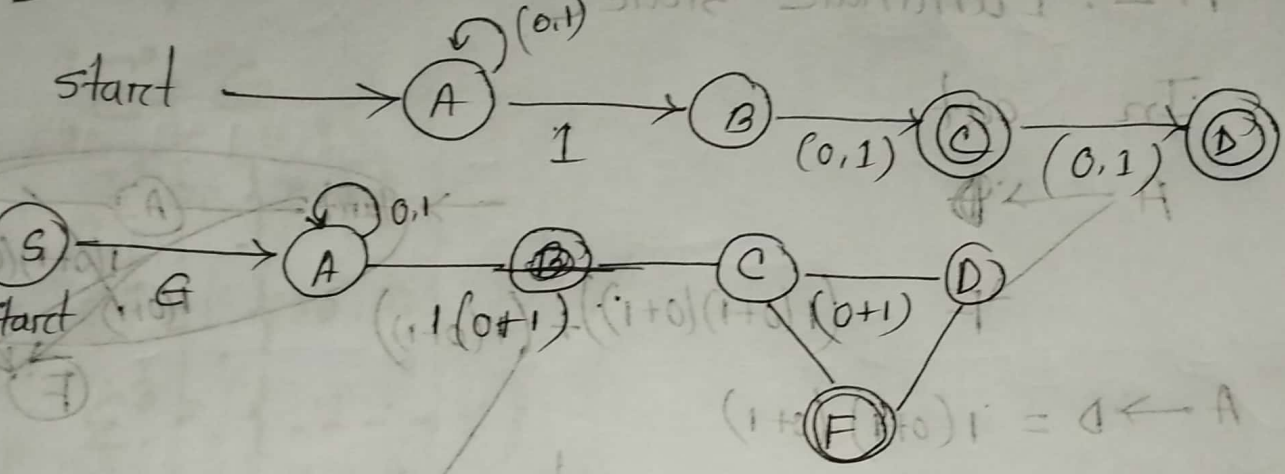
16.10.24

Regular expression:

Example-1



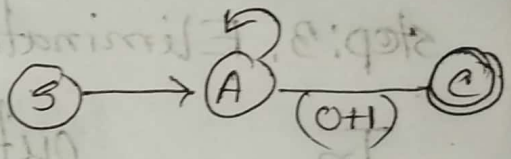




step-1: Eliminate state B

In | out

A | C → (0+1)

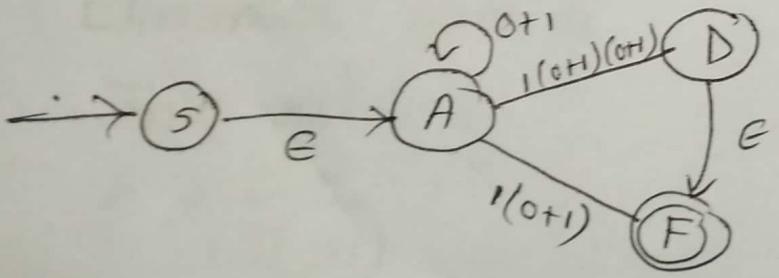



step-2: Eliminate state C

In | out

A → D=1(0+1)(0+1)

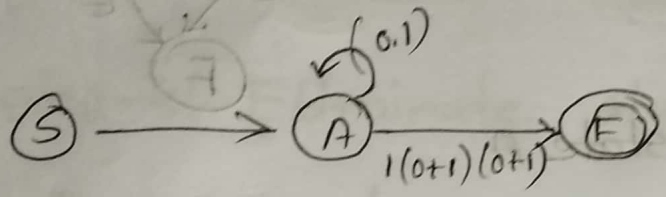
A → F = 1(0+1)



Step-3: Eliminate State D

In out

A ⟶ F = 1(0+1)(0+1)

