

# TicTacToe Windows forms

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# Indholdsfortegnelse

Problemstilling

Application Design

Knapper - Menuen

Knappe - Kode

Forbindelse mellem Knapperne

Selve Spillet

Knapper & Spillet

Kode

Dictionary

Spillets vitale Funktioner



# 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.



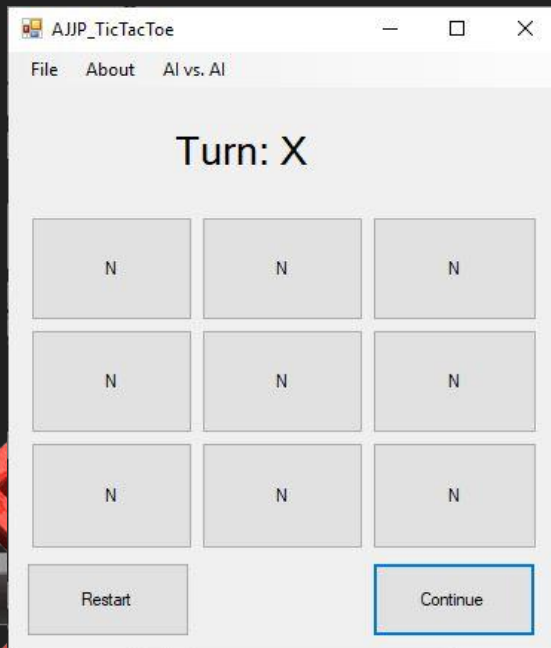
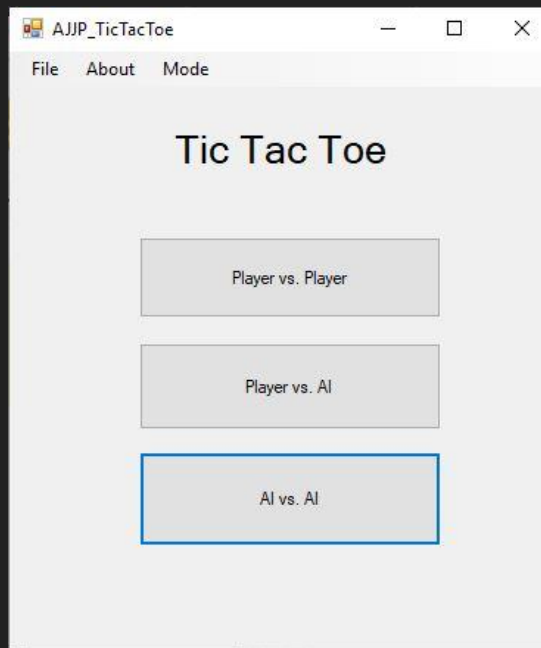
# Applikationsdesign

