TicTacToe
Windows forms

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Indholdsfortegnelse

Problemstilling

Lave et GUI i windows forms.

Få Forms til at vise 2 AI's spille spillet og vise det visuelt.
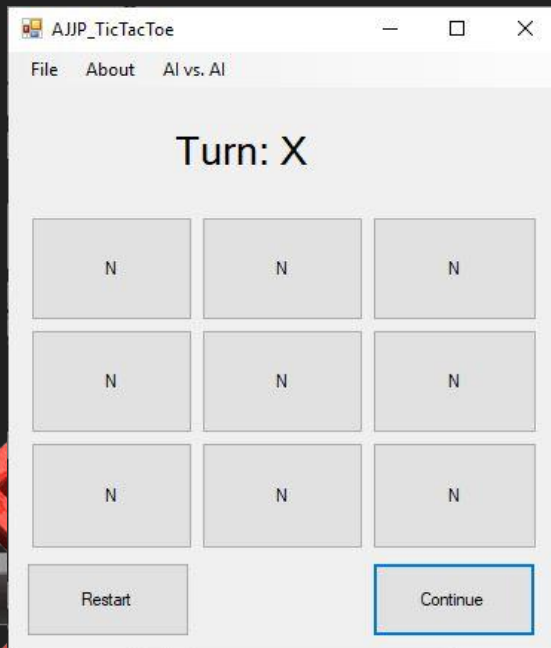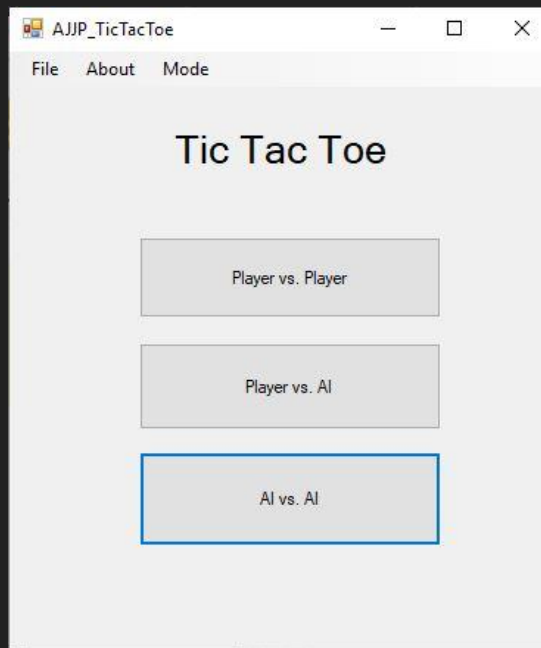
Samt hvis muligt gøre at man kan spille mod hinanden og mod AI.
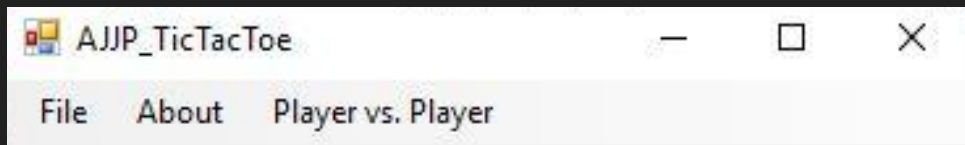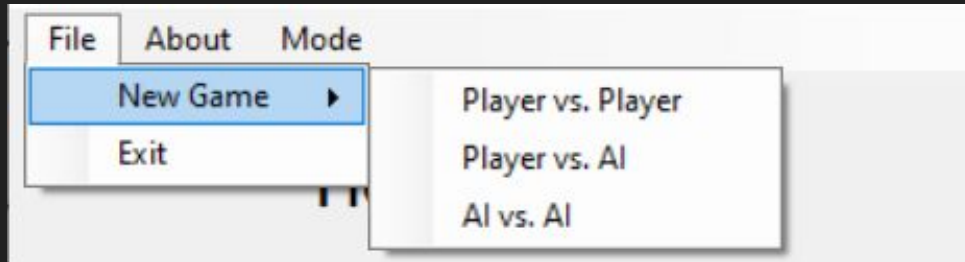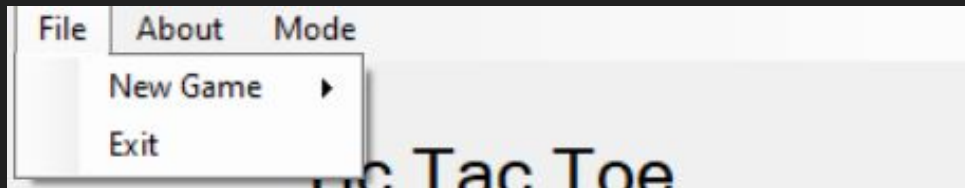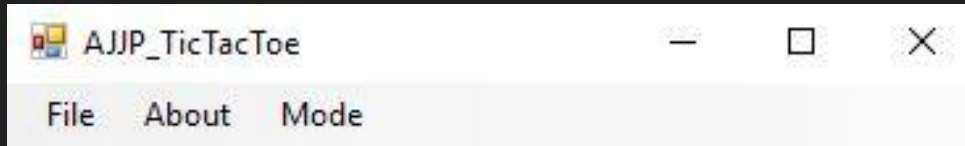
Applikationsdesign

