1

Design suitable data structures and implement pass-I of a two-pass assembler for pseudo-machine in Java using object oriented feature.

```
start 100
movr ax 05
mover bx 10
up: add ax bx
movem a ='5'
origin up
ltorg
movem b ='7'
ds a 02
dc b 10
end
```

2

Implement Pass-II of two pass assembler for pseudo-machine in Java using object oriented features. The output of assignment-1 (intermediate file and symbol table) should be input for this assignment.

(AD,1) (C,100) 100 (IS,5) (RG,1) (C,05) 101 (IS,5) (RG,2) (C,10) 102 (S,1) (IS,2) (RG,1) (RG,2) 103 (IS,6) (S,2) (L,1) 104 (IS,4) (RG,1) (S,1) 105 (AD,3) (C,102) 102 (DL,1) (C,5) 103 (IS,6) (S,3) (L,2) 104 (IS,6) (S,4) (L,3) 105 (DL,1) (C,8) 106 (DL,1) (C,8) 107 (IS,6) (S,2) (L,4) 108 (IS,6) (S,3) (L,5) 109 (DL,1) (C,02) 110 (DL,2) (C,10) 111 (DL,1) (C,09) 112 (S,5) (AD,4) (S,1) 113 (AD,2) (DL,1) (C,7) 114 (DL,1) (C,8)	SYMBOL ADDRESS up 102 a 109 b 110 c 111 next 102	LITERAL ADDRESS 5 102 8 105 8 106 7 113 8 114

3

Design suitable data structures and implement Pass-I of a two-pass macro-processor.

```
MACRO
INCR &X, &Y, &REG1 = AREG
MOVER &REG1, &X
ADD &REG1, &Y
MOVEM &REG1, &X
MEND
MACRO
DECR &A, &B, &REG2 = BREG
MOVER &REG2 ,&A
SUB &REG2, &B
MOVEM &REG2, &A
MEND
START 100
READ N1
READ N2
DECR N1, N2
INCR N1, N2
STOP
N1 DS 1
N2 DS 2
END
```

4	**The output of Pass-I (MNT, MDT and intermediate code file without any macro definitions) should be input for Pass-II. Implement Pass-II of 2 pass Macro**
	
	Input.txt
	MACRO
	INCR &X, &Y, &REG1
	MOVER &REG1, &X
	ADD &REG1, &Y
	MOVEM &REG1, &X
	MEND
	MACRO
	DECR &A, &B, &REG2
	MOVER &REG2, &A
	SUB &REG2, &B
	MOVEM &REG2, &A
	MEND
	START 100
	READ N1
	READ N2
	INCR N1, N2
	DECR N1, N3
	STOP
	N1 DS 1
	N2 DS 2
	N3 DS 1
	END
	
	MDT.txt
	INCR &X &Y &REG1 = AREG
	MOVER #3 #1
	ADD #3 #2
	MOVEM #3 #1
	MEND
	DECR &A &B &REG2 = BREG
	MOVER #6 #4
	SUB #6 #5
	MOVEM #6 #4
	MEND
	
	MNT.txt
	INCR 0 3
	DECR 5 3
	
	ARG.txt
	&X
	&Y
	&REG1 AREG
	&A
	&B
	&REG2 BREG

5	**Write a program to create a Dynamic Link Library for any mathematical operation and write an application program to test it. (Java Native Interface / Use VB or VC++) .** **Design a Paper Prototyping for any Banking Website or App.**
6	**Write a program to solve Classical Problems of Synchronization using Mutex and Semaphore (Reader Writer Problem)** **Design Paper Prototyping for any ERP system.**
7	**Write a program to simulate CPU Scheduling Algorithms: FCFS** **Process AT BT** **P1 10 2** **P2 0 10** **P3 8 4** **P4 5 5** **Design GUI using Python for student Registration Form.(Use Text ,Label,Checkbutton,List box etc)**
8	**Write a program to simulate CPU Scheduling Algorithms: SJF (Preemptive)** **Process AT BT** **P1 10 2** **P2 0 10** **P3 8 4** **P4 5 5** **Design Paper Prototyping for any Shopping App or Website.**
9	**Write a program to simulate CPU Scheduling Algorithms: SJF (Non-Preemptive)** **Process AT BT** **P1 10 2** **P2 0 10** **P3 8 4** **P4 5 5** **Design GUI using Python for Login Window.**

10	**Write a program to simulate CPU Scheduling Algorithms: Priority (Non-Preemptive).** **Process AT BT** **P1 10 2** **P2 0 10** **P3 8 4** **P4 5 5** **Design GUI using Python for online Quiz.(Use Text ,Label,Checkbutton, etc)**
11	**Write a program to simulate CPU Scheduling Algorithms: Priority (Non-Preemptive).** **Process AT BT** **P1 10 2** **P2 0 10** **P3 8 4** **P4 5 5** **Design GUI using Python for sign-up Window**
12	**Write a program to simulate CPU Scheduling Algorithms: Round Robin. (TQ=1 Sec)** **Process AT BT** **P1 10 2** **P2 0 10** **P3 8 4** **P4 5 5** **Design GUI using Python for customer Feedback Form about Food in Hotel .(Use Text ,Label,Checkbutton, etc)**
13	**Write a program to simulate Memory placement strategies – best fit, first fit.** **Design a GUI in Python of any screen for fund Tranfer/Transaction.**
14	**Write a program to simulate Memory placement strategies – best fit, worst fit.** **Design a GUI in python for Patient Registration Form in Hospital .(Use Text ,Label,Checkbutton,List box etc)**
15	**Write a program to simulate Page replacement algorithm. 1. FIFO** **Input reference String :- 2 3 2 1 5 2 4 5 3 2 5 2** **No. of frames are:- 3** **Design a GUI in python for Help screen of any App.**
16	**Write a program to simulate Page replacement algorithm. 2. OPTIMAL** **Input reference String :- 2 3 2 1 5 2 4 5 3 2 5 2** **No. of frames are:- 3** **Design a GUI in Python for Welcome screen.**
17	**Write a program to simulate Page replacement algorithm. 3. LRU** **Input reference String :- 2 3 2 1 5 2 4 5 3 2 5 2** **No. of frames are:- 3** **Design a GUI in python for Sports Academy Registration Form**
18	**Write a program to implement Deadlock Avoidance Algorithm** **Design GUI using Python for Cab/Auto Booking App**