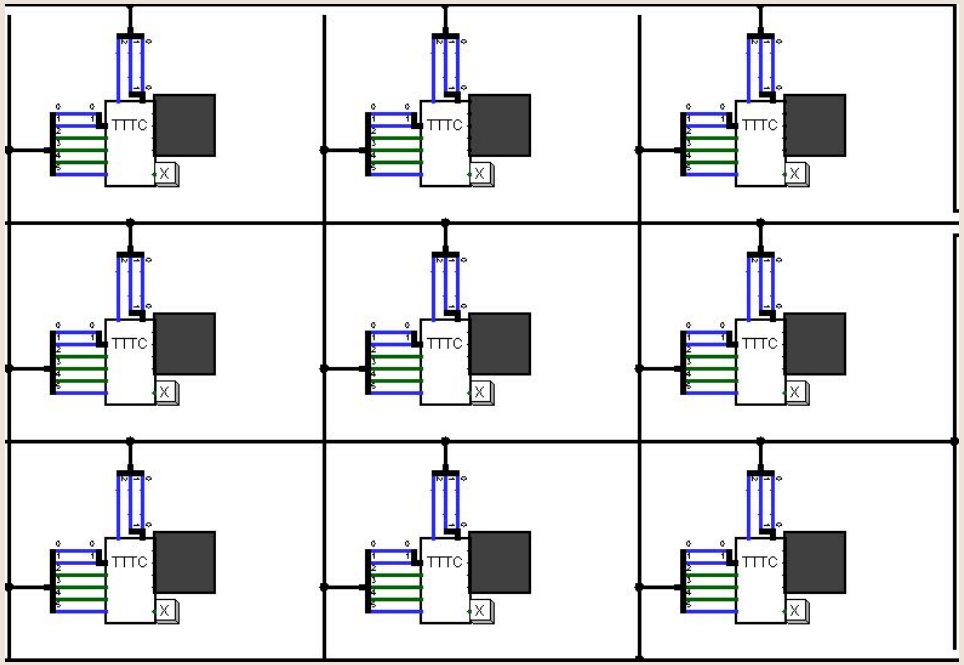
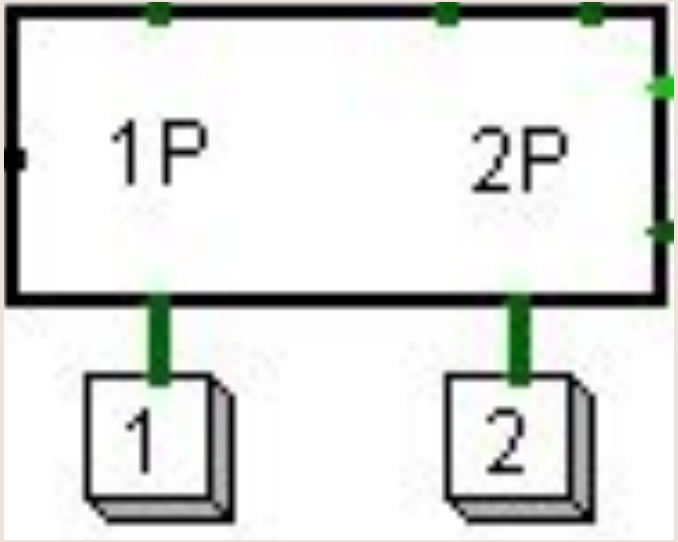
“The Game of Noughts and Crosses”

