

```
public class Piece
{
    private Color color;
    private int row;
    private int col;

    public Piece(Color pColor, int pRow, int pCol)
    {
        color = pColor;
        row = pRow;
        col = pCol;
    }

    public void moveTo(int pRow, int pCol)
    {
        row = pRow;
        col = pCol;
    }

    public Color getColor()
    {
        return color;
    }

    public void setColor(Color color)
    {
        this.color = color;
    }

    public int getRow()
    {
        return row;
    }

    public int getCol()
    {
        return col;
    }

    public void draw(Graphics g, int offsetLeft, int offsetTop, int squareSide)
    {
        g.setColor(color);
        g.fillOval(offsetLeft + col * squareSide, offsetTop + row * squareSide, squareSide, squareSide);
    }
}
```

```
public class MovePiece
{
    private Color color;
    private int x;
    private int y;

    public MovePiece(Color pColor, int pX, int pY)
    {
        color = pColor;
        x = pX;
        y = pY;
    }

    public void moveTo(int pX, int pY)
    {
        x = pX;
        y = pY;
    }

    public Color getColor()
    {
        return color;
    }

    public int getX()
    {
        return x;
    }

    public int getY()
    {
        return y;
    }

    public void draw(Graphics g, int squareSide)
    {
        g.setColor(color);
        g.fillOval(x - squareSide / 2, y - squareSide / 2, squareSide, squareSide);
    }
}
```

```

public class Checkers
{
    private ArrayList<Piece> alPieces = new ArrayList<>();

    // Pièce en déplacement/mouvement (colorée en gris)
    private MovePiece inMove = null;

    public Checkers()
    {
        for (int r = 0; r < 8; r++)
        {
            for (int c = 0; c < 8; c++)
            {
                if ((r + c) % 2 == 1)
                    if (r < 3)
                        alPieces.add(new Piece(Color.BLUE, r, c));
                    else if (r >= 5)
                        alPieces.add(new Piece(Color.RED, r, c));
            }
        }
    }

    public Piece getPieceAt(int pRow, int pCol)
    {
        Piece p = null;
        boolean found = false;
        int i = 0;
        while (!found && i < alPieces.size())
        {
            p = alPieces.get(i);
            if ((pRow == p.getRow()) && (pCol == p.getCol()))
                found = true;
            else
                i++;
        }
        if (found)
            return alPieces.get(i);
        else
            return null;
    }

    public boolean move(int pStartRow, int pStartCol, int pDestRow, int pDestCol)
    {
        Piece p = getPieceAt(pStartRow, pStartCol);
        if (p == null)
            return false; // Pas de pièce à cette position de départ

        // Enlever la pièce en mouvement
        inMove = null;

        // Pièce existe
        if ((pDestRow < 0) || (pDestCol < 0) || (pDestRow > 7) || (pDestCol > 7))
        {
            // Position en dehors du damier --> effacer la pièce
            alPieces.remove(p);
            return true;
        }

        if (getPieceAt(pDestRow, pDestCol) == null)
        {
            // Pas de pièce à la position d'arrivée --> on bouge la pièce
            p.moveTo(pDestRow, pDestCol);
            return true;
        }

        return false;
    }

    public void beginMove(Color color, int pX, int pY)
    {
        inMove = new MovePiece(color, pX, pY);
    }

    public void doMove(int pX, int pY)
    {
        // Bouge la pièce en déplacement vers la nouvelle position
        if (inMove != null)
            inMove.moveTo(pX, pY);
    }

    public void draw(Graphics g, int offsetLeft, int offsetTop, int cellSize)
    {
        // Dessiner la grille
        int c, r;
        for (int i = 0; i < 8; i++)
        {
            r = (i * cellSize);
            for (int j = 0; j < 8; j++)
            {
                c = (j * cellSize);
                if ((i + j) % 2 == 1)
                    g.setColor(Color.GRAY);
                else
                    g.setColor(Color.WHITE);
                g.fillRect(offsetLeft + c, offsetTop + r, cellSize, cellSize);
                g.setColor(Color.BLACK);
                g.drawRect(offsetLeft + c, offsetTop + r, cellSize, cellSize);
            }
        }
    }
}

```

```
    }  
  
    // Dessiner les pièces... chaque pièce se dessine elle-même!  
