**COMPILER DESIGN LAB-1:**

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1. Write a program in C that recognizes the following languages.

a. Set of all strings over binary alphabet containing even number of 0’s and even

number of 1’s.

b. Lab Assignment: Set of all strings ending with two symbols of the same type.

Program-1:

#include<stdio.h>

#include<stdlib.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=='0')

state=1;

else if(token=='1')

state=2;

else

{

printf("Invalid token");

exit(0);

}

break;

case 1: if(token=='0')

state=0;

else if(token=='1')

state=3;

else

{

printf("Invalid token");

exit(0);

}

break;

case 2: if(token=='0')

state=3;

else if(token=='1')

state=0;

else

{

printf("Invalid token");

exit(0);

}

break;

case 3: if(token=='0')

state=2;

else if(token=='1')

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");

}

OUTPUTS:

Test Cases

Case-1:

Enter input string :0011

String accepted

Case-2:

Enter input string :0011

String accepted

Case-3:

Enter input string :0011

String accepted

Case-4:

Enter input string :000

String not accepted

Case-5:

Enter input string :0123

Invalid token

Program-2:

Written in python

<https://onlinegdb.com/m8oUpGje6>

print("Enter your input in the form of binary string:")

a=str(input())

c=a[-1]

d=a[-2]

if(c == d):

print("String Accepted")

else:

print("String Not Accepted")

Test Cases:

Case-1:

Enter your input in the form of binary string:

001100

String Accepted

Case-2:

Enter your input in the form of binary string:

001010

String Not Accepted

Case-3:

Enter your input in the form of binary string:

111111

String Accepted