

README

3 C code files for 3 tasks

① PatternTONDFSM.c



Takes 3 arguments

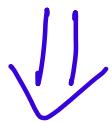
i.e.; (say) ./a.out NDFSM1.tut Pattern1.tut

I executed on:

- | | |
|--------------|--------------|
| • NDFSM1.tut | Pattern1.tut |
| • NDFSM2.tut | Pattern2.tut |
| • NDFSM3.tut | Pattern3.tut |
| • NDFSM4.tut | Pattern4.tut |
| • NDFSM5.tut | Pattern5.tut |

②

NDFSM TO DDFSM . C



Takes 3 arguments

i.e.; (say) ./a.out NDFSM1.tnf DDFSM1.tat

I executed on:

- NDFSM1.tnf DDFSM1.tat
- NDFSM2.tnf DDFSM2.tat
- NDFSM3.tnf DDFSM3.tat
- NDFSM4.tnf DDFSM4.tat
- NDFSM10.tnf DDFSM10.tat

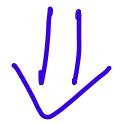
Note: In the NDFSM transition table, I am representing an empty transition using [-1].



Note! When testing NDFSM[DD]FSM, in the input NDFSM.tnf file please represent empty transitions as [-1] instead of []

③

MainProgram.c



Takes 3 arguments

i.e.; (say) ./a.out

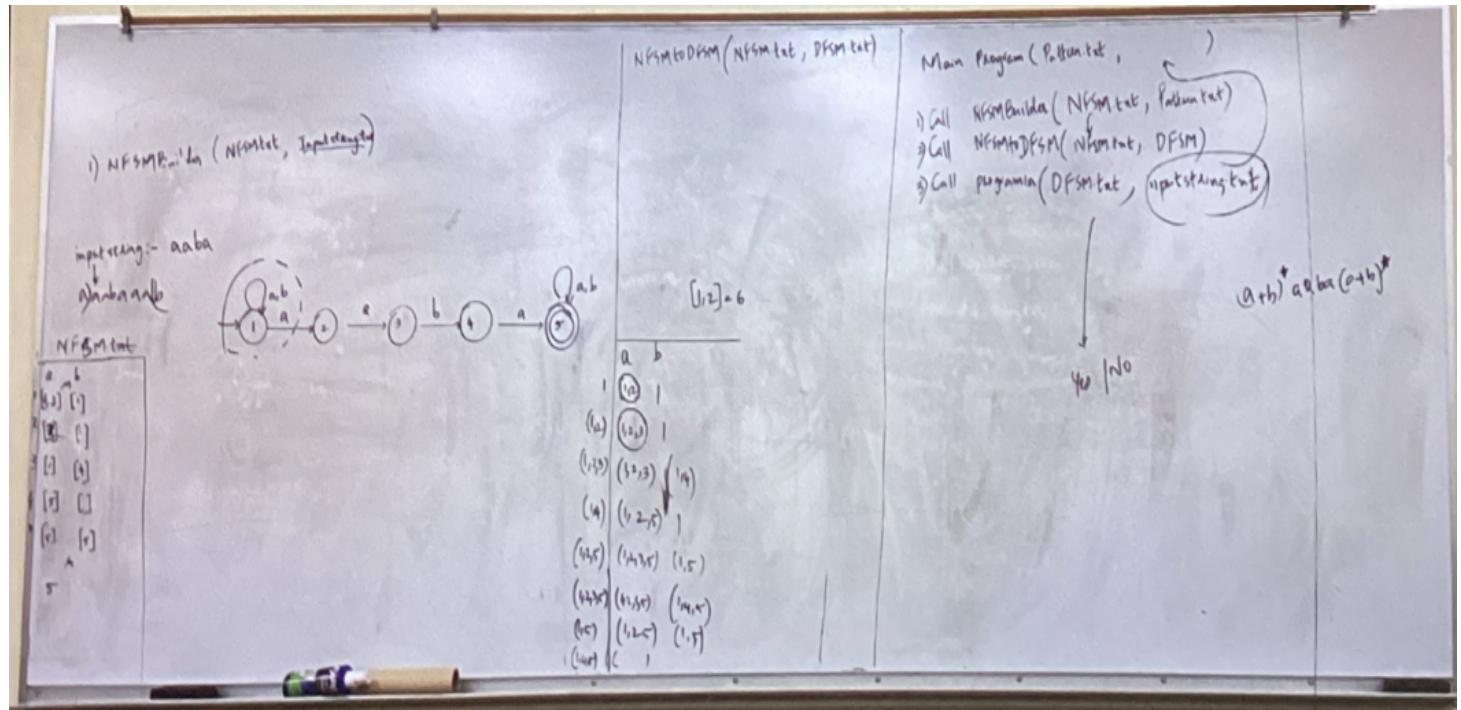
Pattern1.txt input1.txt

I executed on:

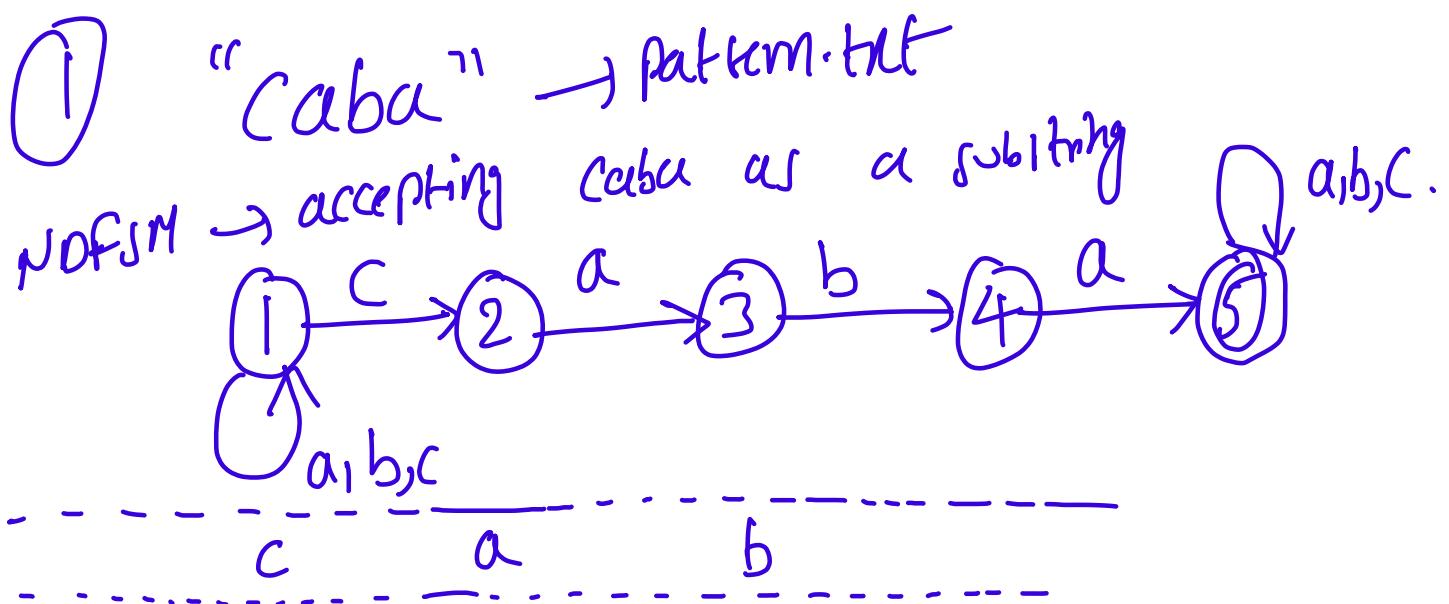
- Pattern1.txt input1.txt
- Pattern2.txt input2.txt
- Pattern3.txt input3.txt
- Pattern4.txt input4.txt
- Pattern5.txt input5.txt

Note: Palb-1.txt to Palb-12.txt are the script files!

