**Report of Numpuzzle game in java**

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**Objective:**

The main theme behind developing the Numpuzzle game using java is to provide a creative and competitive environment. Numpuzzle games have always been in demand and they are being played by every age group. Puzzle games not only help people to pass their time well but also challenge our thinking and exercise our minds. The puzzles are also an important educational learning tool for toddlers and young children as they provide many skills and mental learning benefits and opportunities.

**Purpose:**

To make an interesting gaming environment, we tried to code smart decision-making algorithms to make system more intelligent and can learn the moves from the numpuzzle game. At the same time, while playing other games most of us faces difficulties while handling keys and other controls. To overcome from all these problems, users have been provided freedom, to change the gaming control as per their convenience and change settings to have their controls while playing the games.

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.\*;

class numpuzzle

{

static int arrH[]={80,150,220,80,150,220,80,150};

static int arrV[]={70,70,70,140,140,140,210,210};

static int X=220,Y=210;

static int j=0,move=0;

static String st= "MOVE = ";

public static void main(String args[])

{

JFrame frame1=new JFrame();

frame1.setVisible(true);

frame1.setLocation(350,100);

frame1.setSize(500,500);

frame1.setResizable(false);

frame1.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

JPanel pn1=new JPanel();

frame1.add(pn1);

pn1.setBackground(Color.BLACK);

pn1.setLayout(null);

JLabel wc=new JLabel();

pn1.add(wc);

wc.setBounds(110,50,300,60);

wc.setText("WELCOME");

wc.setForeground(Color.RED);

wc.setFont(new Font("ITALIC",Font.BOLD,50));

JLabel lb=new JLabel();

pn1.add(lb);

lb.setBounds(10,150,500,40);

lb.setForeground(Color.GREEN);

lb.setFont(new Font("ITALIC",Font.BOLD,30));

lb.setText("PROJECT : NUMPUZZLE");

JLabel lb2=new JLabel();

pn1.add(lb2);

lb2.setBounds(200,210,500,40);

lb2.setForeground(Color.YELLOW);

lb2.setFont(new Font("ITALIC",Font.BOLD,30));

lb2.setText("By");

JLabel lb3=new JLabel();

pn1.add(lb3);

lb3.setBounds(20,270,500,40);

lb3.setForeground(Color.WHITE);

lb3.setFont(new Font("ITALIC",Font.BOLD,30));

lb3.setText("Amir Ali 20CS078 ");

JButton btS=new JButton("START");

pn1.add(btS);

btS.setBounds(160,330,150,60);

btS.setFont(new Font("ITALIC",Font.BOLD,30));

btS.setBackground(Color.RED);

btS.setForeground(Color.YELLOW);

JFrame frame2=new JFrame();

frame2.setLocation(400,100);

frame2.setSize(400,400);

JPanel pn=new JPanel();

pn.setLayout(null);

frame2.add(pn);

frame2.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

frame2.setResizable(false);

pn.setBackground(Color.BLACK);

JLabel mv=new JLabel();

pn.add(mv);

mv.setBounds(120,10,220,40);

mv.setForeground(Color.RED);

mv.setFont(new Font("ITALIC",Font.BOLD,30));

mv.setText("MOVE = 0");

JFrame frame3=new JFrame();

frame3.setLocation(400,100);

frame3.setSize(400,400);

JPanel pnF=new JPanel();

pnF.setLayout(null);

frame3.add(pnF);

frame3.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

frame3.setResizable(false);

JLabel v=new JLabel();

pnF.add(v);

v.setBounds(90,70,400,40);

v.setForeground(Color.RED);

v.setFont(new Font("ITALIC",Font.BOLD,40));

v.setText("YOU WON");

JLabel mvR=new JLabel();

pnF.add(mvR);

mvR.setBounds(40,200,400,40);

mvR.setForeground(Color.BLACK);

mvR.setFont(new Font("ITALIC",Font.BOLD,30));

btS.addActionListener(new ActionListener() {

public void actionPerformed(ActionEvent e)

{

frame1.setVisible(false);

frame2.setVisible(true);

}

}

);

ImageIcon img1=new ImageIcon("F:/five.png");

JLabel bt1=new JLabel(img1);

bt1.setBounds(arrH[0],arrV[0],img1.getIconWidth(),img1.getIconHeight());

pn.add(bt1);

ImageIcon img2=new ImageIcon("F:/three.png");

JLabel bt2=new JLabel(img2);

bt2.setBounds(arrH[1],arrV[1],img2.getIconWidth(),img2.getIconHeight());

pn.add(bt2);

ImageIcon img3=new ImageIcon("F:/eight.png");