group 21216
Tatarintsev Vladislav
Makhov Nikolay
Pogibelnaya Olga

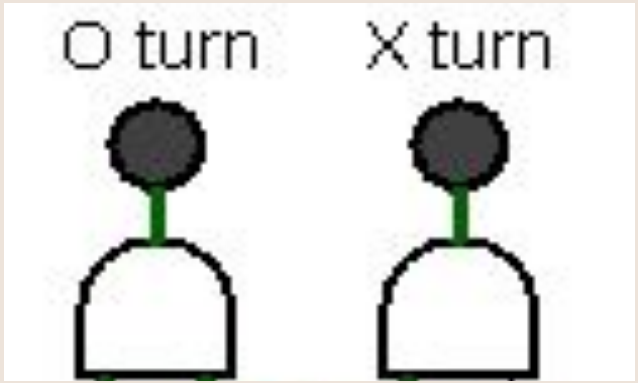
Gamepad



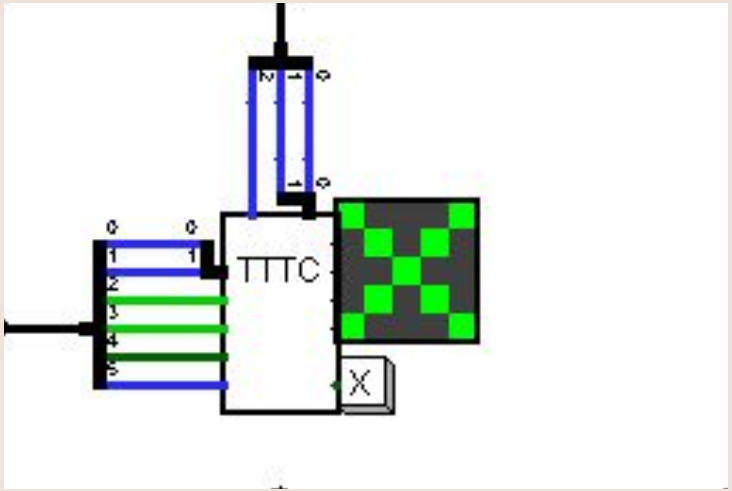
Playing field



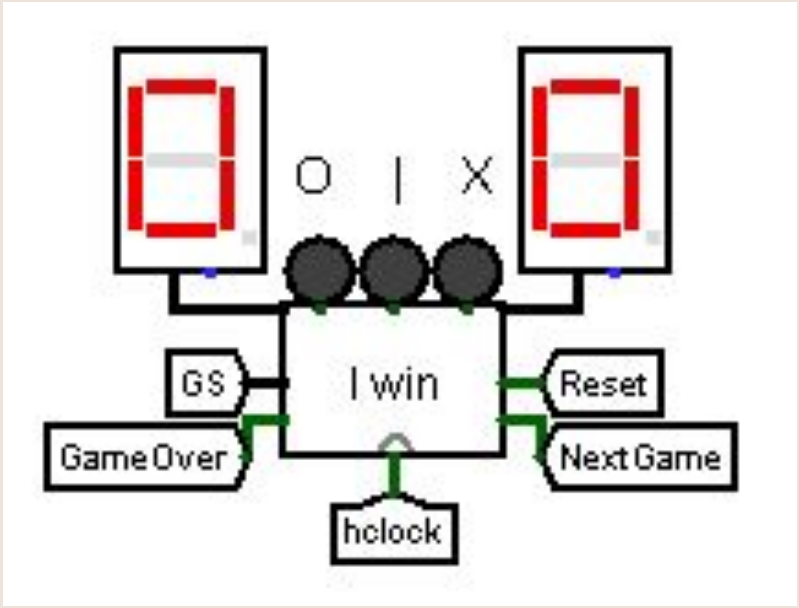
