0	0	1	1	1	1	1
C2	0	0	1	1	0	0	1	1	0
C3	0	1	0	1	0	1	0	1	0
C4	1	0	1	0	1	0	1	0	1
C5	1	1	1	1	0	0	0	0	1
C6	1	1	0	0	1	1	0	0	1
E1	1	0	0	0	0	0	1	0	0
E2	0	0	0	1	0	0	0	1	1
E3	0	0	1	0	1	0	0	0	0
E4	0	1	0	0	0	1	0	0	0
E5	0	1	0	0	0	0	0	1	0

Causes	Effects
C1: (feecharges+buscharges)>100000	E1: tax= 10000
C2: (feecharges+buscharges)<150000	E2: tax= 15000
C3: (feecharges+buscharges)>=150000	E3: tax= 20000
C4: (feecharges+buscharges)<200000	E4: tax= 30000
C5: (feecharges+buscharges)>=200000	E5: tax= 0
C6: (feecharges+buscharges)<300000	
C7: (feecharges+buscharges)>=300000	
C8: (feecharges+buscharges)<100000	