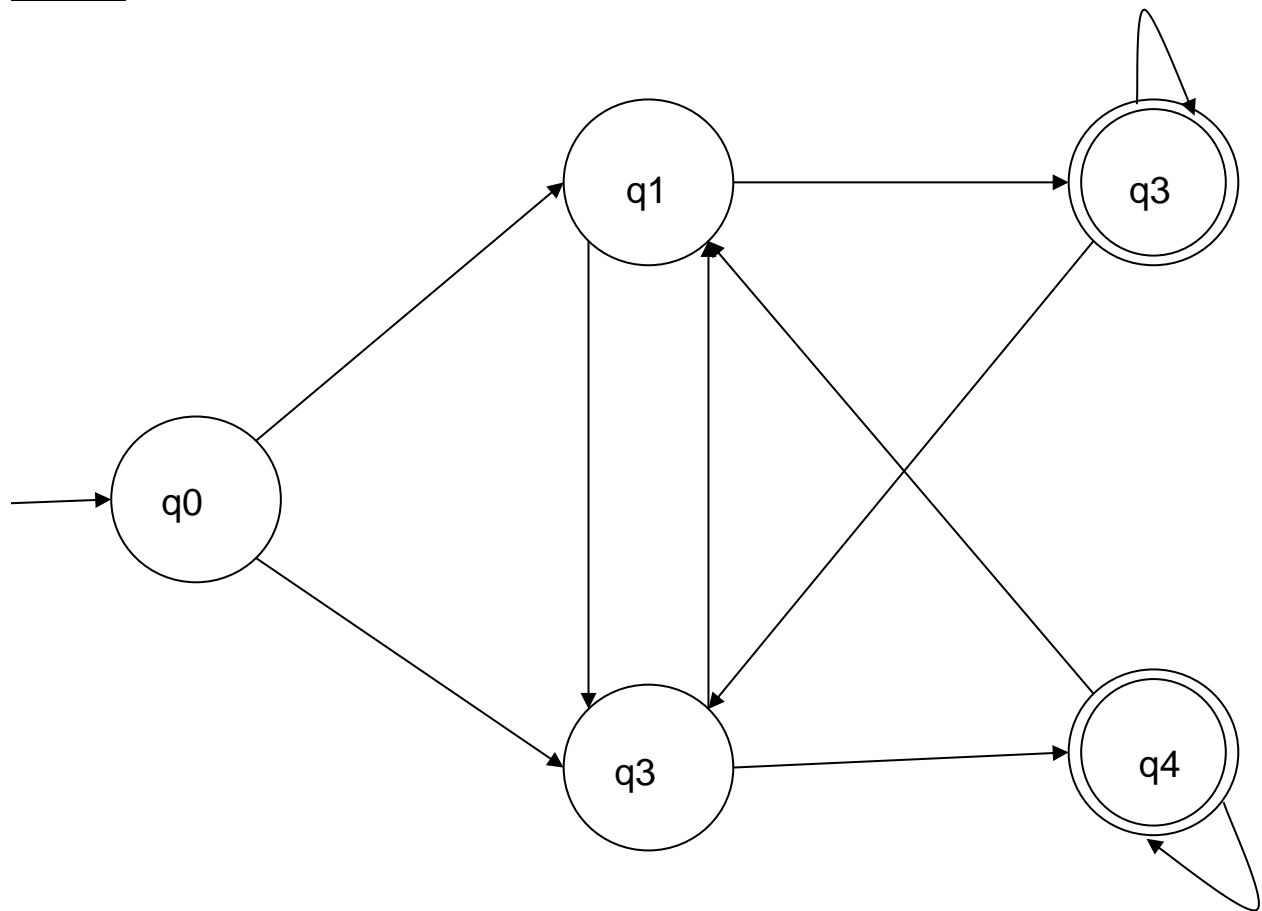


DFA:



DFA $M=(Q,\Sigma,\delta,Q_0,F)$ Where

Q =Set of all states $=\{q_0,q_1,q_2,q_3,q_4\}$

Σ =Input Alphabet $=\{a,b\}$,

Start state is q_0

F =Set of all final States $=\{q_3,q_4\}$

And the transitions are defined in the transition diagram

CODE:

```
#include<stdio.h>
void main()
{
    int state=0,i=0;
    char token,input[20];
    printf("Enter input string \t :");
    scanf("%s",input);
    //printf("Given string is : %s");

    while((token=input[i++])!='\0')
    {
        // printf("current token : %c \n",token);
        switch(state)
        {
            case 0: if(token=='a')
                    state=1;
                    else if(token=='b')
                    state=3;
                    else
                    {
                        printf("Invalid token");
                        exit(0);
                    }
                    break;
            case 1: if(token=='a')
                    state=2;
                    else if(token=='b')
                    state=3;
                    else
                    {
                        printf("Invalid token");
                        exit(0);
                    }
                    break;
            case 2: if(token=='a')
                    state=1;
                    else if(token=='b')
                    state=3;
                    else
                    {
                        printf("Invalid token");
                        exit(0);
                    }
                    break;
            case 3: if(token=='a')
                    state=1;
                    else if(token=='b')
                    state=3;
                    else
                    {
                        printf("Invalid token");
                        exit(0);
                    }
                    break;
        }
    }
}
```

```

    }

    break;
case 2: if(token=='a')
        state=2;
    else if(token=='b')
        state=3;
    else
    {
        printf("Invalid token");
        exit(0);
    }
    break;
case 3: if(token=='a')
        state=1;
    else if(token=='b')
        state=4;
    else
    {
        printf("Invalid token");
        exit(0);
    }
    break;
case 4: if(token=='a')
        state=1;
    else if(token=='b')
        state=4;
    else
    {
        printf("Invalid token");
        exit(0);
    }
    break;
}
// printf("state = %d ",state);

```

```

}
if(state==4 || state==2 )
    printf("\n\nString accepted\n\n");
else
    printf("\n\nString not accepted\n\n");
}

```

OUTPUT:

INPUT	EXPECTED OUTPUT
bbaa	String accepted
ababaabbbaa	String accepted
baabba	String not accepted
bbbbaaaba	String not accepted
babccd	Invalid Token