Game mode selection panel



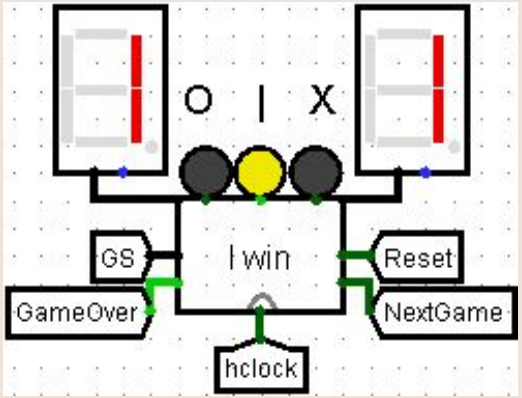
Player move indicators



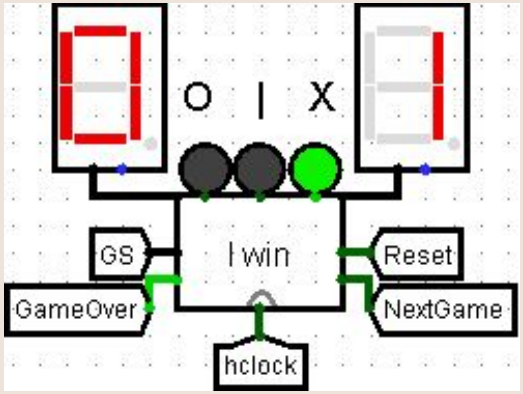
Cell with a cross



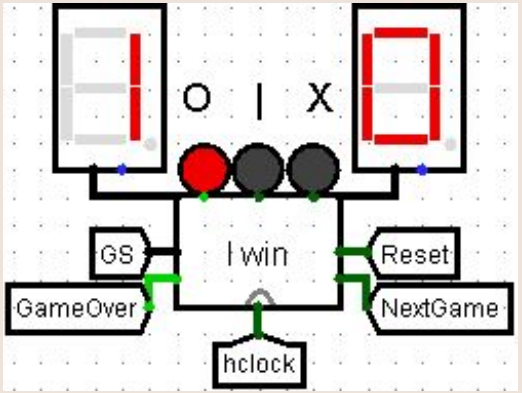
Game state display driver