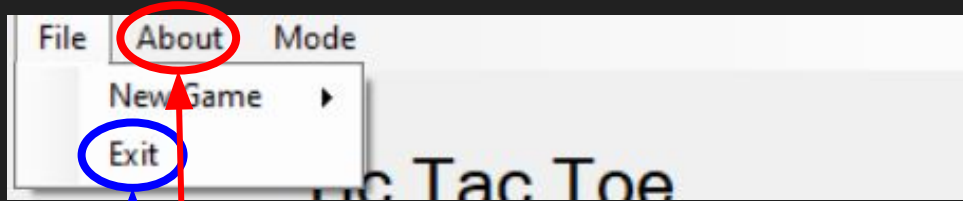Linjer

Farver

Opsætning

Brugerdefineret

Knapper - Menuen

Knappe - Kode


```csharp
private void exitToolStripMenuItem_Click(object sender, EventArgs e)
{
    Application.Exit();
}
```

```csharp
private void AboutToolStripMenuItem_Click(object sender, EventArgs e)
{
    MessageBox.Show("This game have been made by Anton, Jacob A, Jannie and Patrick 3.P. \nDelivered 20/12-2019.", "Info about game");
}
```

Selve Spillet

THE GAME

Knapper & Spillet:

```csharp
private void A1_btn_Click(object sender, EventArgs e)
{
    if (gameStarted)
    {
        Placement p = buttonsPlacements[(Button)sender];
        if (game.IsLegalMove(p))
        {
            nextP = p;
            NextStep();
        }
    }
}
```

Turn: X

N	N	N
N	N	N
N	N	N

O Has won!

X	X	O
X	O	O
O	N	X

Kode:

```csharp
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using TicTacToe;

namespace TicTacToe_WindsForms
{
    5 references
    public partial class AJJP_TicTacToe : Form
```

```csharp
3 references
private void playerVsPlayerToolStripMenuItem_Click(object sender, EventArgs e)...

3 references
private void playerVsAIToolStripMenuItem_Click(object sender, EventArgs e)...

3 references
private void AIVsAIToolStripMenuItem_Click(object sender, EventArgs e)...

1 reference
private void Restart_btn_Click(object sender, EventArgs e)...

9 references
private void A1_btn_Click(object sender, EventArgs e)...

1 reference
private void Mode1_Click(object sender, EventArgs e)...

1 reference
private void Mode2_Click(object sender, EventArgs e)...

1 reference
private void Mode3_Click(object sender, EventArgs e)...
```

```csharp
game { get; set; }
ic Placement nextP;

Button, Placement> buttonsPlacements = new Dictionary<Button, Placement>();

l gameStarted = false;
gameMode = 0;

_TicTacToe()...

i AJJP_TicTacToe_Load(object sender, EventArgs e)...

i exitToolStripMenuItem_Click(object sender, EventArgs e)...

i AboutToolStripMenuItem_Click(object sender, EventArgs e)...

is the code for the game

i NextStep()...

i UpdateForm()...

i Continue_btn_Click(object sender, EventArgs e)...

i GameModeChosen()...
```

Dictionary

```csharp
private void AJJP_TicTacToe_Load(object sender, EventArgs e)
{
    //Loads the different button placements into the dictionary
    Placement pA1 = new Placement(0, 0);
    Placement pA2 = new Placement(0, 1);
    Placement pA3 = new Placement(0, 2);
    Placement pB1 = new Placement(1, 0);
    Placement pB2 = new Placement(1, 1);
    Placement pB3 = new Placement(1, 2);
    Placement pC1 = new Placement(2, 0);
    Placement pC2 = new Placement(2, 1);
    Placement pC3 = new Placement(2, 2);

    buttonsPlacements[A1_btn] = pA1;
    buttonsPlacements[A2_btn] = pA2;
    buttonsPlacements[A3_btn] = pA3;
    buttonsPlacements[B1_btn] = pB1;
    buttonsPlacements[B2_btn] = pB2;
    buttonsPlacements[B3_btn] = pB3;
    buttonsPlacements[C1_btn] = pC1;
    buttonsPlacements[C2_btn] = pC2;
    buttonsPlacements[C3_btn] = pC3;
}
```
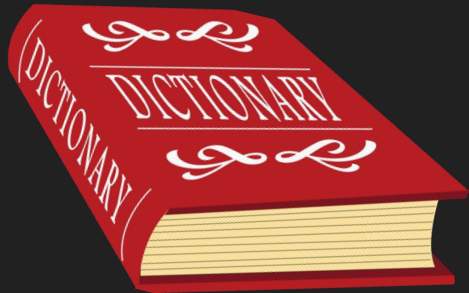
Spillets vitale Funktioner

```
//Here begins the code for the game
private void NextStep()
{
    if (!game.IsGameDone) //Runs only if the game is still going
    {
        game.NextMove(); //Changes the turn
        TurnText.Text = "Turn: " + game.CurrentPlayer.ToString(); //Shows the next player

        UpdateForm(); //Updates the form with the right symbols
    }

    if (game.WhoWon() == null && game.IsGameDone) //If the game ends in a tie and is done
    {
        TurnText.Text = "Tie";
        gameStarted = false;
```

```
private void UpdateForm()
{
    int index = 0;
    for (int i = 0; i < 3; i++) //Checks through the vertical placement spaces
    {
        for (int j = 0; j < 3; j++) //Checks through the horizontal placement spaces
        {
            //Changes the buttons text element to the right symbol
            buttonsPlacements.Keys.ToArray()[index].Text = game[i,j].ToString();
            index++;
        }
    }
}
```

```
null) //If the game has a winner

== Symbol.X)

 Has won!";

 Has won!";

.WhoWon().ToString(); //Tells who won the game
```