int p1,p2,p3,p4,p5,p6,p7,p8,p9;

int analog1,analog2,analog3;

int gameBoard [3][3] = {{0,0,0},{0,0,0},{0,0,0}};

int blueLED = 11, redLED = 12;

bool turn;

bool playerTurn;

void setup()

{

pinMode(0, OUTPUT);

pinMode(1, OUTPUT);

pinMode(2, OUTPUT);

pinMode(3, OUTPUT);

pinMode(4, OUTPUT);

pinMode(5, OUTPUT);

pinMode(6, OUTPUT);

pinMode(7, OUTPUT);

pinMode(8, OUTPUT);

pinMode(9, OUTPUT);

pinMode(10, OUTPUT);

pinMode(11, OUTPUT);

pinMode(12, OUTPUT);

pinMode(13, OUTPUT);

turn = 1;

playerTurn = true;

}

void loop()

{

if(turn == 0) { digitalWrite(11, HIGH); } else { digitalWrite(11, LOW); }

if(turn == 1) { digitalWrite(12, HIGH); } else { digitalWrite(12, LOW); }

while(playerTurn)

{

getInput();

}

displayBoard();

checkForWin();

changeTurns();

playerTurn = true;

}

void displayBoard()

{

for(int i=0;i<3;i++)

{

for(int j=0;j<3;j++)

{

if(gameBoard[i][j]==1)

{

if((i+1+j\*3)%3==1)

{

digitalWrite(13,HIGH);

digitalWrite(1,LOW);

digitalWrite(0,LOW);

}

else if ((i+1+j\*3)%3==2)

{

digitalWrite(13,LOW);

digitalWrite(1,HIGH);

digitalWrite(0,LOW);

}

else

{

digitalWrite(13,LOW);

digitalWrite(1,LOW);

digitalWrite(0,HIGH);

}

if((i+1+j\*3)<=3)

{

digitalWrite(7,LOW);

digitalWrite(6,HIGH);

digitalWrite(5,HIGH);

}

else if((i+1+j\*3)<=6)

{

digitalWrite(7,HIGH);

digitalWrite(6,LOW);

digitalWrite(5,HIGH);

}

else if((i+1+j\*3)<=9)

{

digitalWrite(7,HIGH);

digitalWrite(6,HIGH);

digitalWrite(5,LOW);

}

}

else if(gameBoard[i][j]==2)

{

if((i+1+j\*3)%3==1)

{

digitalWrite(2,HIGH);

digitalWrite(3,LOW);

digitalWrite(4,LOW);

}

else if ((i+1+j\*3)%3==2)

{

digitalWrite(2,LOW);

digitalWrite(3,HIGH);

digitalWrite(4,LOW);

}

else

{

digitalWrite(2,LOW);

digitalWrite(3,LOW);

digitalWrite(4,HIGH);

}

if((i+1+j\*3)<=3)

{

digitalWrite(7,LOW);

digitalWrite(6,HIGH);

digitalWrite(5,HIGH);

}

else if((i+1+j\*3)<=6)

{

digitalWrite(7,HIGH);

digitalWrite(6,LOW);

digitalWrite(5,HIGH);

}

else if((i+1+j\*3)<=9)

{

digitalWrite(7,HIGH);

digitalWrite(6,HIGH);

digitalWrite(5,LOW);

}

}

}

}

}

void getInput()

{

digitalWrite(10,HIGH);

analog1 = analogRead(A5);

analog2 = analogRead(A4);

analog3 = analogRead(A3);

if (analog1 > 500)

{

p1 = 1;

}

else

{

p1 = 0;

}

if (analog2 > 500)

{

p4 = 1;

}

else

{

p4 = 0;

}

if (analog3 > 500)

{

p7 = 1;

}

else

{

p7 = 0;

}

digitalWrite(10, LOW);

digitalWrite(9, HIGH);

analog1 = analogRead(A5);

analog2 = analogRead(A4);

analog3 = analogRead(A3);

if (analog1 > 500)

{

p2 = 1;

}

else

{

p2 = 0;

}

if (analog2 > 500)

{

p5 = 1;

}

else

{

p5 = 0;

}

if (analog3 > 500)

{

p8 = 1;

}

else

{

p8 = 0;

}

digitalWrite(9, LOW);

digitalWrite(8, HIGH);

analog1 = analogRead(A5);

analog2 = analogRead(A4);

analog3 = analogRead(A3);

if (analog1 > 500)

{

p3 = 1;

}

else

{

p3 = 0;

}

if (analog2 > 500)

{

p6 = 1;

}

else

{

p6 = 0;

}

if (analog3 > 500)

{

p9 = 1;

}

else

{

p9 = 0;

}

checkForTooManyButtons();

convertToMoves();

playerTurn = false;

}

void checkForTooManyButtons()

{

if(p1 + p2 + p3 + p4 + p5 + p6 + p7 + p8 + p9 > 1)

{

nullAll();

digitalWrite(11, HIGH);

digitalWrite(12, HIGH);

delay(1000);

digitalWrite(11, LOW);

digitalWrite(12, LOW);

delay(1000);

digitalWrite(11, HIGH);

digitalWrite(12, HIGH);

delay(1000);

digitalWrite(11, LOW);

digitalWrite(12, LOW);

delay(1000);

digitalWrite(11, HIGH);

digitalWrite(12, HIGH);

delay(1000);

digitalWrite(11, LOW);

digitalWrite(12, LOW);

getInput();

}

}

void changeTurns()

{

if(p1 + p2 + p3 + p4 + p5 + p6 + p7 + p8 + p9 == 1)

{

if(turn == 1)

{

turn = 0;

}

else

{

turn = 1;

}

}

}

void convertToMoves()

