**PROJECT-1**

**NUMBER SHIFTING GAME**

#include <stdio.h>

#include<stdlib.h>

#include<conio.h>

#define keyUp 72

#define keyDown 80

#define keyLeft 75

#define keyRight 77

int main()

{

char ch,check,str[30];

int i,j,k=1,x=1,y=3,p=4,temp3,min,max,m,flag1=0,q,move,g,t[20],a[4][4],b[4][4]={{1,2,3,4},{5,6,7,8},{9,10,11,12},{13,14,15}},count=0,flag,temp,temp1,temp2;

label:

system("cls");

x=1;

y=3;

p=4;

count=0;

flag=-1;

q=0;

printf("Player Name: ");

if(flag1==2)

getchar();

gets(str);

system("cls");

printf(" RULE OF THIS GAME\n\n");

printf("1.You can move only 1 step at a time by arrow key\n");

printf(" Move Up :by Up arrow key\n");

printf(" Move Down :by Down arrow key\n");

printf(" Move Left :by Left arrow key\n");

printf(" Move Right:by Right arrow key\n\n");

printf("2.you can move number at empty position only\n\n");

printf("3.For each valid move : your total number of move will decreased by 1\n\n");

printf("4.Wining Situation : number in 4\*4 matrix should be in order from 1 to 15\n\n");

printf(" Wining Situation\n\n");

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

if(i==3&&j==3)

printf("%c",32);

else

{

if(b[i][j]>9)

printf(" %d ",b[i][j]);

else

printf(" %d ",b[i][j]);

}

}

printf("\n");

}

printf("5.you can exit the game at any time by pressing 'E'\n");

printf("So Try to win in minimum no of move\n\n");

printf(" Happy Gaming , Good Luck\n\n");

printf("Enter any key to start.....");

getch();

min=1;

max=min+15;

srand(time(0));

for(i=0;i<=14;i++)

{

g=10;

if(i>9)

g=100;

temp3=rand()%g+min;

for(j=0;j<=i-1;j++)

{

if(temp3==t[j])

break;

}

if(i==j)

{

if(temp3<16)

{

t[i]=temp3;

}

else

i--;

}

else

i--;

}

q=0;

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

a[i][j]=t[q];

q++;

}

}

move=500;

system("cls");

printf("Player Name %s , Move Remaining %d\n",str,move);

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

if(i==(p-x)&&j==(6-y))

printf(" ");

else

{

if(a[i][j]>9)

printf(" %d ",a[i][j]);

else

printf(" %d ",a[i][j]);

}

}

printf("\n");

}

move=500;

while(move!=0)

{

printf("you prressed:\n");

ch=getch();

switch(ch)

{

case keyRight:temp1=p-x;

temp2=6-y;

y++;

temp=a[p-x][6-y];

a[p-x][6-y]=a[temp1][temp2];

a[temp1][temp2]=temp;

move--;

break;

case keyDown:temp1=p-x;

temp2=6-y;

x++;

temp=a[p-x][6-y];

a[p-x][6-y]=a[temp1][temp2];

a[temp1][temp2]=temp;

move--;

break;

case keyLeft:temp1=p-x;

temp2=6-y;

y--;

temp=a[p-x][6-y];

a[p-x][6-y]=a[temp1][temp2];

a[temp1][temp2]=temp;

move--;

break;

case keyUp:temp1=p-x;

temp2=6-y;

x--;

temp=a[p-x][6-y];

a[p-x][6-y]=a[temp1][temp2];

a[temp1][temp2]=temp;

move--;

break;

case ('E'):exit(1);

}

system("cls");

printf("Player Name: %s , Move Remaining: %d\n",str,move);

for(i=0;i<4;i++)

{

for(j=0;j<4;j++)

{

if(i==(p-x)&&j==(6-y))

printf(" ");

else

{

if(a[i][j]>9)

printf(" %d ",a[i][j]);

else

printf(" %d ",a[i][j]);

}

}

printf("\n");

}

count=0;

for(i=0;i<4;i++)

{

m=4;

if(i==3)

m=3;

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

{

if(a[i][j]==b[i][j])

count++;

}

}

if(count==15)

{

flag=0;

break;

}

}

{

if(move==0)

{

printf("You Lost\n");

printf("please pressed 'y'(play again) and 'e'(end game)");

scanf("%c",&check);

}

else if(flag==0)

{

printf("You Won!!!\n");

printf("please pressed 'y'(play again) and 'e'(end game)");

scanf("%c",&check);

}

}

if(check=='y')

{

flag1=2;

goto label;

}

else

exit(0);

return 0;

}