Roll no: PD-05 Aniruddha Shende Batch: D1



T.Y.B.Tech (CSE)

System Software and Compilers(SSC)

Lab Assignment No – 2

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ta	nel:-:	
		Subject: - SSC
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		GE (SEA WINE)
- 1		Lab Assignment No-2 (Study Writeup)
		Assignment Title: Design of Pass 2 of Two Pass Assembler.
		Tass //sseribuet.
		Aim: - Design suitable data structures &
	_ 19	implement Pass 2 of 2 Pass Assembler for
		pseudo machine.
		Objective: - Design suitable data structures &
		implement Pass/2 of 2 Pass Assembler for
		implement Pass 2 of 2 Pass Assembler for pseudo machine Subset should consist of
		ia few instructions from each category & few
	_	assembler directives.
		Theory:
	1.	Design specification of an Assembler:
	A-1 -1	Synthesis Phase
	_MWI.	Désign specification of an Assembler identifies
		the necessary information & design the suitable data structures to record the
		information. We also need to determine the
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	a manage for it.
	in the Synthesis Phase:-
	1) Oftain the machine code corresponding to
	@ Obtain the address of a memory operand
	From Symbol table 3 Synthesize the machine instruction.
2.	Design of a Two Pass Assembler:
Ans-2	Algorithm for Pass 2 Marine-code-buffer: area for constructing code for one statement
	Code_ara: area for assembling the target
	ode area address: contains address of code area.
	pooltab_ptr=1,
	2) While next street is not an END street
	(a) clear machine-code-buffer
	(b) It an LTORG stort
	(i) Process literals in LITTABLEPOOLTARE
7	LITTAB [POOLTAB [pooltab - ptr]] LITTAB [POOLTAB [assemble literals in machine code by the pooltab - ptr+1]-
	(11) SIZE = SIZE of memory reg for literals (111) podtal
	(c) It a START or ORIGIN start then (i) loc-contr = value specified in operand field
	(ii) Size=0
S Sc	ann(d) if a declaration strit mScanner www.mitwpu.edu.in



(i) It a DC stret then
Associate was set in machine-code-busin
ii) size = size of memory suggisted by DC/DS
strit.
() III
(i) Get operand address from SYMTAB or
177740
(ii) Assemble into in machine-code-buffer
(iii) size = size of instr
(f) It size <>0 then
is Many contents of machine coal - buffer it
the address code-area-addr+loc-ents
(ii) loc_entr = loc_entr +size.
3. Processing of END STMT
(a) Porton Hea 2(b) & 2(t)
(b) Write code area into output file.
3. Error Listing & Error Handling.
Ans:3 Semantic Errors (occurs due to aduplicate
dalination of humbols)
Juntax torrors Coccurs and its missing
commas, franchesis
Retarioned to Undefined variables, the
problem of Forward Referencing is handled
by a process called Back Patching.
* Input: Symbol Table, Intermediate code from
Scanned Pars of 2 Pass Assembler)
CamScanner

				MIT-WPU	Dr Vinterannih Kared MIT WORL UNIVERSI		
-	Symbol Ta	Ho:-					
	sym-id	sym-name	12.	m-addr	length		
	Squitation	A	102		1 9		
	2	LI	101		1		
	3	В	107		1		
	IC Code:	_					
	A ddress	Ins Mnemon	ic	Opl	Op2		
	Address (Lc)						
	_	(AD, 01)		_	(C,100)		
-)	100	(IS,04)		1. 0	(S, 1)		
	101	(IS,01)		2	(S, I)		
	102	(IS,04))	2	(S,3)		
4	_	AD,03		7	(S, 2)		
	101	(IS, 01)		/2	(S, I)		
1	102	(DL,O		/ -	(L, 5))	
	107		(DL, OI) /		(c, 5		
	108	(AD, C	-	. –	_		
/			2				
	Output: - N	Machine tra	nslati	on Object	t Progra	em) of	
1	the sou	uce Assemble	1-1	anguage	Progream	n_taken	
1	in Assig	Monent No.1.					
-	LCounter	Mnemonic		OP	A > 1	OP2	
=	7						
-	100	04		-		102	
-	101			1.02			
1-	102	04	117		2	107	
	anne With amScanner	04	± 1		2 www.mit	VPU.edu.in	

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	107	0 1	_	5		
_	801		-	-		
	Conclusion	on: Thus,	ur of	have the	Juccess 2 Pass	stully Assembles
•		:- JAW.				
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CamSo	d with anner					www.mitwpu.edu.in