Some of my work
towards this Project

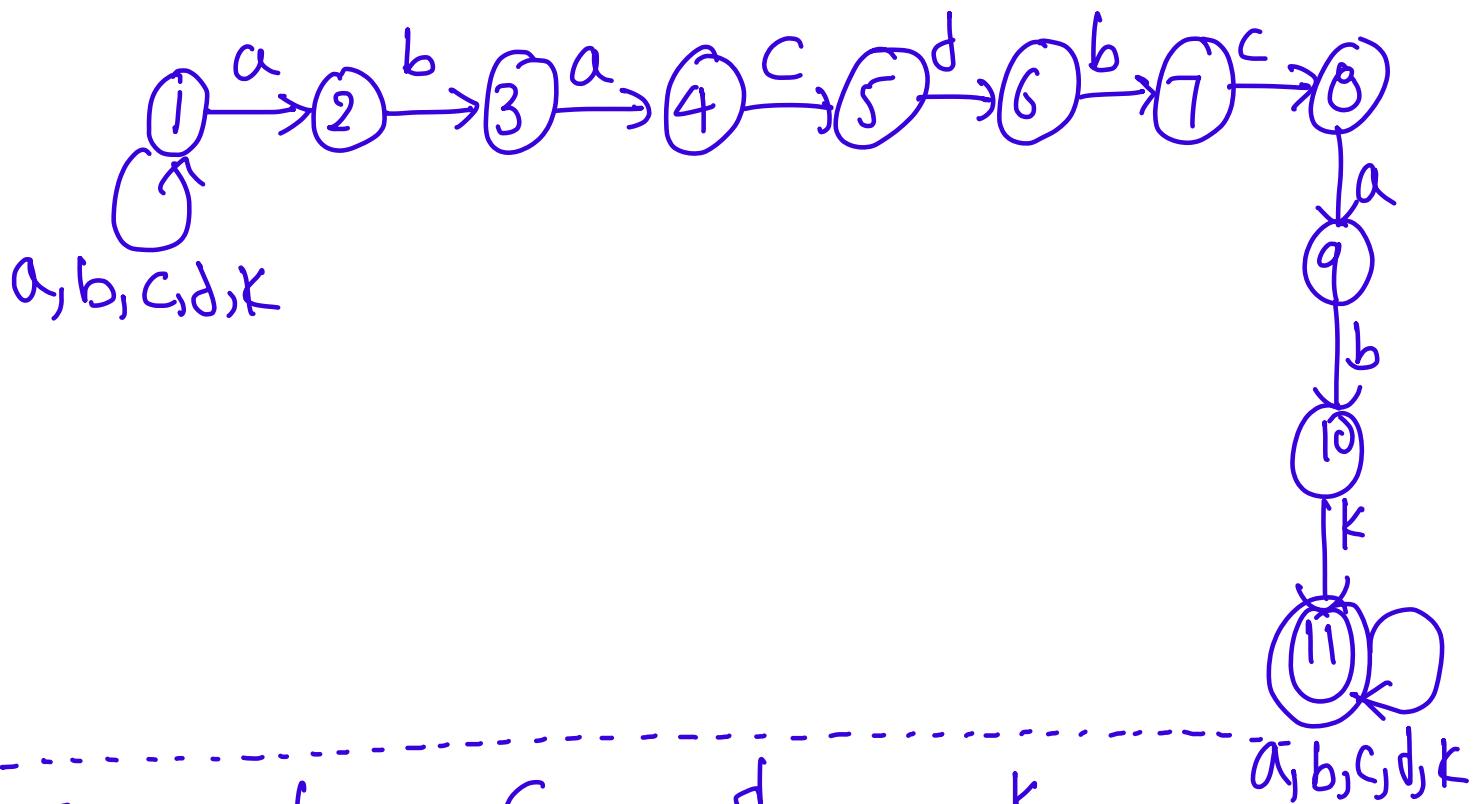


PatternToDfsm

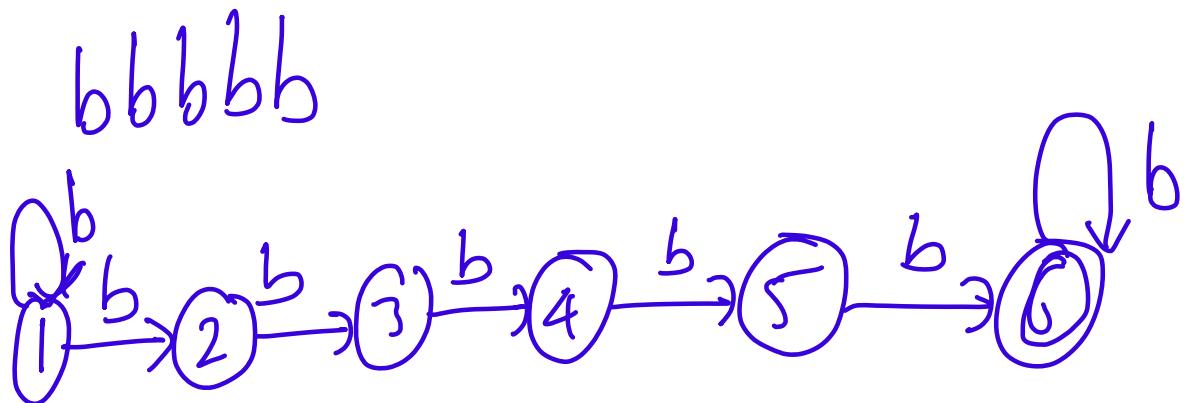
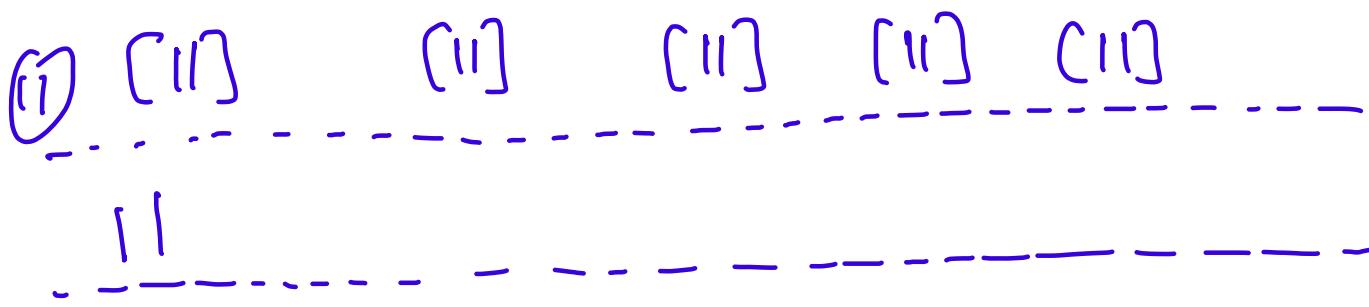


