**//S-R FLIP FLOP**

#include <stdio.h>

#include <stdbool.h>

int main() {

bool S, R, Q, Q\_bar;

printf("Enter S and R values (0 or 1): ");

scanf("%d %d", &S, &R);

// Check for invalid input

if ((S == 1 && R == 1) || (S == 0 && R == 0)) {

printf("Invalid input: S and R cannot both be 1 or 0.\n");

return 1;

}

// Implement S-R flip-flop

if (S == 1 && R == 0) {

Q = 1;

Q\_bar = 0;

} else if (S == 0 && R == 1) {

Q = 0;

Q\_bar = 1;

} else {

printf("Invalid input: S and R cannot both be 1 or 0.\n");

return 1;

}

// Output Q and Q\_bar values

printf("Q = %d, Q\_bar = %d\n", Q, Q\_bar);

return 0;

}

**// J-K FLIP-FLOP**

#include <stdio.h>

typedef char bit;

bit jk(bit J,bit K,bit Q)

{

return J&~(Q)|Q&~(K);

}

int main()

{

int i,j,k,a,res=0;

int x,y,z;

char b;

printf("1.Truth Table of JK flip flop");

printf("\n2.I/O operation\n");

printf("Enter your choice: ");

scanf("%d",&a);

switch(a)

{

case 1:

printf("J K Q(t) | Q(t+1)\n");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

for(k=0;k<2;k++)

{

res=jk(i,j,k);

printf("%d %d %d |",i,j,k);

printf(" %d\n",res);

}

}

}

break;

case 2:

printf("Enter the value of J,K,Q(t):");

scanf("%d%d%d",&x,&y,&z);

res=jk(x,y,z);

printf("Q(t+1)= %d\n\n",res);

break;

default:

printf("invalid input");

}

printf("do you want to continue(Y/N):");

scanf(" %c",&b);

if(b=='Y'||b=='y')

{

main();

}

else

{

return 0;

}

}