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Draw the following DFA using table filling algorithm where A is the start state and states C, F & I are the final states.

	0	1
A	B	E
B	C	F
*C	D	H
D	E	H
E	F	I
*F	G	B
G	H	B
H	I	C
*I	A	E

B	X							
*C	X	X						
D		X	X					
E	X		X	X				
*F	X	X		X	X			
G		X	X		X	X		
H	X		X	X			X	X
*I	X	X		X	X		X	X
	A	B	*C	D	E	*F	G	H

P.T.O.

$$f \rightarrow c, f, i.$$

1/1

S	O	I	F/NF	0/0
A	B	E	NF, NF	(X)
B	C	F	F, F	
A	B	E	NF, NF	0
D	E	H	NF, NF	
A	B	E	NF, NF	(X)
E	F	I	F, F	
A	B	E	NF, NF	0
G	H	B	NF, NF	
A	B	E	NF, NF	(X)
H	I	C	F, F	
B	C	F	F, F	(X)
D	E	H	NF, NF	
B	C	F	F, F	0
E	F	I	F, F	
B	C	F	F, F	(X)
G	H	B	NF, NF	
B	C	F	F, F	0
H	I	C	F, F	
C	D	H	NF, NF	0
F	G	B	NF, NF	

J	O	I	F/NF	O/X
C	D	H	NF, NF	0
I	A	E	NF, NF	
D	E	H	NF, NF	(X)
E	F	I	NF, F	
D	E	H	NF, NF	(X)
H	I	C	F, F	
D	E	H	NF, NF	0
G	H	B	NF, NF	
E	F	I	F, F	(X)
G	H	D	NF, NF	
E	F	I	F, F	0
H	I	C	F, F	
F	G	B	NF, NF	0
I	A	E	NF, NF	
G	H	B	NF, NF	(X)
H	I	C	F, F	



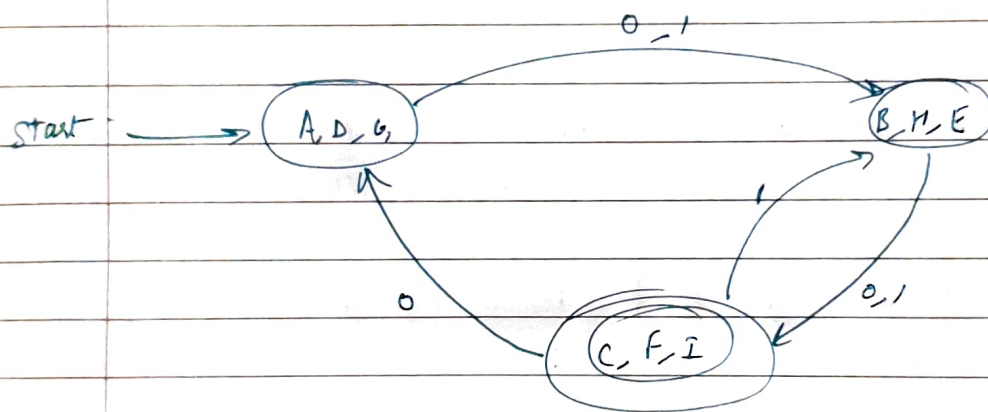
Pairing

$(A, D), (A, G), (D, G) \Rightarrow (A, D, G)$

$(B, H), (B, E), (E, H) \Rightarrow (B, H, E)$

$(C, E), (C, F), (F, I) \Rightarrow (C, F, I)$

Final DFA



Q

$\delta$	0	1
$\rightarrow q_1$	$q_2$	$q_3$
$q_2$	$q_3$	$q_5$
$*q_3$	$q_4$	$q_3$
$q_4$	$q_3$	$q_5$
$*q_5$	$q_2$	$q_5$

	$q_2$	X		
*	$q_3$	X	X	
	$q_4$	X		X
*	$q_5$	X	X	X
		$q_1$	$q_2$	$q_3$
				$q_4$

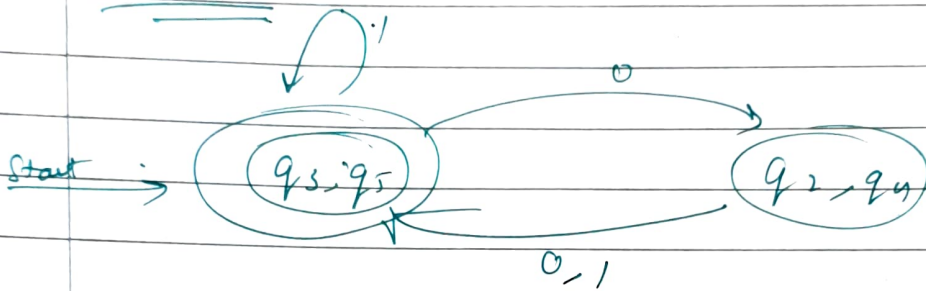
$\delta$	0	1	NT/F	0/1
$q_1$	$q_2$	$q_3$	NT, F	(X)
$q_2$	$q_3$	$q_5$	F, F	
$q_1$	$q_2$	$q_3$	NT, F	(X)
$q_4$	$q_3$	$q_5$	F, F	
$q_2$	$q_3$	$q_5$	F, F	(O)
$q_4$	$q_3$	$q_5$	F, F	
$q_3$	$q_4$	$q_3$	NT, F	(O)
$q_5$	$q_2$	$q_5$	NT, F	

Pairing

$(q_3, q_5) \rightarrow$  equivalent

$(q_2, q_4) \rightarrow$  equivalent

Final DFA



9

	$\delta$	0	1
$\rightarrow q_1$		$q_2$	$q_6$
$q_2$		$q_1$	$q_3$
$* q_3$		$q_2$	$q_4$
$q_4$		$q_4$	$q_2$
$q_5$		$q_4$	$q_5$
$* q_6$		$q_5$	$q_4$

$q_2$					
$* q_3$	X	X			
$q_4$	X	X	X		
$q_5$	X	X	X		
$* q_6$	X	X		X	X
	$q_1$	$q_2$	$q_3$	$q_4$	$q_5$

$\delta$	0	1	W/F	O/O
$q_1, q_2$	$q_2$	$q_1$	NF, F	$\bigcirc$
$q_2$	$q_1$	$q_3$	NF, F	
$q_1$	$q_2$	$q_6$	NF, F	$\bigotimes$
$q_4$	$q_4$	$q_2$	NF, NF	
$q_1$	$q_2$	$q_6$	NF, F	$\bigotimes$
$q_5$	$q_4$	$q_5$	NF, NF	
$q_2$	$q_1$	$q_3$	NF, F	$\bigotimes$
$q_4$	$q_4$	$q_2$	NF, NF	



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$f$	0	1	nt/t	0/1
$q_2$	$q_1$	$q_3$	NT, F	(X)
$q_5$	$q_4$	$q_5$	NT, NT	
$q_1$	$q_2$	$q_4$	NT, NT	(O)
$q_6$	$q_5$	$q_4$	NT, NT	
$q_4$	$q_4$	$q_2$	NF, NF	(O)
$q_5$	$q_4$	$q_5$	NF, NF	

Left Pair

$(q_1, q_2)$ ,  $(q_3, q_6)$ ,  $(q_4, q_5)$

Final DFA