{

if (turn == 0)

{

if (p1 == 1)

{

if(gameBoard[0][0] != 0)

{

nullAll();

getInput();

}

gameBoard[0][0] = 1;

}

else if (p2 == 1)

{

if(gameBoard[0][1] != 0)

{

nullAll();

getInput();

}

gameBoard[0][1] = 1;

}

else if (p3 == 1)

{

if(gameBoard[0][2] != 0)

{

nullAll();

getInput();

}

gameBoard[0][2] = 1;

}

else if (p4 == 1)

{

if(gameBoard[1][0] != 0)

{

nullAll();

getInput();

}

gameBoard[1][0] = 1;

}

else if (p5 == 1)

{

if(gameBoard[1][1] != 0)

{

nullAll();

getInput();

}

gameBoard[1][1] = 1;

}

else if (p6 == 1)

{

if(gameBoard[1][2] != 0)

{

nullAll();

getInput();

}

gameBoard[1][2] = 1;

}

else if (p7 == 1)

{

if(gameBoard[2][0] != 0)

{

nullAll();

getInput();

}

gameBoard[2][0] = 1;

}

else if (p8 == 1)

{

if(gameBoard[2][1] != 0)

{

nullAll();

getInput();

}

gameBoard[2][1] = 1;

}

else if (p9 == 1)

{

if(gameBoard[0][0] != 0)

{

nullAll();

getInput();

}

gameBoard[2][2] = 1;

}

}

else

{

if (p1 == 1)

{

if(gameBoard[0][0] != 0)

{

nullAll();

getInput();

}

gameBoard[0][0] = 2;

}

else if (p2 == 1)

{

if(gameBoard[0][1] != 0)

{

nullAll();

getInput();

}

gameBoard[0][1] = 2;

}

else if (p3 == 1)

{

if(gameBoard[0][2] != 0)

{

nullAll();

getInput();

}

gameBoard[0][2] = 2;

}

else if (p4 == 1)

{

if(gameBoard[1][0] != 0)

{

nullAll();

getInput();

}

gameBoard[1][0] = 2;

}

else if (p5 == 1)

{

if(gameBoard[1][1] != 0)

{

nullAll();

getInput();

}

gameBoard[1][1] = 2;

}

else if (p6 == 1)

{

if(gameBoard[1][2] != 0)

{

nullAll();

getInput();

}

gameBoard[1][2] = 2;

}

else if (p7 == 1)

{

if(gameBoard[2][0] != 0)

{

nullAll();

getInput();

}

gameBoard[2][0] = 2;

}

else if (p8 == 1)

{

if(gameBoard[2][1] != 0)

{

nullAll();

getInput();

}

gameBoard[2][1] = 2;

}

else if (p9 == 1)

{

if(gameBoard[2][2] != 0)

{

nullAll();

getInput();

}

gameBoard[2][2] = 2;

}

}

}

void nullAll()

{

p1 = 0;

p2 = 0;

p3 = 0;

p4 = 0;

p5 = 0;

p6 = 0;

p7 = 0;

p8 = 0;

p9 = 0;

}

void checkForWin()

{

int sum;

if(gameBoard[0][0] == gameBoard[0][1] && gameBoard[0][1] == gameBoard[0][2])

{

sum = gameBoard[0][0] + gameBoard[0][1] + gameBoard[0][2];

if(sum != 0)

{

blinkBoard();

}

}

else if(gameBoard[1][0] == gameBoard[1][1] && gameBoard[1][1] == gameBoard[1][2])

{

sum = gameBoard[1][0] + gameBoard[1][1] + gameBoard[1][2];

if(sum != 0)

{

blinkBoard();

}

}

else if(gameBoard[2][0] == gameBoard[2][1] && gameBoard[2][1] == gameBoard[2][2])

{

sum = gameBoard[2][0] + gameBoard[2][1] + gameBoard[2][2];

if(sum != 0)

{

blinkBoard();

}

}

else if(gameBoard[0][0] == gameBoard[1][0] && gameBoard[1][0] == gameBoard[2][0])

{

sum = gameBoard[0][0] + gameBoard[1][0] + gameBoard[2][0];

if(sum != 0)

{

blinkBoard();

}

}

else if(gameBoard[0][1] == gameBoard[1][1] && gameBoard[1][1] == gameBoard[2][1])

{

sum = gameBoard[0][0] + gameBoard[1][0] + gameBoard[2][0];

if(sum != 0)

{

blinkBoard();

}

}

else if(gameBoard[0][2] == gameBoard[1][2] && gameBoard[1][2] == gameBoard[2][2])

{

sum = gameBoard[0][2] + gameBoard[1][2] + gameBoard[2][2];

if(sum != 0)

{

blinkBoard();

}

}

else if(gameBoard[0][0] == gameBoard[1][1] && gameBoard[1][1] == gameBoard[2][2])

{

sum = gameBoard[0][0] + gameBoard[1][1] + gameBoard[2][2];

if(sum != 0)

{

blinkBoard();

}

}

else if(gameBoard[0][2] == gameBoard[1][1] && gameBoard[1][1] == gameBoard[2][0])

{

sum = gameBoard[0][2] + gameBoard[1][1] + gameBoard[2][0];

if(sum != 0)

{

blinkBoard();

}

}

}

void clearBoard()

{

// red ones

digitalWrite(0, LOW);

digitalWrite(1, LOW);

digitalWrite(13, LOW);

//blue ones

digitalWrite(2, LOW);

digitalWrite(3, LOW);

digitalWrite(4, LOW);

}

void blinkBoard()

{

for (int i = 1; i <= 3; i++)

{

clearBoard();

delay(500);

displayBoard();

delay(500);

}

}