1	[1,2]	[1]	[1]
2	[]	[3]	[]
3	[]	[]	[4]
4	[]	[5]	[]
5	[5]	[5]	[5]

② "abacdbcabK"



	a	b	c	d	K
1	[1,2]	[1]	[1]	[1]	[1]
2	[]	[3]	[]	[]	[]
3	[4]	[]	[]	[]	[]
4	[]	[]	[5]	[]	[]
5	[]	[]	[]	[6]	[]
6	[]	[7]	[]	[]	[]
7	[]	[]	[8]	[]	[]
8	[9]	[]	[]	[]	[]
9	[]	[10]	[]	[]	[]
10	[]	[]	[]	[]	[11]



\dots
 b
 \dots

$\textcircled{1}$ [1,2]

$\textcircled{2}$ [3]

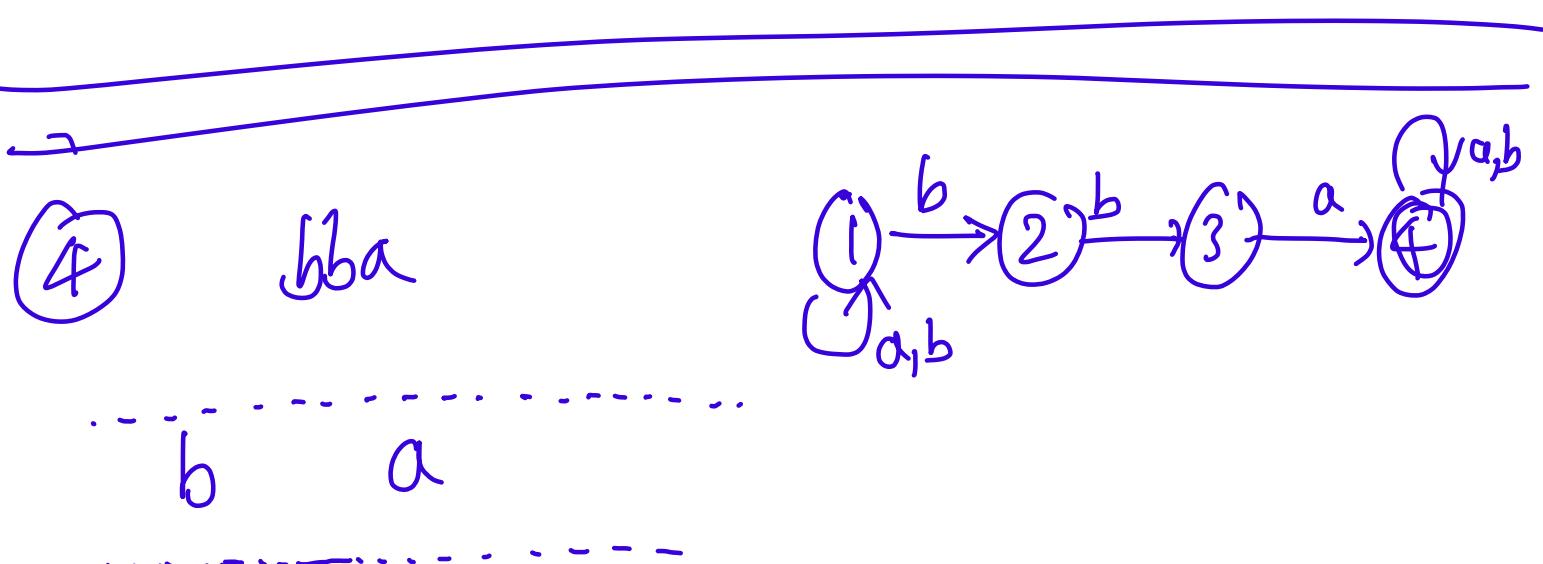
$\textcircled{3}$ [4]

$\textcircled{4}$ [5]

