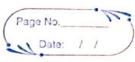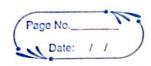Assignment 13

* Title:
Data structures using JAVA

* Problem Statements:
"Write a Java program for implementation of different data structures using java collection libraries (STL) atleast 5 data structures are used to design a suitable application.

* Objectives:
1) To understand implementation of different data structures using java.
2) To understand standard toolkit library.

* Outcome:
I will be able to implement different datastructures using standard toolkit library of java.

* Data Structures & operations performed
1. Linked list
→ Insert first
→ Insert last
→ Insert middle
→ Delete first
→ Delete last
→ Delete middle
→ Display

2. Stack:
→ Push
→ Pop
→ display top
→ Check for empty stack
→ Display all elements

3. Queue (priority)
→ Push (Insert)
→ Delete
→ display all elements.

4. Dequeue

→ Add first
→ Add last
→ Display head
→ display tail
→ Remove first.
→ Remove last
→ Display all elements

5. Hash set

→ Add element
→ Remove element
→ display whole
→ display size.

* Test Cases:

8:

	Description	I/p	o/p	Result
1.	Stack	Insert (2,4,6,8) pop 2 times	4 2	Yes
2.	Queue	Enqueue 1,2,3,4,5 Dequeue 2 times	3 4 5	Yes
3.	Array list	Add (10,20,30) Remove (20)	10,30	Yes

* Conclusion:

We have successfully studied & implemented data structures using JAVA library collection