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Reg. No: *L1S19BSCS0001*

Section: *(G1)*

Compiler Construction (CC)

Assignment # 1

Submitted to: Sir Muhammad Usman Afzal

Due Date: 12-04-2022

Question :-

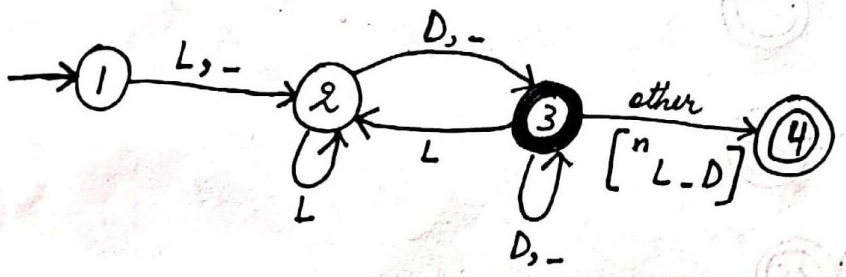
Generate Finite Automata for each regular expression.

(a)

Identifiers :-

Regular Expression :- $(\_|L)(L|\_|D)^*(D|\_)$

Finite Automata :-

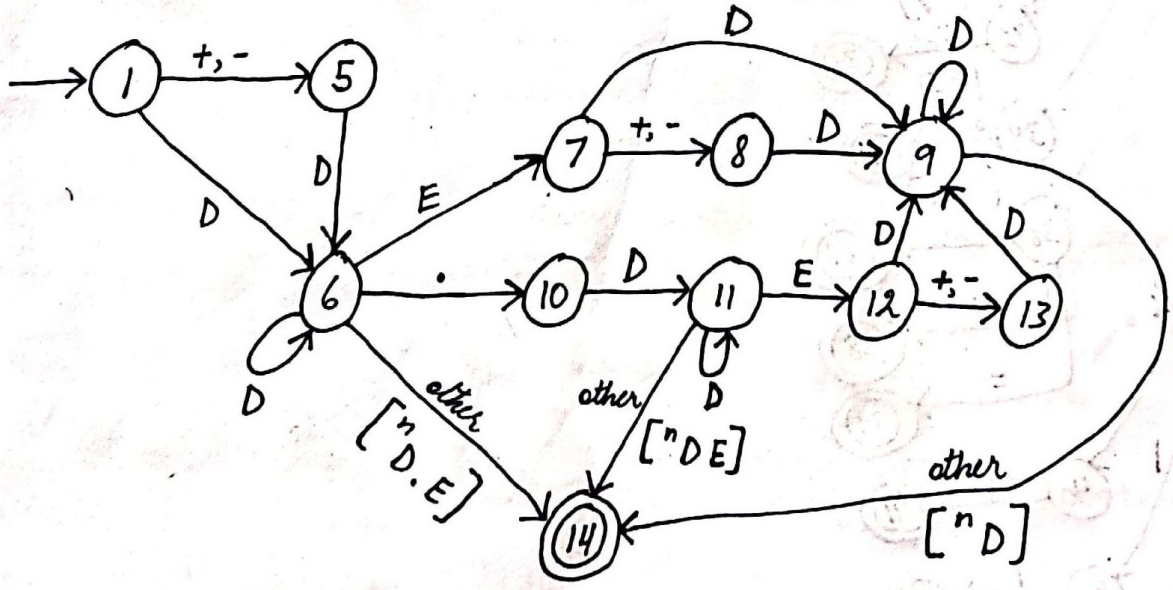


(b)

Numbers :-

Regular Expression : $[+-]?(D^+)(\backslash.D^+)?$ and exponent numbers.

