```
2c2
< // Swift source code of main.swift Version 8.1.8 at greenchess.com //
---
> // Swift source code of main.swift Version 8.1.7 at greenchess.com //
819,824d818
<    // the number of frames in the gallery //
<    var NumberOfFrames:Int = 0
<
<    // the current frame number //
<    var FrameNumber:Int = 0
<
827c821,824
<
---
>
>    // a layer index in the gallery //
>    var Layer:Int = 0
>
867,868c864,865
<    // the points to draw the full gallery layer at //
<    var Points:[CGPoint] = []
---
>    // the rectangles to draw the boards in //
>    var Rects:[CGRect] = []
872a870,875
>    // the shifted core graphics view bounds //
>    var ShiftedViewBounds:CGRect = CGRect(x:0, y:0, width:1, height:1)
>
>    // the board bounds //
>    var BoardBounds:CGRect = CGRect(x:0, y:0, width:1, height:1)
>
875a879,881
>    // the board size //
>    var BoardSize:CGFloat = 0
>
878a885,887
>    // the gallery frames //
>    var Frames:[CGLayer] = []
>
882,887d890
<    // the full gallery layer //
<    var FullGalleryLayer:CGLayer!
<
<    // the frame strip //
<    var FrameStrip:CGLayer!
<
908a912,914
>    // the maximum number of frames in the gallery //
>    var MaxFrames:Int = 0
>
932,934d937
<
<       // update the display //
<       displayIgnoringOpacity(bounds)
952,954d954
<
<       // update the display //
<       displayIgnoringOpacity(bounds)
1105a1106,1112
>
>       // if not recording a movie //
>       if !RecordingMovie
>       {
>          // update the display in the bounds //
>          displayIgnoringOpacity(bounds)
>       }
1166,1168c1173,1175
<       displayIgnoringOpacity(NSMakeRect(min(PreviousLocation.x - 1, Location.x - 1),
<                             min(PreviousLocation.y - 1, Location.y - 1), abs(PreviousLocation.x -
<                             Location.x) + 2, abs(PreviousLocation.y - Location.y) + 2))
---
>       displayIgnoringOpacity(NSMakeRect(min(PreviousLocation.x - 4, Location.x - 4),
>                             min(PreviousLocation.y - 4, Location.y - 4), abs(PreviousLocation.x -
>                             Location.x) + 8, abs(PreviousLocation.y - Location.y) + 8))
1211,1213d1217
<
<       // update the display //
<       displayIgnoringOpacity(bounds)
1242c1246
<       // return a cg layer of the given size //
---
>       // return a cg layer of the given size /
1250c1254
<    func AddFrame(_ Frame:CGLayer)
---
>    func AddFrame(_ FrameNumber:Int, Layer:CGLayer)
1252,1268c1256,1260
<       // add a point for the frame position in the gallery //
<       Points.append(CGPoint(x:CGFloat(-FrameNumber) * FrameSize * Scale, y:0))
<
<       // if there is more than one layer //
<       if Layers > 1
<       {
<          // add the frame to the frame strip //
<          FrameStrip.context?.draw(Frame, in:CGRect(x:CGFloat(FrameNumber) * FrameSize * Scale, y:0,
<                                  width:FrameSize * Scale, height:FrameSize * Scale))
<       }
<       // if there is only one layer //
<       else
<       {
<          // add the frame to the full gallery layer //
<          FullGalleryLayer.context?.draw(Frame, in:CGRect(x:CGFloat(FrameNumber) * FrameSize * Scale,
<                                        y:0, width:FrameSize * Scale, height:FrameSize * Scale))
<       }
---
>       // draw in a new frame //
>       Frames[FrameNumber].context?.draw(Layer, in:CGRect(x:0, y:0, width:BoardSize, height:BoardSize))
>
>       // the max number of frames //
>       MaxFrames = FrameNumber + 1
1270,1271c1262,1263
<       // increment the frame number //
<       FrameNumber += 1
---
>       // set the maximum gallery frame position //
>       MaxPosition = max(MaxFrames - FramesWide * Layers, 0)
1378,1379c1370,1392
<       // draw the full gallery layer shifted to the specified point //
<       Context.draw(FullGalleryLayer, at:Points[CurrentPosition])
---
>       // if is the first position of zero //
>       if CurrentPosition == 0
>       {
>          // fill the gallery layer //
>          FillGalleryLayer()
>       }
>       // if not the first position in the gallery //
>       else
>       {
>          // shift the gallery layer to the left by one frame //
>          GalleryLayer.context?.draw(GalleryLayer, in:ShiftedViewBounds)
>
>          // loop over all the layers //
>          for Layer in 1 ... Layers
>          {
>             // draw the rightmost frame //
>             GalleryLayer.context?.draw(Frames[CurrentPosition + FramesWide * Layer - 1], in:
>                                       Rects[FramesWide * Layer - 1])
>          }
>       }
>
>       // draw the gallery layer into the context //
>       Context.draw(GalleryLayer, in:ViewBounds)
1405a1419,1425
>
>       // loop over all the frames //
>       for Index in 0 ..< MaxFrames