$\textcircled{5}$ [6]

⑥ [6]

6



① [1,2] []

② [3] []

③ [] [4]

④ [4] [4]

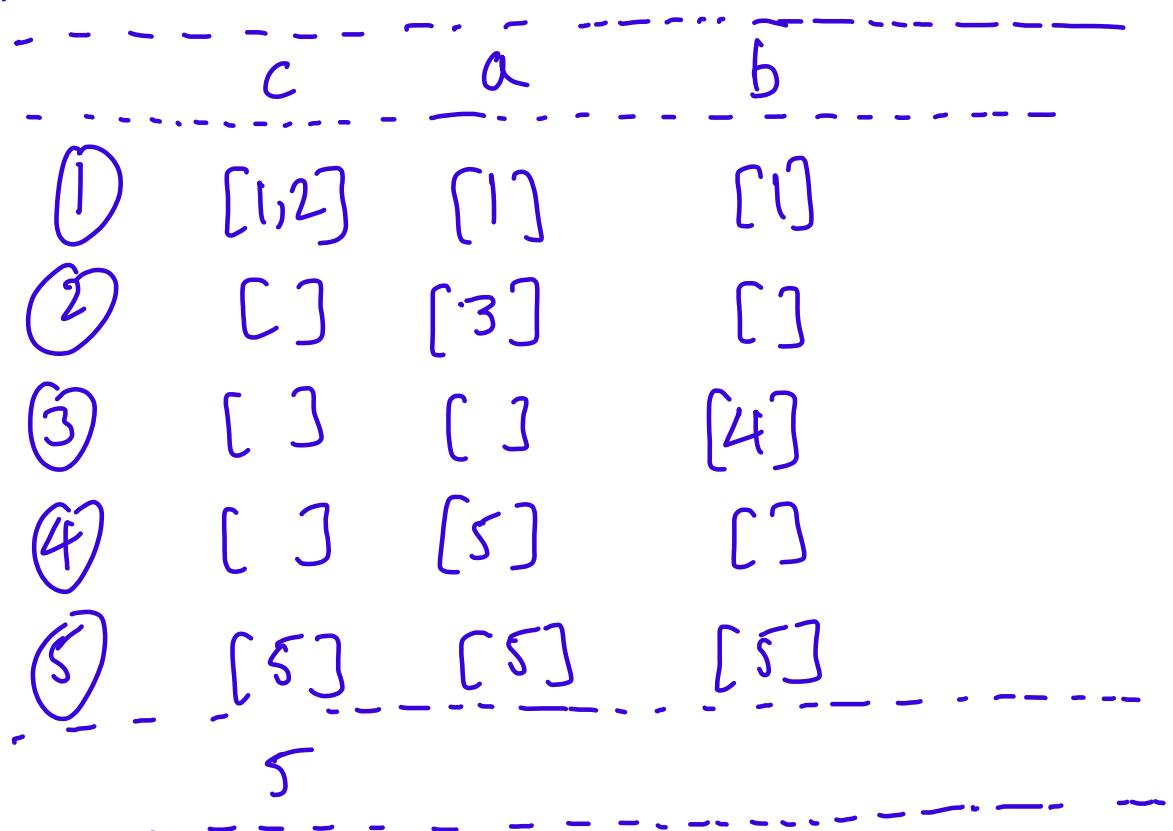
4

NDFSM To Dfsm · C

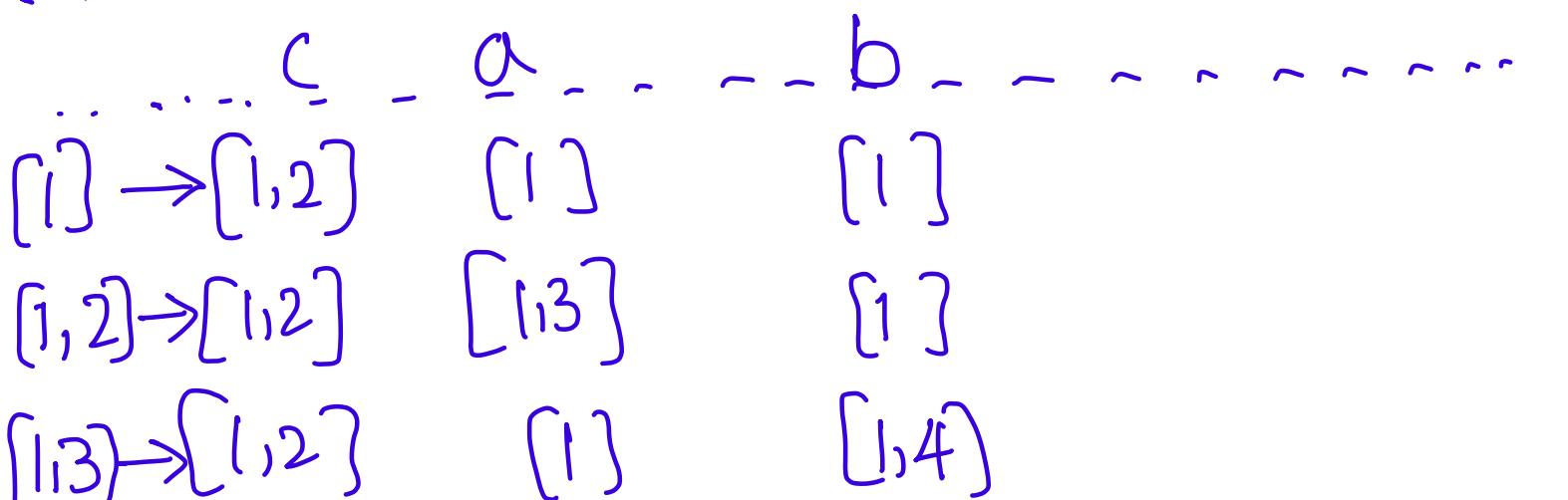
①

NDFSM1.txt

caba →



↓ OIP Dfsm1.txt



$[1,4] \rightarrow [1,2]$	$[1,5]$	$[1]$
$[1,5] \rightarrow [1,2,5]$	$[1,5]$	$[1,5)$
$[1,2,5] \rightarrow [1,2,5]$	$[1,3,5]$	$[1,5]$
$[1,3,5] \rightarrow [1,2,5]$	$[1,5]$	$(1,4,5]$
$[1,4,5] \rightarrow [1,2,5]$	$[1,5]$	$[1,5]$

$$[1,5] \quad [1,2,5] \quad [1,3,5] \quad [1,4,5]$$

(2) NDFSM2.txt

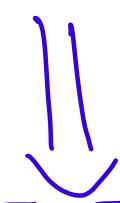
"abacd bcabk" →

	a	b	c	d	k
①	[1,2]	[1]	[1]	[1]	[1]
②	[]	[3]	[]	[]	[]
③	[4]	[]	[]	[]	[]
④	[]	[]	[5]	[]	[]
⑤	[]	[]	[]	(6)	[]
⑥	[]	[7]	[]	[]	[]

⑦	[]	[]	[8]	[]	[]
⑧	[9]	[]	[]	[]	[]
⑨	[]	[10]	[]	[]	[]
⑩	[]	[]	[]	[]	[11]

<u>⑪</u>	[11]	[11]	[11]	[11]	[11]
----------	------	------	------	------	------

↓



Output

OFSM2.txt

a b c d K

[1] → [1,2] [1] [1] [1] [1]

[1,2] → [1,2] [1,3] [1] [0] [1]

[1,3] → [1,2,4] [1] [0] [0] [1]

[1,2,4] → [1,2] [1,3] [1,5] [1] [1]

[1,5] → [1,2] [1] [1] [1,6] [1]

[1,6] → [1,2] [1,7] [1] [0] [1]

[1,7] → [1,2] [1] [1,8] [1] [1]

[1,8] → [1,2,9] [1] [0] [1] [1]

[1,2,9] → [1,2] [1,3,10] [1] [1] [1]

$\{1, 3, 10\} \rightarrow$	$\{1, 2, 4\}$	$\{1\}$	$\{1\}$	$\{1\}$	$\{1, 11\}$
$\{1, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 2, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 3, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 3, 11\} \rightarrow$	$\{1, 2, 4, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 2, 4, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 3, 11\}$	$\{1, 5, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 5, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 6, 11\}$	$\{1, 11\}$
$\{1, 6, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 7, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 7, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 11\}$	$\{1, 8, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 8, 11\} \rightarrow$	$\{1, 2, 9, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 2, 9, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 3, 10, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 3, 10, 11\} \rightarrow$	$\{1, 2, 4, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$	$\{1, 11\}$
$\{1, 2, 4, 11\} \rightarrow$	$\{1, 2, 11\}$	$\{1, 3, 11\}$	$\{1, 5, 11\}$	$\{1, 11\}$	$\{1, 11\}$
-----	-----	-----	-----	-----	-----
	$\{1, 11\}$	$\{1, 2, 11\}$	$\{1, 3, 11\}$	$\{1, 2, 4, 11\}$	$\{1, 5, 11\}$
	$\{1, 6, 11\}$	$\{1, 7, 11\}$	$\{1, 8, 11\}$	$\{1, 2, 9, 11\}$	$\{1, 3, 10, 11\}$
	$\{1, 2, 4, 11\}$				
-----	-----	-----	-----	-----	-----