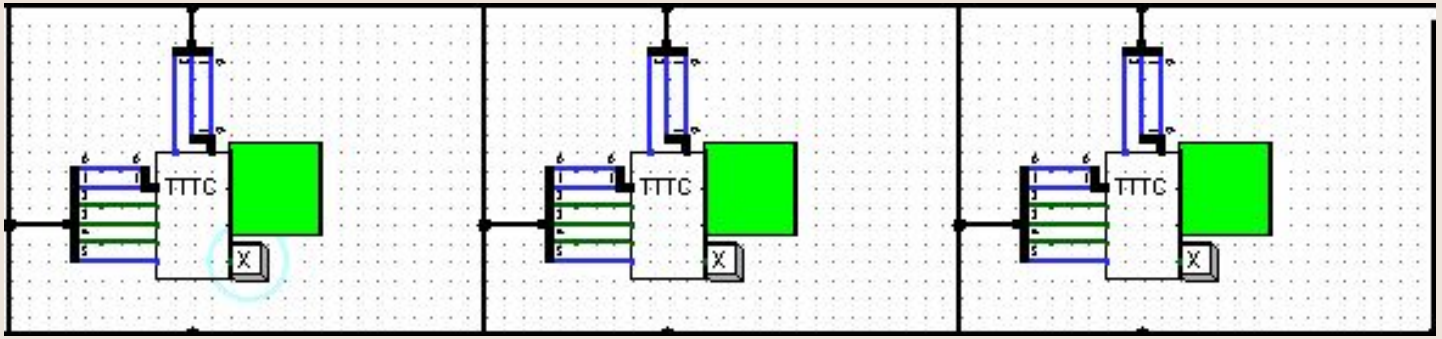
Draw



Crosses win



Noughts win

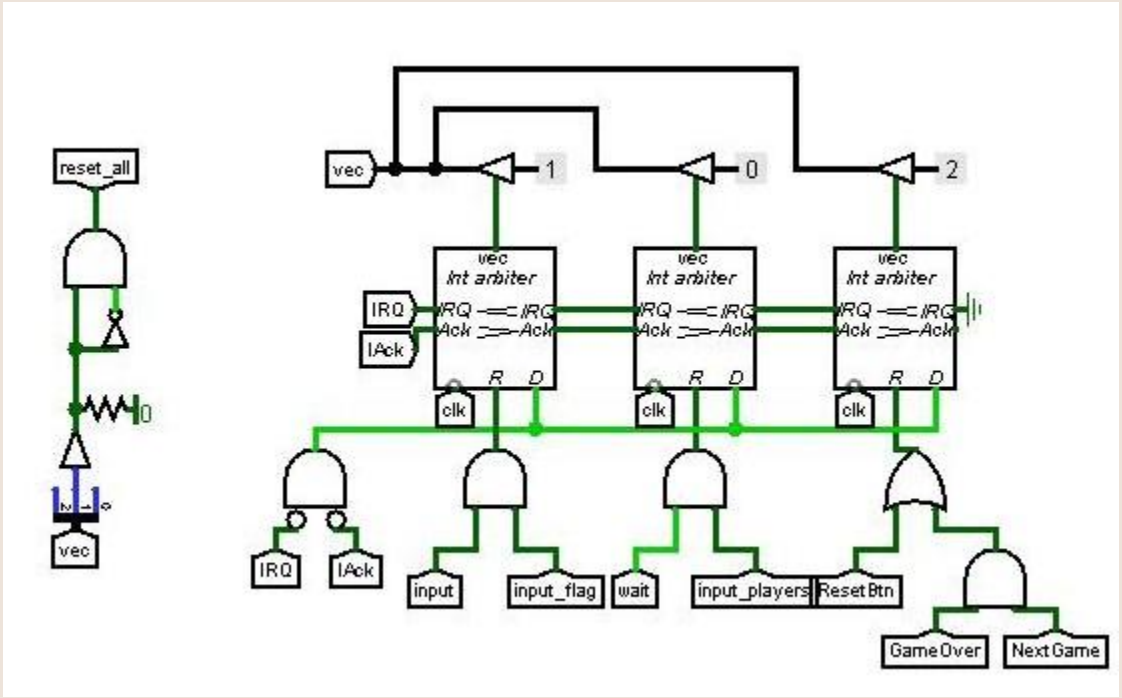


Illuminated row

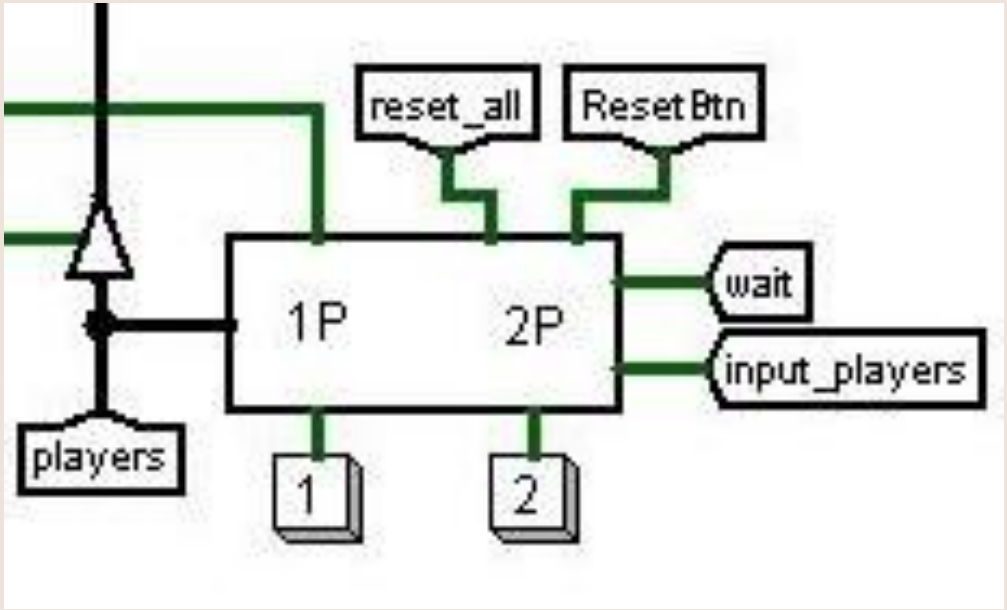
Button “Reset”

Button “Continue”