>       {
>          // clear the frame context //
>          Frames[Index].context?.clear(BoardBounds)
>       }
1407,1431c1427,1428
<       // remove all the diagram paths //
<       DiagramPaths.removeAll()
<
<       // remove all the points //
<       Points.removeAll()
<
<       // remove all the diagram path colors //
<       DiagramPathColors.removeAll()
<
<       // reset the full gallery layer //
<       FullGalleryLayer = CGLayerOfSize(1, Height:1)
<
<       // reset the frame strip //
<       FrameStrip = CGLayerOfSize(1, Height:1)
<
<       // reset the diagram layer //
<       DiagramLayer = CGLayerOfSize(1, Height:1)
<
<       // reset the gallery layer //
<       GalleryLayer = CGLayerOfSize(1, Height:1)
<
<       // reset the context //
<       Context = CGContext(data:nil, width:1, height:1, bitsPerComponent:8, bytesPerRow:0, space:
<                          CGColorSpaceCreateDeviceRGB(), bitmapInfo:CGImageAlphaInfo.noneSkipFirst
<                          .rawValue)
---
>       // clear the diagram //
>       ClearDiagram()
1446a1444,1458
>    // fill the gallery layer //
>    func FillGalleryLayer()
>    {
>       // loop over all the boards for the current gallery view //
>       for Index in 0 ..< FramesWide * Layers
>       {
>          // if the current board position is less than the maximum value allowed //
>          if Index + CurrentPosition < MaxFrames
>          {
>             // draw the frame into the specified rectangle in the view //
>             GalleryLayer.context?.draw(Frames[CurrentPosition + Index], in:Rects[Index])
>          }
>       }
>    }
>
1450,1451c1462,1466
<       // shift the full gallery layer into the gallery layer //
<       GalleryLayer.context?.draw(FullGalleryLayer, at:Points[CurrentPosition])
---
>       // clear the gallery context //
>       GalleryLayer.context?.clear(ViewBounds)
>
>       // fill the gallery layer //
>       FillGalleryLayer()
1492,1510d1506
<    // create the full gallery layer //
<    func CreateFullGalleryLayer()
<    {
<       // set the max position //
<       MaxPosition = max(FrameNumber - FramesWide * Layers, 0)
<
<       // if there is more than one layer //
<       if Layers > 1
<       {
<          // loop over all the layers //
<          for Index in 0 ..< Layers
<          {
<             // draw the shifted frame strip into the full gallery layer //
<             FullGalleryLayer.context?.draw(FrameStrip, at:CGPoint(x:CGFloat(-Index) * Width * Scale,
<                                           y:CGFloat(Layers - 1 - Index) * FrameSize * Scale))
<          }
<       }
<    }
<
1512c1508
<    func Initialize()
---
>    func Initialize(_ Size:CGFloat)
1514,1515c1510,1511
<       // set the current frame number to zero //
<       FrameNumber = 0
---
>       // set the board size //
>       BoardSize = Size * Scale
1543a1540,1546
>       // the shifted view bounds //
>       ShiftedViewBounds = CGRect(x:-Scale * FrameSize, y:0, width:Width * Scale, height:Height *
>                                 Scale)
>
>       // set the board bounds //
>       BoardBounds = CGRect(x:0, y:0, width:BoardSize * Scale, height:BoardSize * Scale)
>
1550,1561d1552
<       // if there is more than one layer //
<       if Layers > 1
<       {
<          // create the frame strip layer //
<          FrameStrip = CGLayerOfSize(CGFloat(NumberOfFrames) * FrameSize * Scale, Height:FrameSize *
<                                    Scale)
<       }
<
<       // create the full gallery layer //
<       FullGalleryLayer = CGLayerOfSize(CGFloat(NumberOfFrames) * FrameSize * Scale, Height:
<                                       CGFloat(Layers) * FrameSize * Scale)
<
1572a1564,1566
>       // remove all the rectangles //
>       Rects.removeAll()
>
1577a1572,1594
>
>       // loop over all the layers //
>       for Layer in (0 ..< Layers).reversed()
>       {
>          // loop over all the frames wide //
>          for Index in 0 ..< FramesWide
>          {
>             // append a rectangle to draw a board in //
>             Rects.append(CGRect(x:Scale * FrameSize * CGFloat(Index), y:Scale * FrameSize *
>                         CGFloat(Layer), width:Scale * FrameSize, height:Scale * FrameSize))
>          }
>       }
>
>       // if there are no frames yet //
>       if Frames.count == 0
>       {
>          // loop over 800 frames //
>          for _ in 0 ..< 800
>          {
>             // append a frame for the given frame size //
>             Frames.append(CGLayerOfSize(BoardSize, Height:BoardSize))
>          }
>       }
2266,2268d2282
<    // the current frame number //
<    var FrameNumber:Int = 0
<
3923,3928d3936
<    // the gallery five layers menu item //
<    @IBOutlet var GalleryFiveLayersMenuItem:NSMenuItem!