Linjer

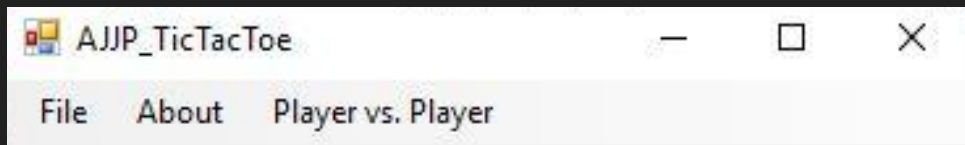
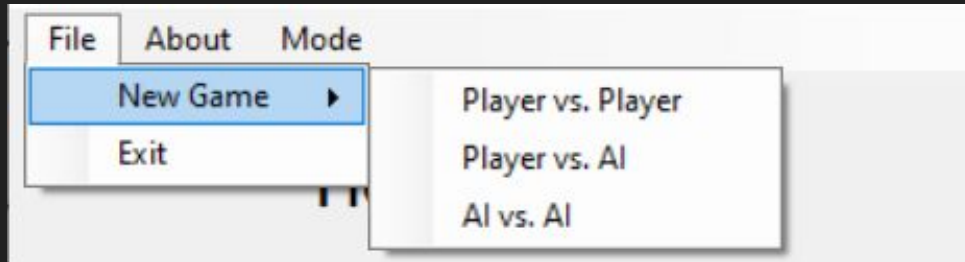
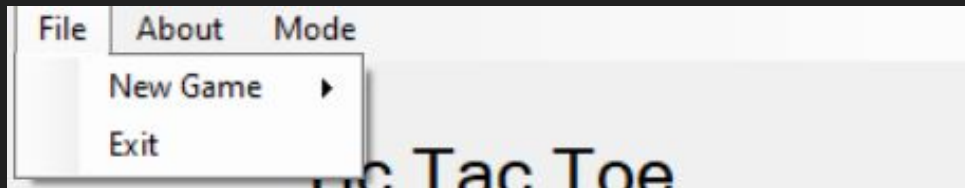
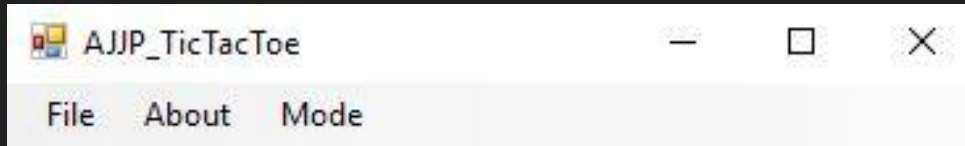
Farver

Opsætning

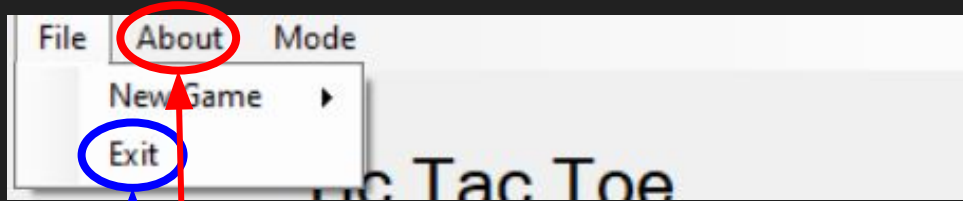
Brugerdefineret



# Knapper - Menuen



# Knappe - Kode



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

```
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");
}
```

Solve Spillet

***THE GAME***



# Knapper & Spillet:

```
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



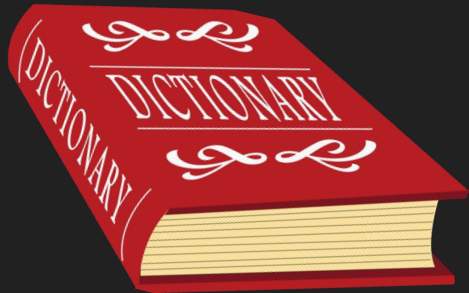
# Kode:

```
117 3 references  
131 private void playerVsPlayerToolStripMenuItem_Click(object sender, EventArgs e) ... game { get; set; }  
132 3 references  
145 private void playerVsAIToolStripMenuItem_Click(object sender, EventArgs e) ... ic Placement nextP;  
146 3 references  
161 private void AIVsAIToolStripMenuItem_Click(object sender, EventArgs e) ... Button, Placement> buttonsPlacements = new Dictionary<Button, Placement>();  
162 1 reference  
180 private void Restart_btn_Click(object sender, EventArgs e) ... l gameStarted = false;  
181 9 references  
193 private void A1_btn_Click(object sender, EventArgs e) ... gameMode = 0;  
194 1 reference  
198 private void Mode1_Click(object sender, EventArgs e) ... _TicTacToe() ...  
199 1 reference  
203 private void Mode2_Click(object sender, EventArgs e) ... d AJP_TicTacToe_Load(object sender, EventArgs e) ...  
204 1 reference  
208 private void Mode3_Click(object sender, EventArgs e) ... d exitToolStripMenuItem_Click(object sender, EventArgs e) ...  
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```

# Dictionary

```
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;
}
```



# Spillet's vitale Funktioner

```
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++;
        }
    }
}
```

```
//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;
    }
}
```