

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

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

```

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

```

#include<stdio.h>
void main()
{
    int state=0,i=0;
    char current,input[20];
    printf("Enter input string \t :");
    scanf("%s",input);
    while((current=input[i++])!='\0')
    {
        switch(state)
        {
            case 0:
                if(current=='a')
                    state=1;
                else if(current=='b')
                    state=3;
                else

```

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

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

}

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