Hardware improvements

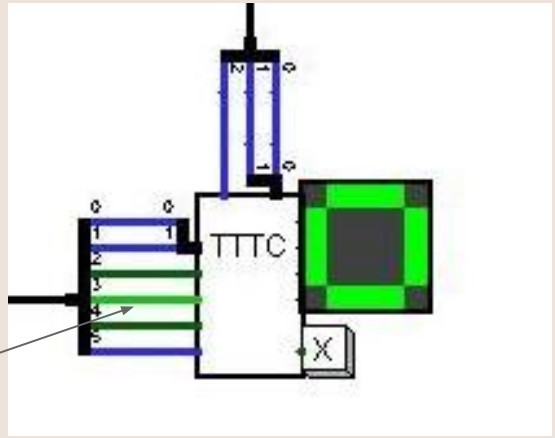


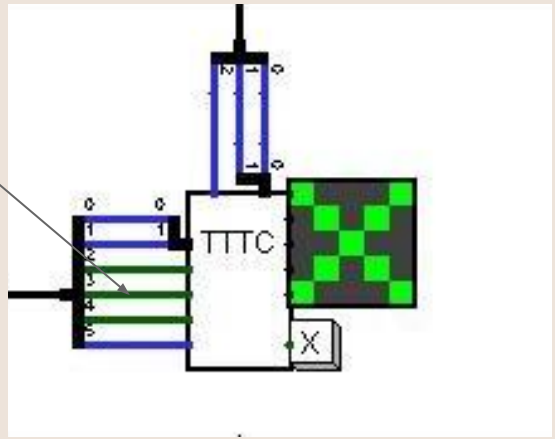
Interrupt arbiters

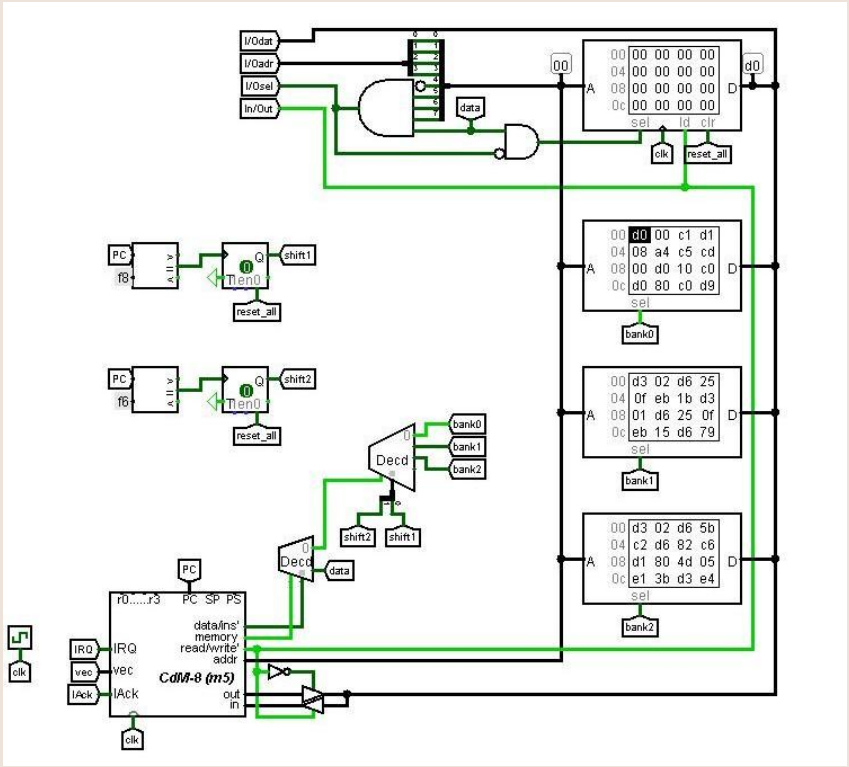


Count of players chip

Symbol switching bit when playing between two players







Banks of data

Software

MAIN

- distributes depending on the number of players (1 or 2)
- checks for a player's win or draw (if single mode)

