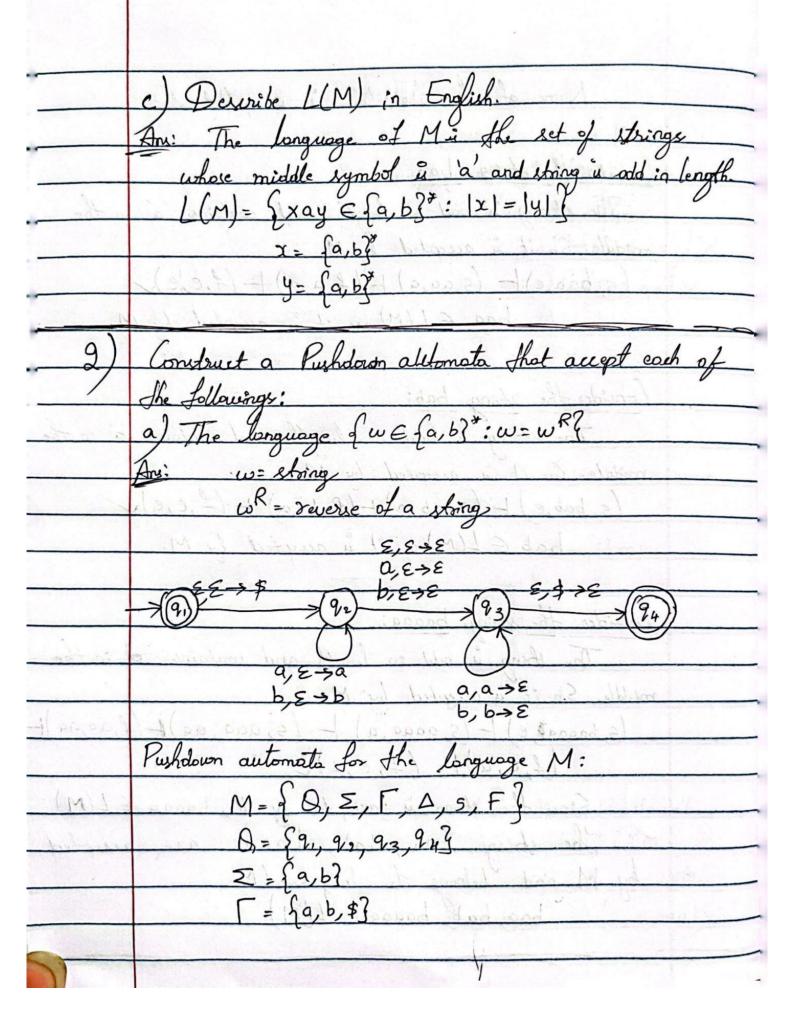
	Theory of Automata
	Homework -6
1)	Consider the puchdown automata M=(K, E, T, D, S, F)
	where $K = S_s, f_s$
	$F = S \neq 3$
VIE	$\leq = \{a, b3, \dots \}$
1	= {a},
71	$\Delta = \{((s,a,e),(s,a)), ((s,b,e),(s,a)), ((s,a,e),(f,e)),$
	a) Trace all the possible sequence of transitions
	of M on input aba
	Any The statechart diagram for above machine is
	b,e->a a,e->a
	a, e > e
PRIA (000000000000000000000000000000000000	The possible sequence of francisions are
	i) (s, aba, e) + (s, ba, a) + (s, a, aa) + (s, e, aaa)
	ii) (3, aba, e) + (5, ba, a) + (5, a, aa) + (f, e, aa)
-	iii) (s, aba, e) + (f, ba, e)
	b) Show that aba, aa, abb \$(M), but baa, bab,
	bagaa & L(M)
· Tru	And A elving is accepted by the machine M, if
V Lan	the middle symbol in a string which is odd in
	length is 'a'

The string is not accepted by Max it doesn't We can also their all possible transitions. s, aba,e) - (s, ba,a) + (s,a,aa) s, aba,e) + (s, ba,a) + (s,a,aa) + (\$,e,aa) X (s, aba,e) / (1, ba,e) X None of the transition is accepted. Consider the stoing aa: The string is not neepled by Mas it is even length. aa & (LLM) We can also check all possible (s,aa,e) + (s,a,a) + (s,e,aa) x - (s, aq,e) + (s, a, a) + (ge,a) x - (s, age) + (\$, a, a) x None of the transitions is suppled. onviden the string abb: The string is not accepted by Max it doesn't in the middle of string abb \$L(M) (s,abb,e) + (s,b,a) + (s,b,aa) + (s,e,aaa) x

	Mone of the transition is accepted.
Section 1	the harmon of them the set the set
Willia)	Consider the storng baa:
* 1	The etring is odd in length and contains a in the
	meddle. So it is accepted by M.
	(s, baa,e) + (s,aa,a) + (f,a,a) + (f,e,e)
	baa ELLM) as it is accepted by M.
	3) wither a Publican alternate that and to
	Consider the string bab:
	The storing is odd on length and contains a in the
	middle. So it is accepted by M.
	(s, bab,e) + (s, ab, a) + (f, b, a) + (f, e, e)
	bab E L(M) as it is accepted by M.
	343,0
	Consider the string, baaaa:
	The thing is odd in length and contains 'a in the
	middle. So it is accepted by M.
	(s, baaaa), e) + (s, aaa, a) + (s, aaa, aa) + (f, aa, aa) +
	(f,a,a)+ (f,e,e)
The second	Since the strong is accepted by M, baaaa & L(M)
	". The strings baa, bab, baaaa are accepted
	by M and belongs to language (M).
	by M and belonge to language (M). bag, bab, bagage (M)



	Input	Input, a					Ь				8			
	Stack	a	b .	\$	٤	a	Ь	\$	٤	a	6	\$	٤	
	2,	ø	Ø	0	Ø	Ø	Ø	Ø	Ø	Ø	Ø	ø	{(4, \$)}	
	92	ø	Ø	Ø	((42,E)	Ø	ø	Ø	(92,b), 9 (93,E)}	Ø	Ø	Ø	(93,8)}	
	93	{ (93,E	130	Ø	Ø	Ø	{(93,8)}	Ø	d	Ø	Ø	{(94,8)}	Ø	
*3	24	Ø	Ø	Ø	Ø.	Ø	Ø	Ø	Ø	Ø	Ø	Ø	ø	
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	/ 0	f a's	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	d \&- \&-	Ыs. >a >b E, E -		<b>—</b>							
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	/ 0	f a's	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	d \&- \&-	Ыs. >a >b E, E -							1.		
	/ 0	f a's	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	d \&- \&-	Ыs. >a >b E, E -		or the			7		1;		
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	/ 0	f a's	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	d \&- \&-	Ыs. >a >b E, E -		In the					1;		
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