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

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                      MDT.txt                                          MNT.txt                  ARG.txt
MACRO                          INCR   &X      &Y      &REG1 =         AREG       INCR   0     3          &X
INCR  &X, &Y,  &REG1                  MOVER         #3       #1                  DECR   5     3          &Y
MOVER  &REG1,  &X                     ADD    #3     #2                                                  &REG1  AREG
ADD       &REG1,   &Y                 MOVEM         #3       #1                                         &A
MOVEM  &REG1,    &X                   MEND                                                              &B
MEND                           DECR   &A      &B      &REG2 =         BREG                               &REG2  BREG
MACRO                                 MOVER         #6       #4
DECR  &A, &B,  &REG2                   SUB    #6     #5
MOVER  &REG2,  &A                     MOVEM         #6       #4
SUB      &REG2,   &B                  MEND
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
```

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) readwriterprogram Design Paper Prototyping for any ERP system.

7	Write a program to simulate CPU Scheduling Algorithms: FCFS Process AT BT fcfs_scheduling 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) studentregi

8	Write a program to simulate CPU Scheduling Algorithms: SJF (Preemptive) Process AT BT sfj_preemptive 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 sfj_nonpreempt P1 10 2 P2 0 10 P3 8 4 P4 5 5 login 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)	prioritynonpreempti onlinequiz
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	prioritynonpreempti sign up
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)	round robi hotel
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.	MemoryPlacemer fundtransfer
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)	MemoryPlacemer patientform
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.	fifopagereplacement help
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.	optimalpagereplaceme welcome
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	lru_pagereplacement sportregistration
18	Write a program to implement Deadlock Avoidance Algorithm Design GUI using Python for Cab/Auto Booking App	bankersalgorithm cab