Game mode for two

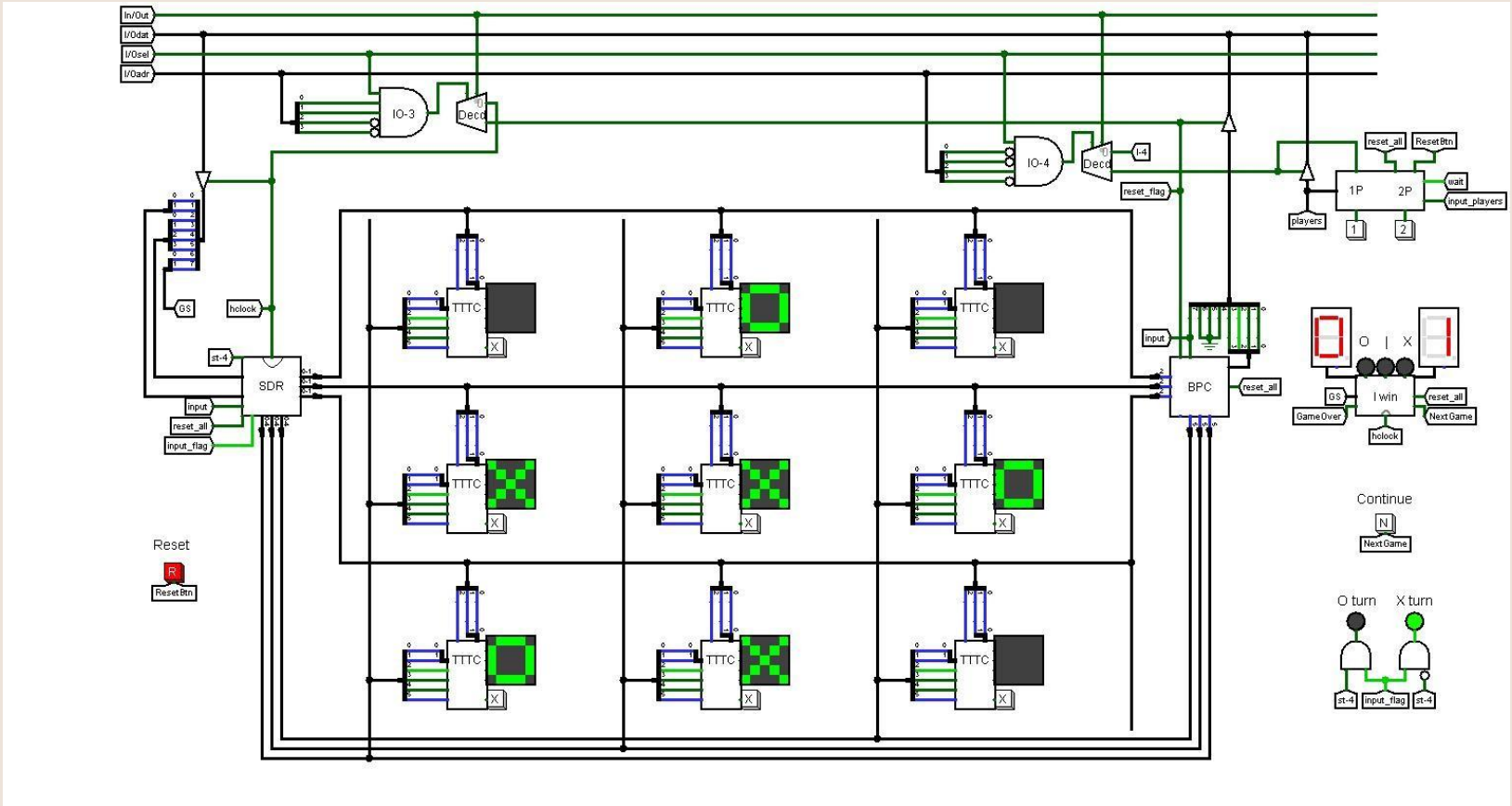
- checks for the victory of noughts
- checks for the victory of crosses

AI

- puts the third nought in a row
- blocks 2 crosses in a row with a nought
- puts a nought in the middle and corners

We have added the following improvements:

1. Score
2. "Continue" button
3. "Reset" button
4. A game for two people
5. Highlighting the winning row
6. LEDs indicating a whose move


In/Out
I/Odat
I/Osel
I/Oadr
IO-3
Deco
IO-4
Deco
I-4
reset_flag
reset_all
ResetBtn
1P
2P
wait
input_players
players
1
2
GS
holock
st-4
SDR
input
reset_all
input_flag
TTTC
X
input
BPC
reset_all
O | X
I win
GS
reset_all
GameOver
Next Game
holock
Reset
R
ResetBtn
Continue
N
Next Game
O turn
X turn
st-4
input_flag
st-4