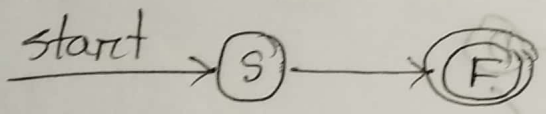



Step-4: Eliminate state A

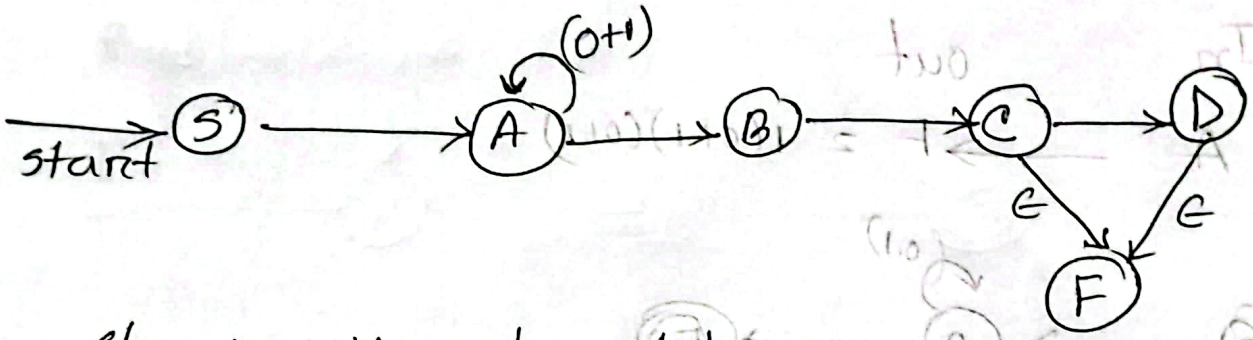
In out

S ⟶ F = $(0+1)^*\left(1(0+1)(0+1)+1(0+1)\right)$

Regular expression = $(0+1)^*\left(1(0+1)(0+1)\right)^*\left(1(0+1)\right)$



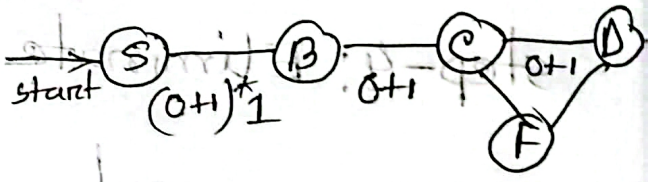
## Example – 2




Step-1: Eliminate state A

In out

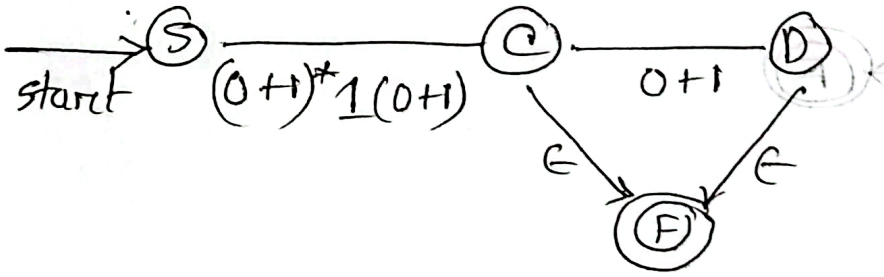
$S \longrightarrow B = (0+1)^*1$




Step-2: Eliminate state B

In out

$S \longrightarrow C = (0+1)^*1(0+1)$

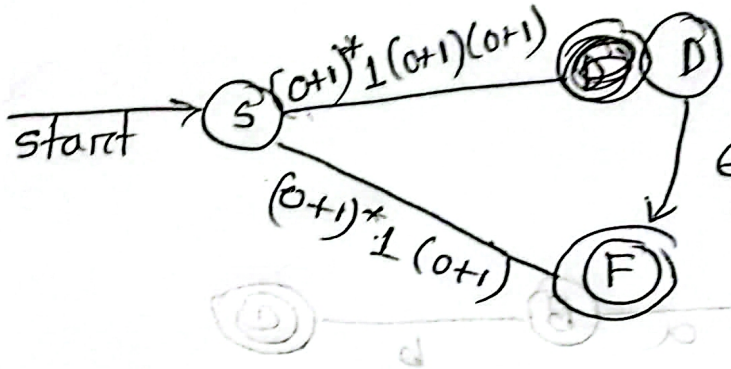



Step-3: Eliminate state C

In out

$S \longrightarrow D = (0+1)^*1(0+1)(0+1)$

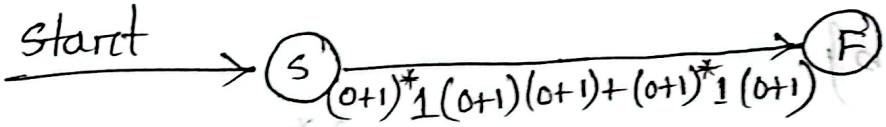
$\longrightarrow F = (0+1)^*1(0+1)$




Step-4: Eliminate state D

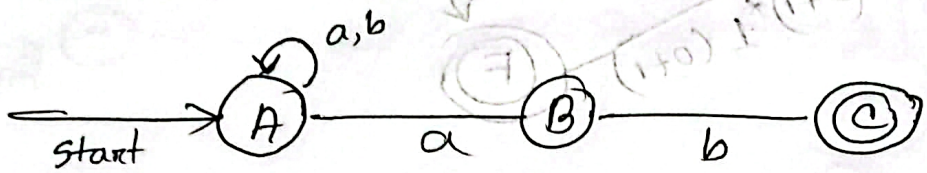
In out

S $F = (0+1)^*1(0+1)(0+1) + (0+1)^*1(0+1)$



$\Sigma = \{a, b\}$

End with ab




NFA

Regular expression $= (a+b)^* ab$

# Start with ab

$\Sigma = \{a, b\}$

Regular expression $= ab\,(a+b)^*$


## Containing:

Containg ab

Regular expression $= (a+b)^* ab\,(a+b)^*$