WEEK - 1

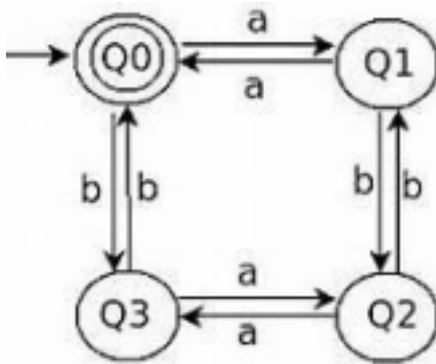## Program 1:

Implement a language recogniser which accepts set of all strings over the alphabet ∑={a,b} containing an even number of a's and an even number of b's.

Description:

The acceptable strings of the language are ε(Null string), aa, bb, abba, babbab etc.

Deterministic Finite Automata for the given language is given below

$M = (Q, \Sigma, \delta, Q0, F)$

where Q = Set of all states ={Q0,Q1,Q2,Q3}

Σ = Input Alphabet = {a,b}

Start state is Q0
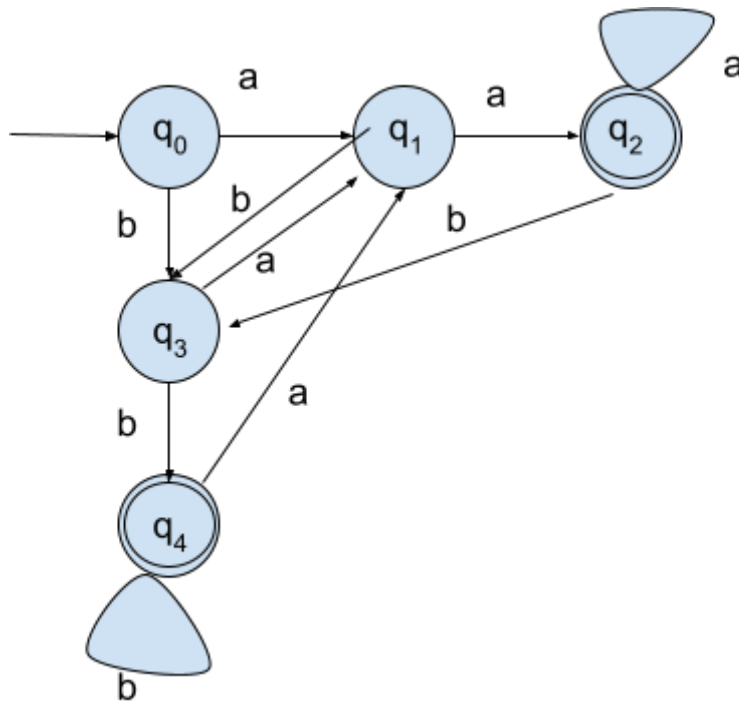
F = Set of all final States = {Q_0}

Test Cases:

Input	Expected Output
aaaabbbb	String accepted
abbbab	String accepted
aaabb	String not accepted
a	String not accepted
absd	Invalid token

Program 2:

Implementation of Language recognizer for a set of all strings ending with two symbols of same type.

Description:

The acceptable strings of the language are aa, abb, abbaa, babbabb etc.

$M = (Q,,\Sigma,\delta,Q0,F)$

where

Q = Set of all states
= {Q0,Q1,Q2,Q3,Q4}

Σ = Input Alphabet = {a,b}

Start state is Q0

F =Set of all final States
= {Q2, Q4}

Test Cases:

Input	Expected Output
abb	String accepted
ababb	String accepted
aaabb	String not accepted
ba	String not accepted
absd	Invalid token