1. Implementation of Language recognizer for set of all strings over input alphabet ∑={a,b} containing even number of a's and even number of b's.

```c
#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=2;
            else
            {
                printf("Invalid token");
                exit(0);
            }
            break;
        case 1: if(token=='a')
                state=0;
            else if(token=='b')
                state=3;
            else
```

```c
                        {
                            printf("Invalid token");
                            exit(0);
                        }

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

```c
    else
        printf("\n\nString not accepted\n\n");
}
```