3

Nyfsm.txt

bbaab → - - - b - — — —

$$\textcircled{1} \quad [1, 2]$$

② [3]

(3) (4)

(4) [5]

5 [6]

(6) [6]

6

89

DFSM3-TAF

$$[1] \rightarrow [1, 2]$$

$$[1, 2] \rightarrow [1, 2, 3]$$

$$\{1, 2, 3\} \rightarrow [1, 2, 3, 4]$$

$$\{1, 2, 3, 4\} \rightarrow [1, 2, 3, 4, 5]$$

$$\{1, 2, 3, 4, 5\} \rightarrow [1, 2, 3, 4, 5, 6]$$

$$\left[1, 2, 3, 4, 5, 6 \right] \rightarrow \left[1, 2, 3, 4, 5, 6 \right]$$

$[1, 2, 3, 4, 5, 6]$

(5)

NDFSM4.txt

bb a → - - - - -
 b a

- - - - -

$\textcircled{1} \rightarrow [1, 2]$	$[1]$
$\textcircled{2} \rightarrow [3]$	$[2]$
$\textcircled{3} \rightarrow []$	$[4]$
$\textcircled{4} \rightarrow [4]$	$[4]$

- - - - -

- - - - -
 ↓ op DFSM4.txt
 - - - - -
 b a

$[1] \rightarrow [1, 2]$ $[1]$

$[1, 2] \rightarrow [1, 2, 3]$ $[1]$

$[1, 2, 3] \rightarrow [1, 2, 3]$ $[1, 4]$

$[1, 2, 4] \rightarrow [1, 2, 4]$ $[1, 4]$

$[1, 2, 4] \rightarrow ([1, 2, 3], 4) [1, 4]$

$(1, 2, 3, 4) \rightarrow ([1, 2, 3], 4) [1, 4]$

$\overbrace{\quad}^{\sim \sim \sim \sim} [1, 4] ; [1, 2, 4] \overbrace{\quad}^{\sim \sim \sim \sim} [1, 2, 3, 4]$

⑤

NDFSMS.txt

① For NDFSMI.tlt

↓ DPM file is: DPMI.DLL

	c	a	b	
①	2	1	1	
②	2	3	1	
③	2	1	4	
④	2	5	1	
⑤	6	5	5	
⑥	6	7	5	
⑦	6	5	8	
⑧	6	5	5	
	5	6	7	8

③ NDFSM3-fxt
|| ncfsm3-fxt

U OF GRIS-PRC

5
2
3
4
5
6
6
6

② for NDFM2-tat

↓ DFm2-tf D:

	a	b	c	d	k	(6)	19	11	11	11	11
①	2	1	1	1	1	(6)	19	11	11	11	11
②	2	3	1	1	1	(17)	12	20	11	11	11
③	4	1	1	1	1	(20)	14	11	11	11	11
④	2	3	5	1	1						
⑤	2	1	1	6	1						
⑥	2	7	1	1	1		11	12	10	14	15
⑦	2	1	0	1	1		19	20			
⑧	9	1	1	1	1						
⑨	2	10	1	1	1						
⑩	4	1	1	1	11						
⑪	12	11	11	11	11						
⑫	12	13	11	11	11						
⑬	14	11	11	11	11						
⑭	12	13	15	11	11						
⑮	12	11	11	16	11						
⑯	12	17	11	11	11						
⑰	12	11	10	11	11						

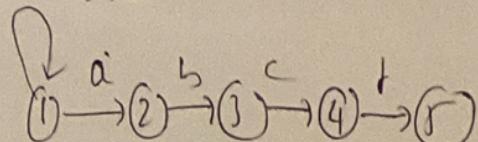
NDFSM10.txt

Pattern10.txt

a	b	c	d	e
(1,2)	(1)	(1)	(1)	(1)
(2)	(-1)	(3)	(-1)	(-1)
(3)	(-1)	(1)	(4)	(-1)
(4)	(-1)	(1)	(1)	(-1)
(5)	(-1)	(1)	(1)	(1)
(6)	(6)	(6)	(6)	(6)

