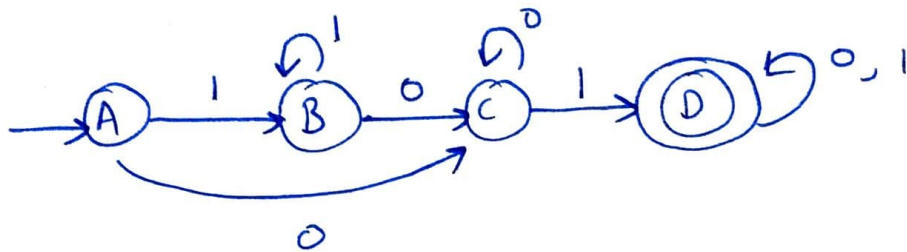


Name : Aditya Aggarwal Roll No: 11T2019210

Q1) Transition Diagram:



Transition Table:

States	0	1
→ A	{C}	{B}
B	{C}	{B}
C	{C}	{D}
* D	{D}	{D}

Note: In code I have taken

A = state 0

B = state 1

C = state 2

D = state 3

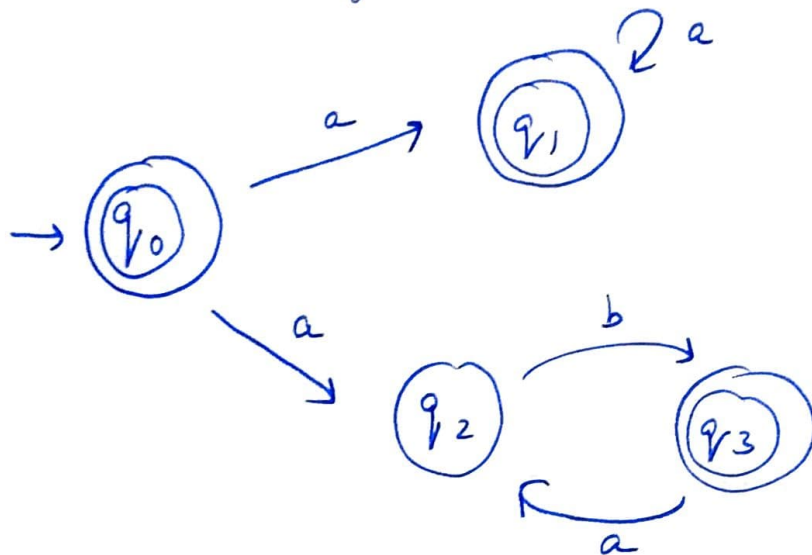
The strings accepted by this DFA would be:

$$(0 + 1^+0) \cdot 0^* \cdot 1^+ \cdot 0^* \cdot 1^*$$

or we can simply say that any string having 01 as its substring will be accepted by DFA.

Q2) Expression: $a^* + (ab)^*$

Transition Diagram:



Transition Table:

States	a	b
$\rightarrow q_0^*$	$\{q_1, q_2\}$	ϕ
q_1^*	$\{q_1\}$	ϕ
q_2	ϕ	$\{q_3\}$
q_3^*	$\{q_2\}$	ϕ

Final States =

$q_0, q_1, \& q_3$