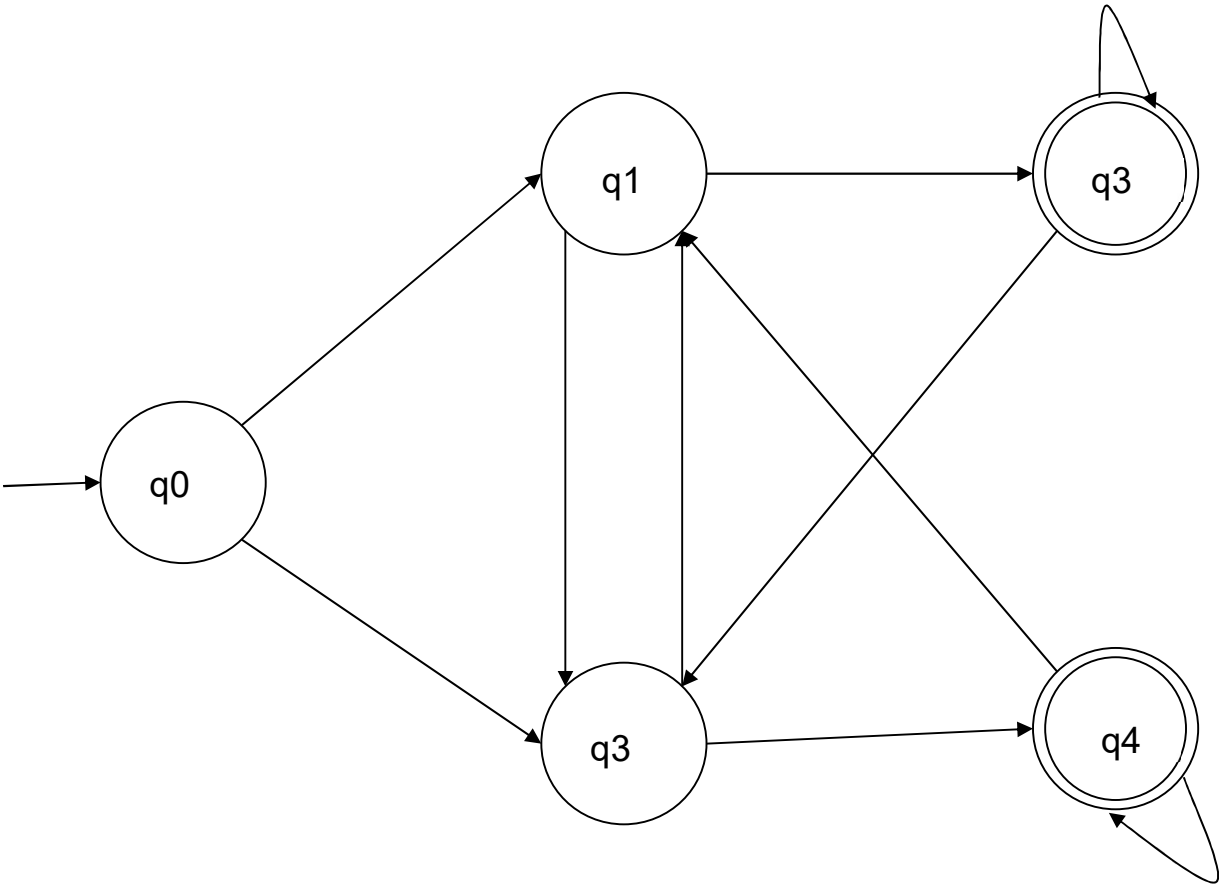
DFA:



DFA M=(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={ q3,q4}

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=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
abb	String accepted
ababaa	String accepted
abba	String not accepted
abaaba	String not accepted
abaa	String accepted