abcde

abc,de



abc,de
abcde

G

↓ DFSM10.txt

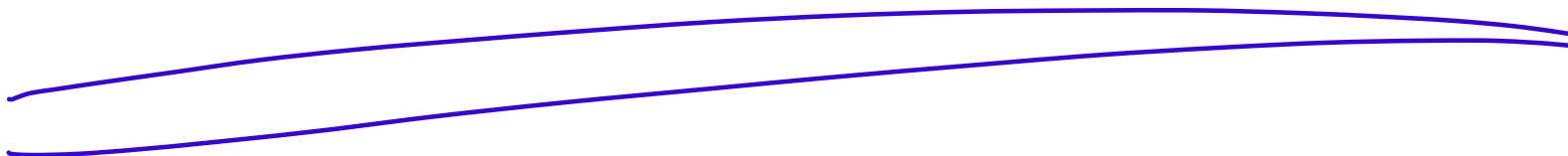
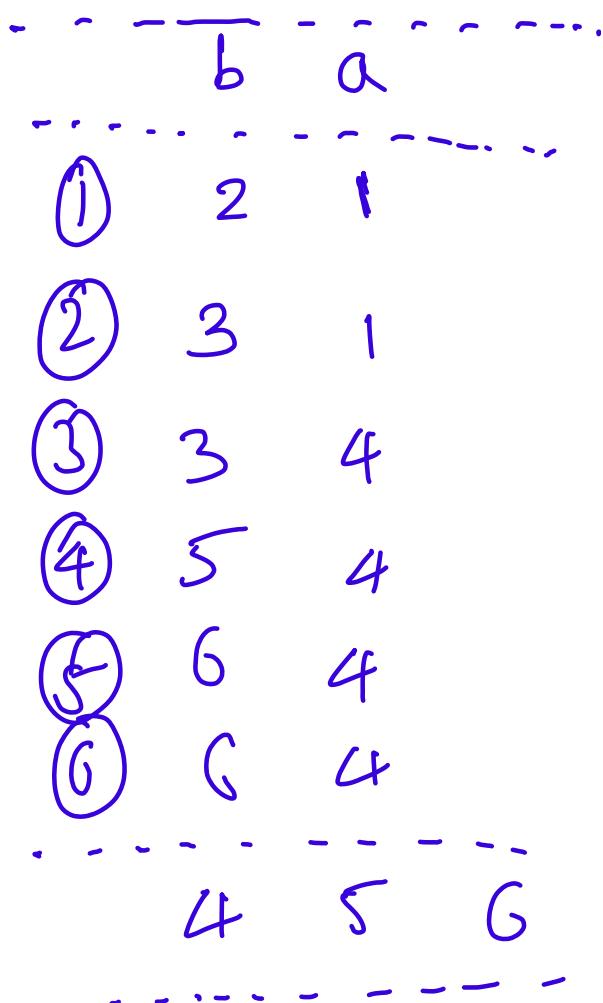
a	b	c	d	e
(1) → [1,2]	[1]	[1]	[1]	[1]
[1,2] → [1,2]	[1,3]	[1]	[1]	[1]
(1,3) → [1,2]	[1]	[1,4]	[1]	[1]
(1,4) → [1,2]	[1]	[1]	[1,5]	[1]
(1,5) → [1,2]	[1]	[1]	[1]	[1,6]
(1,6) → [1,2,6]	[1,6]	[1,6]	[1,6]	[1,6]
(1,2,6) → [1,2,6]	[1,3,6]	[1,6]	[1,6]	[1,6]
(1,3,6) → [1,2,6]	[1,6]	[1,4,6]	[1,6]	[1,6]
(1,4,6) → [1,2,6]	[1,6]	[1,6]	[1,6]	[1,6]
(1,5,6) → [1,2,6]	[1,6]	[1,6]	[1,6]	[1,6]

~~(1,6)~~ (1,2,6) (1,3,6) (1,4,6) (1,5,6)

a	b	c	d	e
①	2	1	1	1
②	2	3	1	1
③	2	1	4	1
④	2	1	1	5
⑤	2	1	1	1
⑥	7	6	6	6
⑦	7	8	6	6
⑧	7	6	9	6
⑨	7	6	6	10
⑩	7	6	6	6

6 7 8 9 10

NDFM4.tkt
↓ DFJM4.tkt



PatternToNDFSM.c

- getUniqueAlphabets
- isValidPattern
- main

main → isValidPattern
→ getUniqueAlphabets

NDFSMToDFSM.c

- readNDFSM
- PrintNDFSM
- writeDFSMToFile
- PrintDFSMConsole
- convertNDFSMtoDFSM
- Main

main → readNDFSM
→ PrintNDFSM
→ convertNDFSMtoDFSM
└─> writeDFSMToFile
→ PrintDFSMConsole

MainProgram.c

Some test cases (for MainProgram.c)
(small C programs)

① Pattern: b

Input: b

yes

② Pattern: abc

Input: abxyz

Invalid symbols in the i/p
or some msg

Shouldn't print yes/no for this
type of cases

③ Pattern: bbbbbb

Input: b

no

④

some edge test-cases for NDFSMtoDFSM.c

① NDFSM

b

[1,2]

[3]

[4]

[5]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

[6]

<p