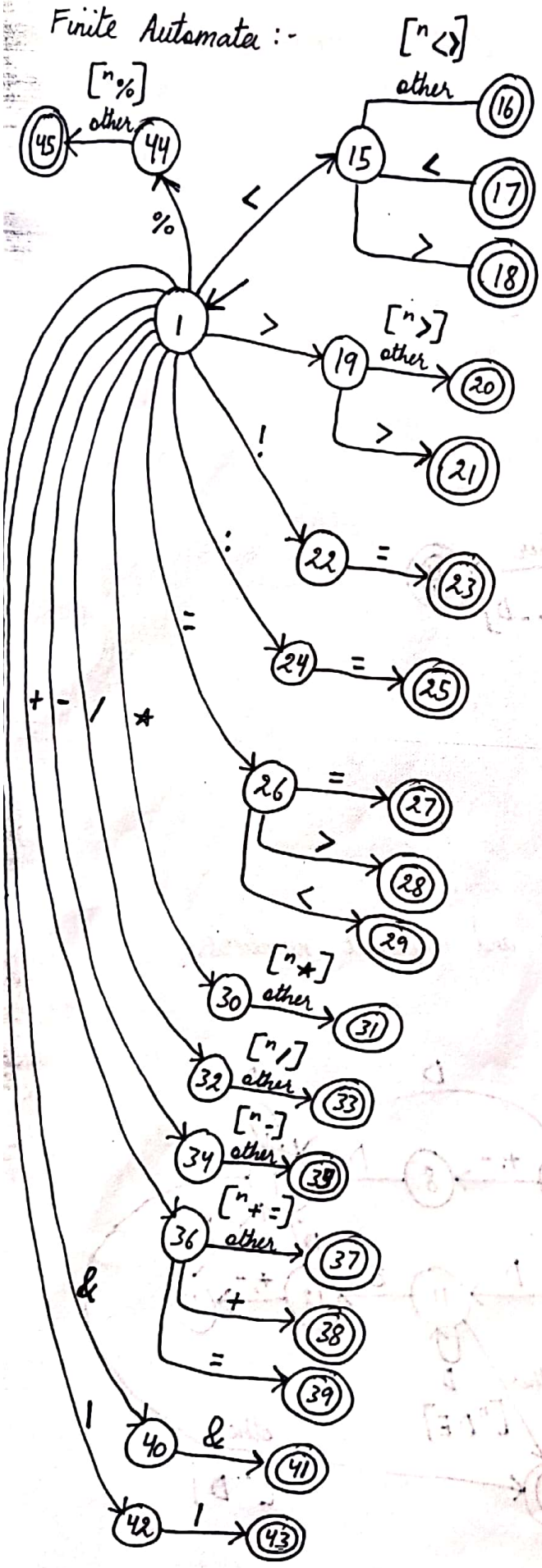
Finite Automata :-



(c)

Operators :-

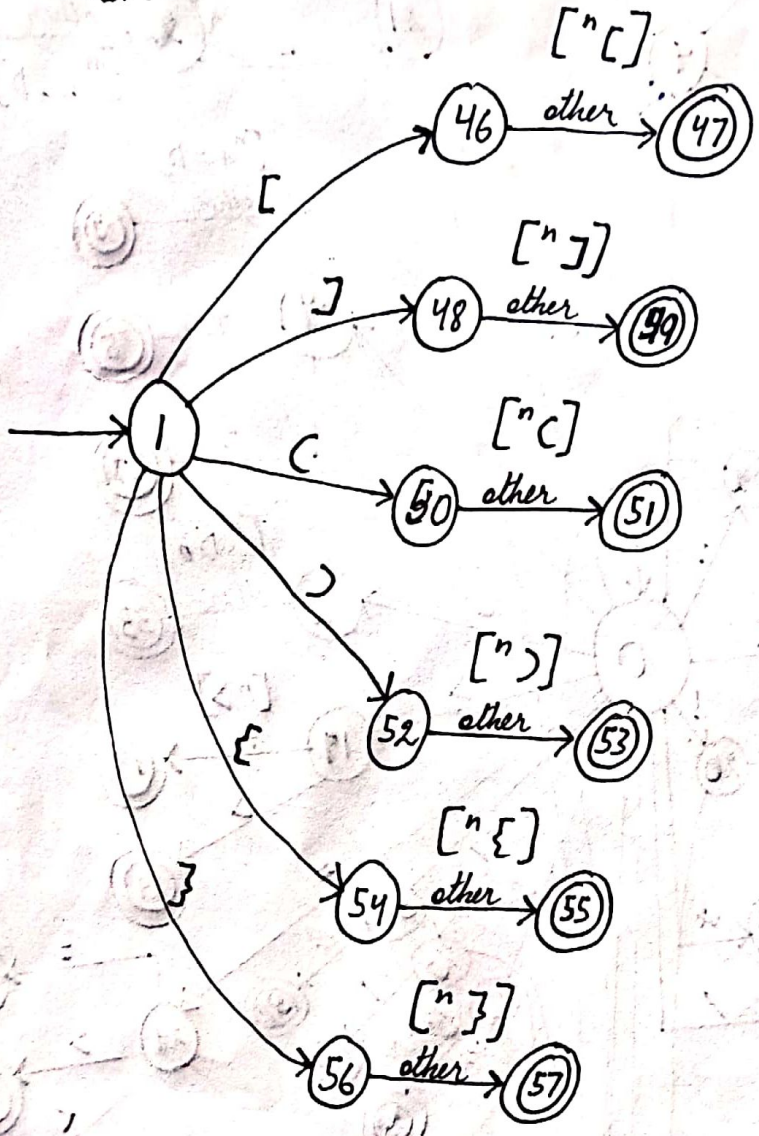
Finite Automater :-



(d)

Punctuations:

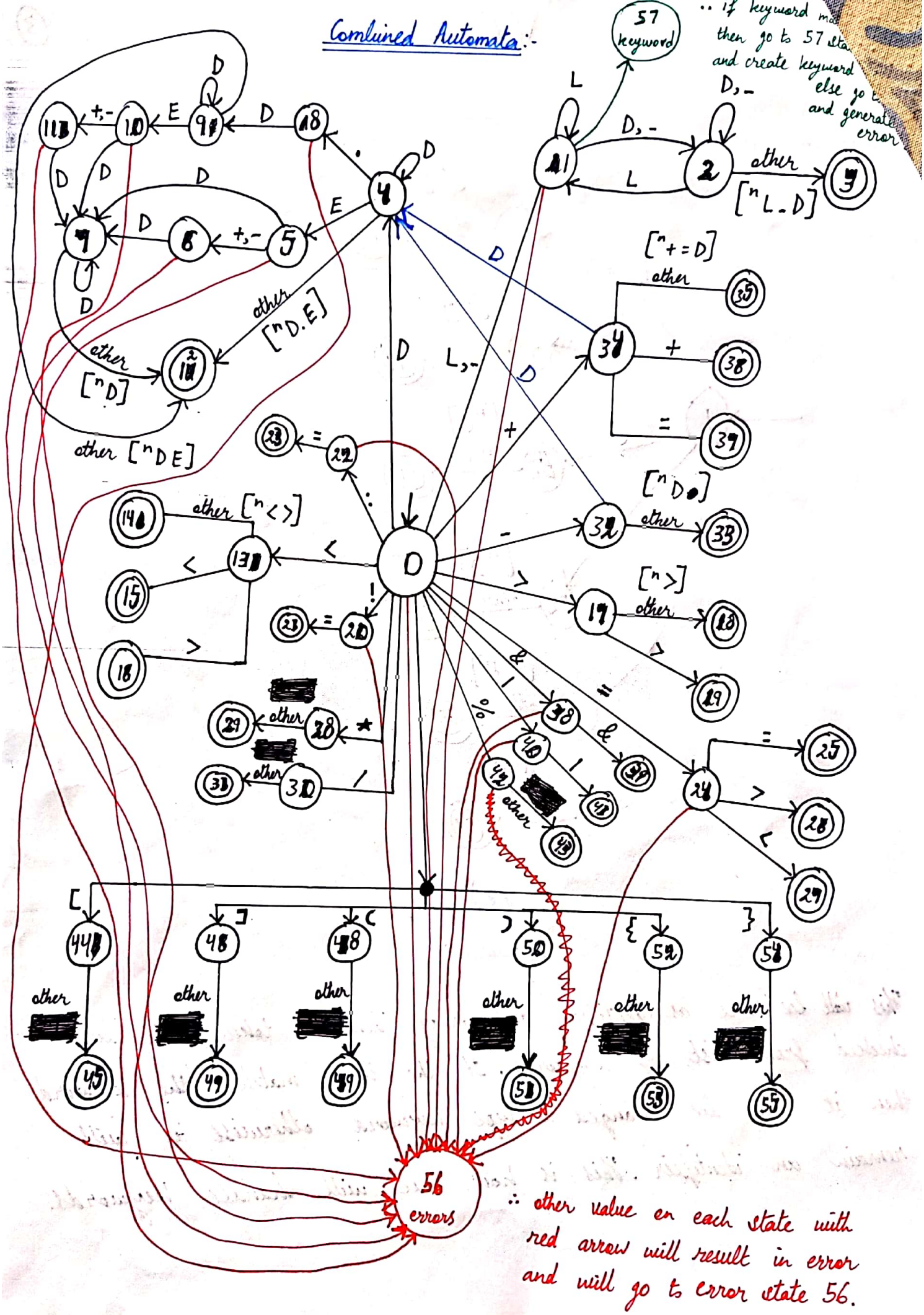
Finite Automata :-



(e)

Keyword :-

This will be same as identifier and every identifier token will be checked from list of keywords. If the token matches the keyword then it will be changed to type keyword otherwise it will remain an identifier. This is how we will handle keywords.



(5)

Transition Table :-

State	L	D	-	.	E	+	-	=	:	>	<	!	*	/	&	|	%	[	]	(	)	{	}	OTHER
0	1	4	1	56	56	34	32	24	22	17	13	20	28	30	38	40	42	44	46	48	50	52	54	56
1	1	2	2	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
2	1	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	12	4	12	8	5	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
5	56	7	56	56	56	6	6	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
6	56	7	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
7	12	7	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
8	56	9	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
9	12	9	12	12	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
10	56	7	56	56	56	11	11	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
11	56	7	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	14	14	14	14	14	14	14	14	14	16	15	14	14	14	14	14	14	14	14	14	14	14	14	14
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	18	18	18	18	18	18	18	18	18	19	18	18	18	18	18	18	18	18	18	18	18	18	18	18
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	56	56	56	56	56	56	56	21	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	56	56	56	56	56	56	56	23	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	56	56	56	56	56	56	56	25	56	26	27	56	56	56	56	56	56	56	56	56	56	56	56	56
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	33	4	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	35	4	35	35	35	36	35	37	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	56	56	56	56	56	56	56	56	56	56	56	56	56	56	39	56	56	56	56	56	56	56	56	56
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	41	56	56	56	56	56	56	56	56
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0