JLabel bt3=new JLabel(img3);

bt3.setBounds(arrH[2],arrV[2],img3.getIconWidth(),img3.getIconHeight());

pn.add(bt3);

ImageIcon img4=new ImageIcon("F:/seven.png");

JLabel bt4=new JLabel(img4);

bt4.setBounds(arrH[3],arrV[3],img4.getIconWidth(),img4.getIconHeight());

pn.add(bt4);

ImageIcon img5=new ImageIcon("F:/two.png");

JLabel bt5=new JLabel(img5);

bt5.setBounds(arrH[4],arrV[4],img5.getIconWidth(),img5.getIconHeight());

pn.add(bt5);

ImageIcon img6=new ImageIcon("F:/four.png");

JLabel bt6=new JLabel(img6);

bt6.setBounds(arrH[5],arrV[5],img6.getIconWidth(),img6.getIconHeight());

pn.add(bt6);

ImageIcon img7=new ImageIcon("F:/sixx.png");

JLabel bt7=new JLabel(img7);

bt7.setBounds(arrH[6],arrV[6],img7.getIconWidth(),img7.getIconHeight());

pn.add(bt7);

ImageIcon img8=new ImageIcon("F:/one.png");

JLabel bt8=new JLabel(img8);

bt8.setBounds(arrH[7],arrV[7],img8.getIconWidth(),img8.getIconHeight());

pn.add(bt8);

ImageIcon img9=new ImageIcon("F:/zero.png");

JLabel bt9=new JLabel(img9);

bt9.setBounds(X,Y,img9.getIconWidth(),img9.getIconHeight());

pn.add(bt9);

frame2.addKeyListener(new KeyListener() {

public void keyPressed(KeyEvent e)

{

if(e.getKeyCode()==KeyEvent.VK\_UP && Y<=140 )

{

Y+=70;

j=0;

while(j<8)

{

if(X==arrH[j] && Y==arrV[j])

{

arrV[j]=Y-70;

j=8;

}

j++;

}

move++;

mv.setText("MOVE = " +move);

}

else if(e.getKeyCode()==KeyEvent.VK\_DOWN && Y>=140)

{

Y-=70;

j=0;

while(j<8)

{

if(X==arrH[j] && Y==arrV[j])

{

arrV[j]=Y+70;

j=8;

}

j++;

}

move++;

mv.setText("MOVE = " +move);

}

else if(e.getKeyCode()==KeyEvent.VK\_LEFT && X<=150)

{

X+=70;

j=0;

while(j<8)

{

if(X==arrH[j] && Y==arrV[j])

{

arrH[j]=X-70;

j=8;

}

j++;

}

move++;

mv.setText("MOVE = " +move);

}

else if(e.getKeyCode()==KeyEvent.VK\_RIGHT && X>=150)

{

X-=70;

j=0;

while(j<8)

{

if(X==arrH[j] && Y==arrV[j])

{

arrH[j]=X+70;

j=8;

}

j++;

}

move++;

mv.setText("MOVE = " +move);

}

bt1.setBounds(arrH[0],arrV[0],img1.getIconWidth(),img1.getIconHeight());

bt2.setBounds(arrH[1],arrV[1],img2.getIconWidth(),img2.getIconHeight());

bt3.setBounds(arrH[2],arrV[2],img3.getIconWidth(),img3.getIconHeight());

bt4.setBounds(arrH[3],arrV[3],img4.getIconWidth(),img4.getIconHeight());

bt5.setBounds(arrH[4],arrV[4],img5.getIconWidth(),img5.getIconHeight());

bt6.setBounds(arrH[5],arrV[5],img6.getIconWidth(),img6.getIconHeight());

bt7.setBounds(arrH[6],arrV[6],img7.getIconWidth(),img7.getIconHeight());

bt8.setBounds(arrH[7],arrV[7],img8.getIconWidth(),img8.getIconHeight());

bt9.setBounds(X,Y,img9.getIconWidth(),img9.getIconHeight());

if(arrH[7]==80 && arrV[7]==70)

{

if(arrH[4]==150 && arrV[4]==70)

{

if(arrH[1]==220 && arrV[1]==70)

{

if(arrH[5]==80 && arrV[5]==140)

{

if(arrH[0]==150 && arrV[0]==140)

{

if(arrH[6]==220 && arrV[6]==140)

{

if(arrH[3]==80 && arrV[3]==210)

{

if(arrH[2]==150 && arrV[2]==210)

{

frame2.setVisible(false);

frame3.setVisible(true);

pnF.setBackground(Color.GREEN);

mvR.setText("MOVES TAKEN = "+move);

}

}

}

}

}

}

}

}

}

public void keyReleased(KeyEvent e)

{

}

public void keyTyped(KeyEvent e)

{

}

}

);

}

}