Assignment-3

1.Stack implementation

```
package Assignment3;
import java.util.*;
public class StackDataStructure {
   static int top=-1;
   static int[] stack=new int[100];
     public static void main(String[] args) {
          boolean flag=true;
          System.out.println("1.Push 2.pop 3.display
4.exit");
          while(flag) {
               System.out.println("Enter choice");
               Scanner scan=new Scanner(System.in);
               int n=scan.nextInt();
               switch(n) {
               case 1:push();
                   break;
               case 2:pop();
                    break;
               case 3:display();
                     break;
               case 4:flag=false;
                      break;

          }
          }
     }
     public static void push() {
          System.out.println("Enter element");
          Scanner scan=new Scanner(System.in);
          int ele=scan.nextInt();
          if(top==-1) {
               stack[0]=ele;
               top++;
          }
          else {
```

```
                top++;
                stack[top]=ele;
           }
      }
      public static void pop() {
           stack[top]=0;
           top--;
      }
      public static void display() {
           for(int i=top;i>=0;i--) {
                System.out.println(stack[i]);
           }
      }

}
```

Output

```
1.Push 2.pop 3.display 4.exit
Enter choice
1
Enter element
5
Enter choice
1
Enter element
6
Enter choice
1
Enter element
7
Enter choice
1
Enter element
8
Enter choice
2
Enter choice
```

```
3
7
6
5
Enter choice
4
```

2.Queue implementation

```
package Assignment3;
import java.util.*;
public class Queue {
    static int top=-1;
    static int front=0;
    static int rear=-1;
    static int q[]=new int[100];
     public static void main(String[] args) {
          System.out.println("1.enquee 2.dequee 3.display
4.exit");
          boolean flag=true;
          while(flag) {
               System.out.println("Enter choice");
               Scanner scan=new Scanner(System.in);
               int n=scan.nextInt();
               switch(n) {
               case 1:enquee();
                      break;
               case 2:dequee();
                      break;
               case 3:display();
                      break;
               case 4:flag=false;
                      break;
               }
          }

     }
     public static void enquee() {
          System.out.println("enter element");
          Scanner scan=new Scanner(System.in);
          int ele=scan.nextInt();
          rear++;
          q[rear]=ele;
          top++;
     }
     public static void dequee() {
```

```
            q[rear]=0;
            rear--;
            top--;
      }
      public static void display() {
            for(int i=0;i<=top;i++) {
                  System.out.println(q[i]);
            }
      }

}
```

Output

```
1.enquee 2.dequee 3.display 4.exit
Enter choice
1
enter element
5
Enter choice
1
enter element
6
Enter choice
1
enter element
7
Enter choice
1
enter element
8
Enter choice
2
Enter choice
3
5
6
7
Enter choice
4
```