

Gokhale Education Society's R. H. Sapat College of Engineering, Management Studies & Research, Nashik-422005 Department of Computer Engineering

Class: TE B Computer Name of Subject: SPOS (310251)

Semester: VI Subject Teacher: Mr. R.R.Chakre

Group No: 02

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Problem Statement:

Give all the data structures of macro assembler for any assembly program.

(MNT, MDT, PNTAB, EVNTAB, SSNTAB, KPDTAB, SSTAB, APTAB, EVTAB).

Data Structure of macro:

- 1.Macro Name Table (MNT):- Fields Name of macro, #PP(Number of positional parameters), #KP (Number of keyword parameters), MDTP (Macro Definition Table Pointer), KPDTP (Keywords Parameters Default Table Position).
- 2. Parameter Name Table (PNTAB):- Fields parameter name.
- 3. Keywords Parameters Default Table (KPDTAB):- Fields-parameter name, default value.
- 4. Macro Definition Table (MDT):- Model statements are stored in intermediate code form as: Opcode and operands.
- 5. EV Name Table(EVNTAB):- Fields EV Name
- 6. SS Name Table (SSNTAB):- Fields SS Name
- 7. A Sequencing Symbol Table (SSTAB):
 - Each entry in the table is a pair
 (<sequencing symbol name>,<MDT entry#>)
- 8. Actual Parameter Table (APTAB): APTAB is designed to hold the values of formal parameters during expansion of macro call.

 Each entry in the table is a pair (<formal parameter name>,<value>)
- 9. Expansion Time Variables Table(EVTAB):
 - Each entry in the table is a pair (<EV name>,<value>)

The value field of a pair is accessed when a pre-processor statement or model statement under expansion refers to an EV.

SPOS' PBL

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	(WHT)	MDT	PNTA	B EVI	VTAB		
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	PNTAB		- 6	UNTAL		SSNTI	
2	M	+		V		more	
3	N	+			-		
2	REG	1					
			2				
<	MNT						
	NAME	#PP	# kP	#EVI	MOIP.	KPDTP	SUTP
	CLEAR	2	7	1	1	1	1

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Give all datastructures of macro
assembler for any assembly program.
(MNT, MDT, PNTAB, EVNTAB, SSNTAB,
KPDTAB, SSTAB, APTAB, EVTAB).

Example:-

MACRO
CLEARMEM &X, &N, ® = AREG

LCL &M

&M

SET

MOVER

AREG, = 'O'

MORE MOVEM

& REG, &X + &M

&M

SET

AIF

C&M NEN). MORE

MEND

Macro call: CLEARMEM AREA, 10

· PNTAB

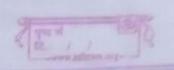
PNTAB_Ptr	Parameter	Name
1	×	18
2	N	
3	REG	

. EVNTAB

EV Name

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	· SSNTA	В	2 - 34	a ska		2023	
		55	NTAB-		SS	Name	
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	· MNT			a like			
	Name	# PP	# KP	# E V	2.5	TP EPDT	25TP
	· KPDTAB			unab:			
	KPDTAB_						value
	10	110		G	26	AREG	
	SSTAB				915		
	SSTAB_P		MDT	Entry	#		
2101	5		28				17
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							SHOT ON
	Francis Colored						
					th CamScanne		



· MDT

Ī	MDT_Ptr	LABEL	OPCODE	OPERAND
	25		LCL	(E, 1)
	26	[E,1]	SET	0 . /
	27		MOVER	CP, 3), = '0'
	28		movem	(P,3), (P,1)+(E,1)
	29	(E,1)	SET	CE. 1)+1
	30		AIF	((E,1)NE(P,2))(5)
	31		MEND	

· APTAB

APTAB_Ptr	Value
1	AREA
2	10
3	AREG

. EVTAB

EVTAB_Ptr	value
1	0

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Problem Statement:>
Give all data structures of macro
assembler tox any assembly program CMNT, MDT PNTAB.
assembler for any assembly program CMNT, MDT, PNTAB, EVNTAB, SSNTAB, KPD TAB, SSTAB, APTAB, EVTAB)
Examples -
in memory is a macko to increment the value stored
in memory word.
Magro defination
DETINGUOV)
Prototuce statement custons
Prototype statement syntax: <name _="" macro="" of=""> [< Formal parameter spec > []</name>
& < name - of - parameter > < parameter - type >]
The state of the s
Prototype
Mago MACKO Blatenbut
header INCR &MEM-VAL, &INC-VAL, & REG
MOVER & REG & MEM-VAL
HID AREG BINC-VAL
Macro MOVEM & REG & MEM_VAL
end] MEND

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	problem	state	ement -	an complete	
	Con	e all	data structures of	macro cosserribier	
			· · · · · · · · · · · · · · · · · · ·	11017	
	EUNTAB	, SSN	TAB, KPDTAB, SSTAB	APING (CO INS)	
	Example	2 -			
		AACRO	- 1 V 0.10 EC	-BREG	
	0	ECE	(by Eq 0), Ex	KLT	
10		CF	A DEC OX		
		OVER			
		101	& REG, LY		
	. EXIT I	IEND			
			EUNTAL	2 [-]	
15	PNTAB	X	Enlaring		
		7	Conto P	TIXI	
		REG			STD
			#PP #KP #EV	35 20	6
	MNT B	ECEC	2 1 0	33 20	0
20			1 1 1	2500	
	KPDTAB	20	PEG BREG	SSTAB 6 35	
	MPT	35	ALF (P12) EQ (
		36	MOVER (P13)1(1	3,1)	
25		37	MUL (P13) (P1	2)	191
23		38	(SII) MEND		
+		39			
+		40			
+		41			
-		- 11			11-14-
30					10

SPOSL PBL	Page No. Date 16 6 2021
	Name - KATHA MAHESH MAHAJAN. ROLINO - 10 Class - T.E-(B). PRNno - 717215005 SeatNo -
2] Problem Statement) assembly program.	→ give all data istructures of Macro assembler for any MNT, MDT, PNTAB, EVNTAB, SSNTAB, KPDTAB, SSTAB, APTAB, EVTAB)
(Assembly Program)	
CLEARMEM & T, & N	4 REG = AREU.
4M SET O. MOVER & REG = 'O' MORE MOVEM & REG &M SET & M+1	TAN SHAME AND THE AND
EM SET & M+1 ATF (RM MEN) MEND CLEARMEN AREA, 10	AND AD
B PNTAB X	3936 18 18341
REG	31 1

2 TEVNTAB M Jal
3 SSTAB MORE
1 MNT :- CLEARMEM 2 + HPP 2 + HEV 1 + HEV 1 MDTP 2.5
SSTAB 5
5) KPD TA B -: 5 5. 27] 10 REG AREG
$\frac{1}{2}$ MDT -: 25 (E, 1) SETO. 26 MOVER (K, 1) = '0' 27 MOVEM (K, 1)(P, 1) + (P+1) (S, 1) 28 (E, 1) SET (E, 1)+1 29 AJF (E, 1) NE(P, 1) (S, 1) 30 MEND
8 APTAB AREGI AREA 10