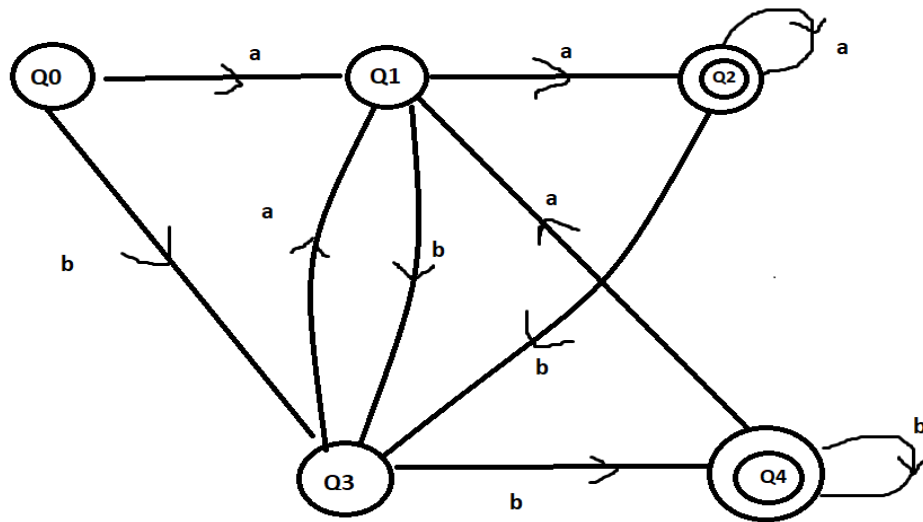**2.) Implementation of Language recognizer for set of all strings ending with two symbols of same type.**

Description : Acceptable strings are ε,abaa,aaaa,bbaa,bbbb,abbb,etc.

DFA for the language is below-

DFA X=(Q,∑,δ,Q0,F) Where,

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

∑=Input Alphabet={a,b},

Start state is Q0

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

And the transitions are defined in the transition diagram.

Algorithm: Language recognizer

Input:

    input //input string

Output:

    Algorithm prints a message

    "String accepted": If the input is acceptable by the language,

    "String not accepted" otherwise,

    "Invalid token": If the input string contains symbols other than input.

Method:

state=0 //initial state

while((current=input[i++])!='\0'){

    switch(state)

```
        case 0: if(current=='a')        state=1;
                else if(current=='b')    state=3;
                else
                    Print "Invalid token" ; exit;
        case 1: if(current=='a')         state=2;
                else if(current=='b')  state=3;
                else
                    Print "Invalid token" ; exit;
        case 2: if(current=='a')         state=2;
                else if(current=='b')  state=3;
                else
                     Print "Invalid token" ; exit;
        case 3: if(current=='a')      state=1;
                else if(current=='b') state=4;
                else
                    Print "Invalid token" ; exit;
        case 4: if(current=='a')      state=1;
                else if(current=='b') state=4;
                else
                    Print "Invalid token" ; exit;
            end switch
        end while
//Print output
if(state==2 || state==4)
     Print "String accepted"
else
     Print "String not accepted"
```