LAB-4

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Q1. Design a machine for accepting decimal number divisible by 3 over the set 0 to 9.

Solution:

If the sum of digit of the number is divisible by 3 then the number is divisible by 3.

For ex:

21=2+1=3/3=0

22=2+2=4/3=1

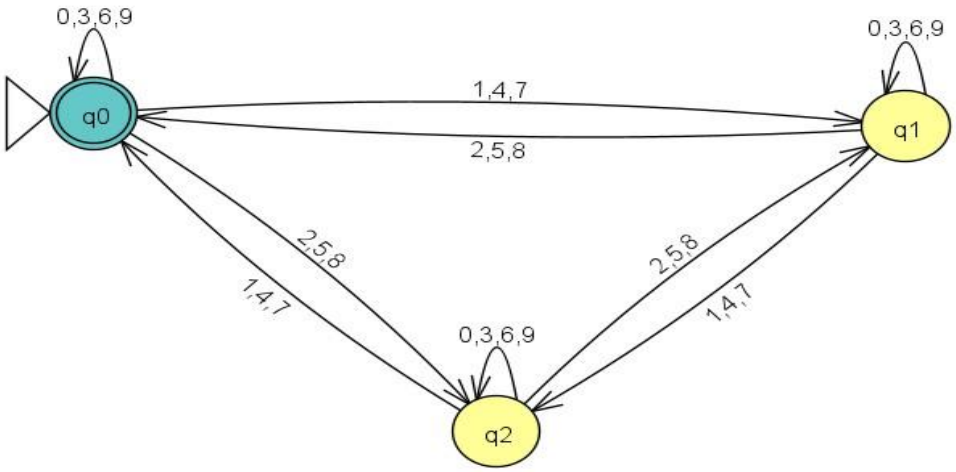
23=2+3=5/3=2

Initially lets take three states {q0, q1, q2}:

q0- when the remainder is 0 and it is the final state

q1- when the remainder is 1

q2- when the remainder is 2



Take an input

3219865789

When we read 3 we are on q0

When we read 2-q2

When we read 1-q0

When we read 9-q0

When we read 8-q2

When we read 6-q2

When we read 5-q1

When we read 7-q2

When we read 8-q1

When we read 9-q1

Hence this input is invalid, it is not divisible by 3

Our machine accepts all the inputs that are divisible by 3

For ex- 30,102,69...