<
<    // the gallery six layers menu item //
<    @IBOutlet var GallerySixLayersMenuItem:NSMenuItem!
<
4423,4436d4430
<    // clear all the illustrations //
<    func ClearIllustrations()
<    {
<       // loop over all the illustrations //
<       for Index in 0 ..< Illustrations.count
<       {
<          // set the illustration to an empty image //
<          Illustrations[Index] = NSImage()
<       }
<
<       // remove all the illustrations //
<       Illustrations.removeAll()
<    }
<
4454,4455c4448,4449
<       // clear all the illustrations //
<       ClearIllustrations()
---
>       // remove all the illustrations //
>       Illustrations.removeAll()
7053,7054c7047,7048
<       // clear all the illustrations //
<       ClearIllustrations()
---
>       // remove all the illustrations //
>       Illustrations.removeAll()
7959,7964d7952
<
<       // turn off the gallery five layers menu item //
<       GalleryFiveLayersMenuItem.state = NSControl.StateValue(rawValue:0)
<
<       // turn off the gallery six layers menu item //
<       GallerySixLayersMenuItem.state = NSControl.StateValue(rawValue:0)
8677c8665
<       // return a cg layer of the given size //
---
>       // return a cg layer of the given size /
8813c8801
<       AppNameView.stringValue = "GreenChess 8.1.8"
---
>       AppNameView.stringValue = "GreenChess 8.1.7"
9936,9939c9924,9927
<          displayIgnoringOpacity(NSMakeRect(min(PreviousMouseLocation.x - 1, MouseLocation.x - 1),
<                                 min(PreviousMouseLocation.y - 1, MouseLocation.y - 1),
<                                 abs(PreviousMouseLocation.x - MouseLocation.x) + 2,
<                                 abs(PreviousMouseLocation.y - MouseLocation.y) + 2))
---
>          displayIgnoringOpacity(NSMakeRect(min(PreviousMouseLocation.x - 4, MouseLocation.x - 4),
>                                 min(PreviousMouseLocation.y - 4, MouseLocation.y - 4),
>                                 abs(PreviousMouseLocation.x - MouseLocation.x) + 8,
>                                 abs(PreviousMouseLocation.y - MouseLocation.y) + 8))
10959c10947
<    func WriteMovieFrame()
---
>    func WriteMovieFrame(_ FrameNumber:Int)
12787c12775
<       GameGalleryView.Initialize()
---
>       GameGalleryView.Initialize(CGBoardSize[0])
12792,12794d12779
<       // create the full gallery layer from the processed frames //
<       GameGalleryView.CreateFullGalleryLayer()
<
12811,12824d12795
<    // the game gallery six layers menu item action //
<    @IBAction func GallerySixLayersMenuItemAction(_:AnyObject)
<    {
<       // launch the gallery for the six layers //
<       LaunchGallery(GallerySixLayersMenuItem, NumberOfLayers:6, ApproximateSize:80)
<    }
<
<    // the game gallery five layers menu item action //
<    @IBAction func GalleryFiveLayersMenuItemAction(_:AnyObject)
<    {
<       // launch the gallery for the five layers //
<       LaunchGallery(GalleryFiveLayersMenuItem, NumberOfLayers:5, ApproximateSize:100)
<    }
<
12859,12861d12829
<       // set the number of frames for the gallery //
<       GameGalleryView.NumberOfFrames = MoveList.count + 1
<
17442c17410
<    func AddFrame()
---
>    func AddFrame(_ FrameNumber:Int)
17448c17416
<          WriteMovieFrame()
---
>          WriteMovieFrame(FrameNumber)
17460c17428
<          GameGalleryView.AddFrame(CGLayersBoardWithPieces[0])
---
>          GameGalleryView.AddFrame(FrameNumber, Layer:CGLayersBoardWithPieces[0])
17467c17435
<       // clear all the frames //
---
>       // remove all the frames //
17489,17491d17456
<       // set the frame number to zero //
<       FrameNumber = 0
<
17493c17458
<       AddFrame()
---
>       AddFrame(0)
17529,17531d17493
<             // increment the frame number //
<             FrameNumber += 1
<
17533c17495
<             AddFrame()
---
>             AddFrame(Index + 1)
17557,17558c17519,17520
<          // clear all the illustrations //
<          ClearIllustrations()
---
>          // remove all the illustrations //
>          Illustrations.removeAll()
```