    for (int i = 0; i < alPieces.size(); i++)  
        alPieces.get(i).draw(g, offsetLeft, offsetTop, cellSize);  
  
    // Dessiner la pièce en déplacement  
    if (inMove != null)  
        inMove.draw(g, cellSize);  
}
```

```
public class DrawPanel extends javax.swing.JPanel
{
    private Checkers checkers = null;
    private int squareSide = 0;
    private int offsetLeft = 0;
    private int offsetTop = 0;

    public void setCheckers(Checkers checkers)
    {
        this.checkers = checkers;
    }

    public int getSquareSide()
    {
        return squareSide;
    }

    public int getOffsetLeft()
    {
        return offsetLeft;
    }

    public int getOffsetTop()
    {
        return offsetTop;
    }

    public DrawPanel()
    {
        initComponents();
    }

    public void paintComponent(Graphics g)
    {
        int w = getWidth();
        int h = getHeight();

        // Peindre l'arrière fond
        g.setColor(Color.WHITE);
        g.fillRect(0, 0, w, h);

        int l = Math.min(w, h) - 1;
        squareSide = l / 8;

        // Calculer les décalages
        offsetLeft = (w - l) / 2;
        offsetTop = (h - l) / 2;

        // Dessiner le damier et les pièces... s'il existe
        if (checkers != null)
            checkers.draw(g, offsetLeft, offsetTop, squareSide);
    }
}
// Skipped: ... initComponents { ... }
// Variables declaration - do not modify//GEN-BEGIN:variables
// End of variables declaration//GEN-END:variables
```

```

public class MainFrame extends javax.swing.JFrame
{
    private Checkers checkers = null;
    private Piece piece = null;
    private Color realColor = null;

    public MainFrame()
    {
        initComponents();
    }
}
// Skipped: ... initComponents { ... }
private void newButtonActionPerformed(java.awt.event.ActionEvent evt) //GEN-FIRST:event_newButtonActionPerformed
{//GEN-HEADEREND:event_newButtonActionPerformed
    checkers = new Checkers();
    drawPanel.setCheckers(checkers);

    repaint();
} //GEN-LAST:event_newButtonActionPerformed

private void drawPanelMousePressed(java.awt.event.MouseEvent evt) {//GEN-FIRST:event_drawPanelMousePressed
    if (checkers != null)
    {
        int x, y, row, col;

        // gérer correctement le décalage à droite / haut
        y = evt.getY() - drawPanel.getOffsetTop();
        x = evt.getX() - drawPanel.getOffsetLeft();

        if ((x < 0) || (y < 0))
        {
            row = -1;
            col = -1;
        }
        else
        {
            row = y / drawPanel.getSquareSide();
            col = x / drawPanel.getSquareSide();
        }

        piece = checkers.getPieceAt(row, col);
        if (piece != null)
        {
            realColor = piece.getColor();
            piece.setColor(realColor.darker().darker());
            checkers.beginMove(realColor, evt.getX(), evt.getY());
            msgLabel.setText("-");
        }
        else
        {
            msgLabel.setText("No piece at that position!");
        }

        repaint();
    }
} //GEN-LAST:event_drawPanelMousePressed

private void drawPanelMouseReleased(java.awt.event.MouseEvent evt) {//GEN-FIRST:event_drawPanelMouseReleased
    if ((checkers != null) && (piece != null))
    {
        int x, y, row, col;

        // gérer correctement le décalage à droite / haut
        y = evt.getY() - drawPanel.getOffsetTop();
        x = evt.getX() - drawPanel.getOffsetLeft();

        if ((x < 0) || (y < 0))
        {
            row = -1;
            col = -1;
        }
        else
        {
            row = y / drawPanel.getSquareSide();
            col = x / drawPanel.getSquareSide();
        }

        if (checkers.move(piece.getRow(), piece.getCol(), row, col))
            msgLabel.setText("-");
        else
            msgLabel.setText("Invalid move!");
        piece.setColor(realColor);
        piece = null;

        repaint();
    }
} //GEN-LAST:event_drawPanelMouseReleased

private void drawPanelMouseDragged(java.awt.event.MouseEvent evt) {//GEN-FIRST:event_drawPanelMouseDragged
    if ((checkers != null) && (piece != null))
    {
        checkers.doMove(evt.getX(), evt.getY());
        repaint();
    }
} //GEN-LAST:event_drawPanelMouseDragged
// Skipped: ... Look & Feel
// Variables declaration - do not modify//GEN-BEGIN:variables
private DrawPanel drawPanel;
private javax.swing.JComboBox jComboBox1;

```

```
private javax.swing.JLabel msgLabel;  
private javax.swing.JButton newButton;  
// End of variables declaration//GEN-END:variables  
}
```