UTORIAL

Page No.

VIACSOID List & western very List What are the uses of OPTAB Commemonic Operation table) and SYMTAB (symbol Table) during assembling process! Specify the use of each during pass 1 and pass 2 of a two pass assembler. a content never change OPTAB [Static table] (a) USES - Used to look up mnemonic operation codes and translate them to machine language equivalents. (b) During PASS 1, OPTAB is used to look up and validate operation coded in source program and to find the instruction length for incrementing LOCCTR. (C) In PASS 2, it is used to translate the operation code to machine language. > (Symbol inserted (deleted / searched) SYMTAB [Dynamic table] (a) USES - SYMTAB includes the name and value caddress) for each label in the source program, toghether with flags to indicate error conditions (Eq : symbol defined at two different places). (b) During Pass 1 of the assembler, labels are entered into SYMTAB as they are encountered in the source program, along with their assigned addresses (form Locate) (c) During Pass 2, Symbols used as operands are looked up in symTAB to obtain the addresses to be inserted in the assembled instruction. Source program | READ (Label, opcode, operand)

OPTAB

opcode mappings

are reterenced)

PASS 1

SYMTAB Credit SYMTAB

PASS 2

Labels I address mapping Label address mapping are referenced

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	nanaptif and a second s
2.7	What are assembler directives? List any three assembler directive
2.7	Costal godergo manmana e Aardo do seu all seo todal se
1.4	Assembler Directives are instructions that direct the assembler to
22.60	and something and does to see all
	Directives do mony things:
	1 Some tell the assembler to set aside space for variables
The I	@ other's tell the ascembler to include additional source files,
algalas	and other establish the start address for your program.
a la la la	[Note - Assembler Directives con't generate machine code]
bas	among sonor at hike tradesign
	Example of assembler directives will started
of sheet	1 START < address-constant > - indicates the first word of target program'
	on ROM memory Location with address
	START 400 - Rom Location would be 200 where Kaddren-work
	first machine code will recide MATMIC
2 (2-1	and the boar than the selection of animal an
ATTEN Y	@ FND - This directive indicates the end of source program.
10 1000	to printer part apprilate some standard appears
	3 FQU ⇒ <symbol> EQU <addrew spec=""></addrew></symbol>
om 1	18g: A EQUI 100: - A is assigned to address space
537700	and at bedrain me just to anone
E mann	Other Advanced Assembler Directives
Felosi	no storing to true starys and paint to
	9 ORIGIN O DROP MANA
	5 USING D LTORG.
	Christ start bank rante Commission of the
3.>	Find out addresses of variable using LC.
la Craha	Step 1: First identify all variables in your Program.
	Step 2: Replace all symbolic address with numeric address.
	Step3: Replace symbolic operates by maching operation codes-

	06 ko		UIACSO		LODEN S	Step (1)	Page No. 29 Date % 02	22	
	Assembl	y Instruction)		LC	Machine	code	
, 6	court for	0	101	di.	vil n	tometub	A9 A0183		
	D 12.0	READ	N 113			101)	09 0	113	
	- HBIOLOM	MOVER	BREG,	ONE	115	102)	04 2	115	
3	vonto /	movem	BRECK,			103)	05 2	116	
	AGAIN	MULT	BREG.			104)	03 2	116	
dat	Seturn (get	MOVER	CREG.	TERM	161)	105)	04 3	116	
10/1		ADD	CREG,	ONE	115	106)	01 3	115	
1	DANDASSILI	WOKEW	CRECT,	TER	m 114	107)	05 / 3	116	
	or rould	Comp	CREG,	N	11/3 10	108)	1,06 3	113	
		BC	LE,	AGA	IN	(101)	07 2	104	
	Ammaid	movem	BREG,	AESI	UT 114	100)	05 2	114	
	A polo	PRINT	RESULT	1147	ind tala	111)	10110	114	
		STOP				112)	00 0	006	
	N	20			e lon	113)	met 4		
	RESULT	DS	1 4		y reserved	114)			
	ONE	DC	(1'	y no o	unerated	115)			
	TERM	Ds	1		<u> </u>	116)	A Paralle		
		END	-n.l.d					The Late	
		The first							
	SYNO V	aniable Name	Address		4.> Des	ligh an	automata fo	r set of	
	1	N	113		all	Stri	nge of length	5-	
	2	RESULT	114		Ass	suming	Σ = d011	}	
	3	ONE	115		10	01=50			
	4	TERM	116		L= i	00000	0,00001,000	10,00011,	
								" 111113	
			KIAP (T. d.			1110		0,1	
			01	0, 1	0	.1.	0,1 0,	1 /	
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	- Property						C- 1	Dead State	
(1)		20 (21			c= 3	C=4	Final		
	Fig:	Automata for	w =5				C=5	c>5	

Marcall

	LC Madine cod		patrial the gr	A A A
5.>	Design an automata fo	r identifying	constants	and keywords
	11 2 10 (101		9939 t	elly/diait
	Identifiers and Reserved wi	ords in 1999	A3VOM	Charlette Charle
	letter = [a-z A-Z]	man start	letter	other of
	digit = [0-9]	MAT 2139.1	Youn !	
	Identifier = letter (let	*Cliciplys	ROVER	return (gd-token-colice
	10 100	740 0190	ma	name)
	1 · [get-token-code()] Searches	a tables to	check lif	
	deserved word or			
	(m) (m)		28	
	2 otherwise, it returns I	the integer dode	of the	IDENTIFIER token
1	with [name] contain	0		The state of the s
	token.		9012	
	& nome, is not	relevant for re	served words	4 4
	To the second se	1 Comment		TJURIA
	(34)	X	20	740
	Lan Lan		20	ma71
			049	
95 1	12 rd wtomoths no appear	A corbin	Smold Jakin	N. ME
	2 Hopel to sports no	811		
	Acutal = 2 painted	PH		
	3=101	311		
71100	A T GOOD , DESM, DOMEST	4 34	a buir	
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1	3			
1				

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21=12 bo