

Legend

View =

Model =

Controller =

+ = Public member

- = Private member

Difficulty (Enum)

+ EASY : 0

+ MEDIUM : 1

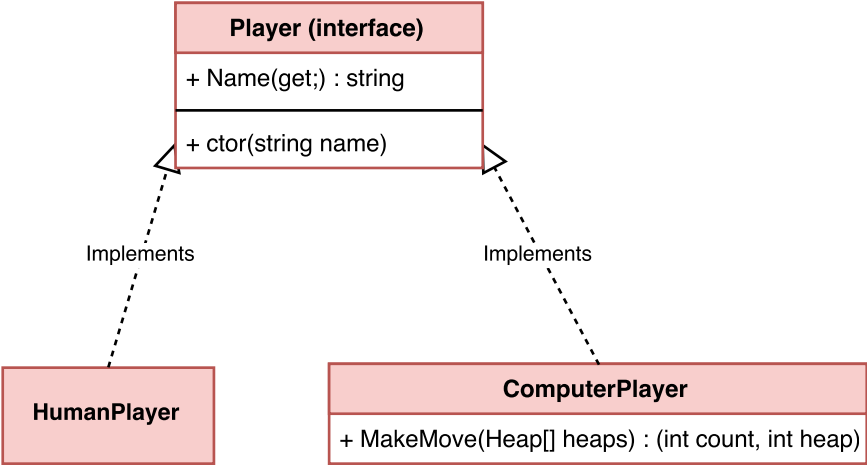
+ HARD : 2

Heap

+ StonesLeft(get; private set;) : int

+ ctor(int stonesCount)

+ RemoveStones(int count) : bool



Nim

+ Heaps(get; private set;) : Heap[]

+ Players(get; private set;) : Player[]

+ CurrentPlayer(get;) : Player

- CurrentPlayerIndex : int

+ ctor(Difficulty difficulty, string playerName)

+ ctor(Difficulty difficulty, string firstPlayerName, string secondPlayerName)

+ RemoveStones(int count, int heap) : bool

+ ComputerMakeMove() : void

+ Winner() : Player

+ IsGameOver() : bool

- SwitchTurn() : void

NimSetupView

Label Player1Name

Label Player2Name

RadioButton OpponentChoose

(RadioButtons for computer and human)

RadioButton DifficultyChoose

(RadioButtons for 1,2,3)

Textbox Player1NameText

TextBox Player2NameText

Button Submit

bool CheckValid()

NimInstructionsDialog

ListBox ShowInstructions

Button Close

+ method(type): type

| NimGamePage   |
|---|
| <ul style="list-style-type: none"> <li>- game : Nim</li> <li>- playerTurnLabel : Label</li> <li>- heapInput : TextBox</li> <li>- quantityInput : TextBox</li> <li>- submitButton : Button</li> <li>- heapsPanel : StackPanel</li> </ul>   |
| <ul style="list-style-type: none"> <li>+ ctor(Nim game)</li> <li>- InitializeHeaps() : void</li> <li>- SubmitButton_Pressed(object sender, RoutedEventArgs e) : void</li> <li>- ValidateInput() : bool</li> <li>- RemoveStones(int count, int heap) : bool</li> <li>- UpdatePlayerTurnLabel() : void</li> </ul> |

| HeapUserControl   |
|---|
| <ul style="list-style-type: none"> <li>+ HeapRef(get;) : Heap</li> <li>- HeapNumberLabel : Label</li> <li>- StonesPanel : StackPanel</li> <li>- MainPanel : StackPanel</li> </ul> |
| <ul style="list-style-type: none"> <li>+ ctor (Heap heapRef, int heapNum)</li> <li>+ Render() : void</li> </ul>   |