DAYANANDA SAGAR COLLEGE OF ENGINEERING
COMPUTER SCIENCE & ENGINEERING

Minor Project- Report
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Course Faculty: Shravya A R
Course Name & code: Java Mini Project (19CS3DLJPL)
Semester: 3rd CSE Date: 01-04-2022

TITLE OF THE PROJECT	BRICK BREAKER Game			
STUDENT NAME	YASHAS J	ABHISHEK S	RAVIN L Y	INDU P
USN	21UGDS1540	21UGDS1632	21UGDS1784	21UGDS1811
INDIVIDUAL CONTRIBUTION	Made equal Contribution in all parts of project.	Made equal Contribution in all parts of project.	Made equal Contribution in all parts of project.	Made equal Contribution in all parts of project.
PROJECT ABSTRACT:	Brick Breaker Game in Java a is a Breakout clone which the player must smash a wall of bricks by deflecting a bouncing ball with a paddle. We will develop a brick breaker game with java. We will use JFrame and JPanel for drawing different graphics to make this game work perfectly.			
INTRODUCTION	Game Development is one of the fun ways to learn technology. This game development project will give you java knowledge with integration and basic animation techniques. **Project Description:** Some of you already know about the brick breaker game. It has a small ball that hits the bricks with the help of a little platform at the bottom. The player uses this platform to bounce the ball. The more you break the bricks, the more you score. If you miss the ball to bounce then game over. This project is for beginners and gives a basic overview of the game. The following are the milestones of the project implementation.			

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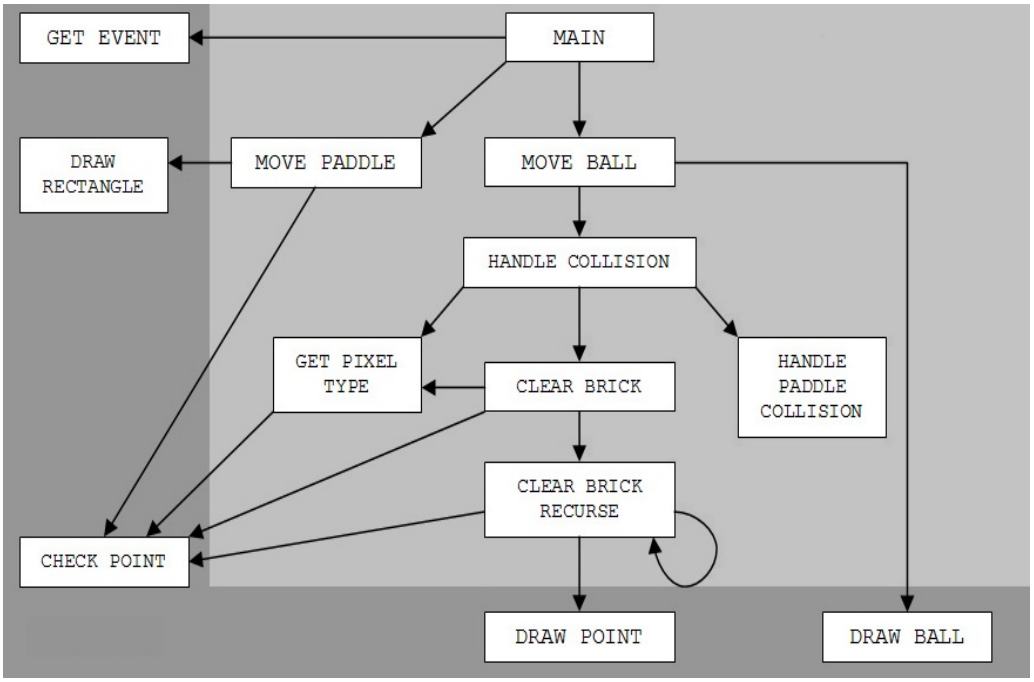
	• Display bricks and disappear after hitting the ball. • Small platform moving left and right • The ball must bounce after hitting brick and platform at the bottom • Score display
DESIGN	
PLATFORM USED (H/W & S/W TOOLS TO BE USED	Software Requirement: • Java Development Kit (JDK) • Eclipse Or Net Beans (IDE) Operating System: • Windows XP Or Later • Other OS…
PROJECT SOURCE CODE LINK (GITHUB/ GOOGLE DRIVE)	https://github.com/Yashas1442/BRICK_BREAKER.git
CONCLUSION /FUTURE ENHANCEMENT	

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	Brick Breaker was a successful educational experience. Brick Breaker demonstrated our learning and new found expertise in Verilog coding.

UI SCREENSHOTS	Main.java Class:
	
	*Main.java
	1 package brickBracker;
	2
	3 import javax.swing.JFrame;
	4
	5 public class Main {
	6
	7 public static void main(String[] args) {
	8
	9 JFrame obj = new JFrame();
	10 Gameplay gameplay= new Gameplay();
	11 obj.setBounds(10,10,700,600);
	12 obj.setTitle("Breakout Ball");
	13 obj.setResizable(false);
	14 obj.setVisible(true);
	15 obj.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
	16 obj.add(gameplay);
	17
	18
	19 }
	20
	21 }
	22
	
	MapGenerator.java Class:

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MapGenerator.java

```java
package brickBracker;

import java.awt.BasicStroke;

public class MapGenerator {

    public int map[][];
    public int brickWidth;
    public int brickHeight;

    public MapGenerator(int row,int col) {

        map = new int[row][col];
        for(int i = 0;i < map.length; i++) {
            for(int j=0;j< map[0].length; j++) {
                map[i][j] = 1;
            }
        }

        brickWidth = 540/col;
        brickHeight = 150/row;
    }
    public void draw(Graphics2D g) {
        for(int i = 0;i < map.length; i++) {
            for(int j=0;j< map[0].length; j++) {
            if(map[i][j] > 0) {
                g.setColor(Color.white);
                g.fillRect(j * brickWidth + 80,i * brickHeight + 50 , brickWidth, brickHeight);

                g.setStroke(new BasicStroke(3));
                g.setColor(Color.black);
                g.drawRect(j * brickWidth + 80,i * brickHeight + 50 , brickWidth, brickHeight);
                }

            }
        }
      }
    public void setBrickValue(int value,int row,int col) {
        map[row][col] =value;

    }

```

Gameplay.java Class:

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*Gameplay.java

```java
package brickBracker;

import java.awt.Color;

@SuppressWarnings("serial")
public class Gameplay extends JPanel implements KeyListener,ActionListener{

    private boolean play = false;
    private int score = 0;

    private int totalBricks = 21;

    private Timer timer;
    private int delay = 5;

    private int playerX = 310;

    private int ballposX = 150;
    private int ballposY = 350;
    private int ballXdir = -1;
    private int ballYdir = -2;

    private MapGenerator map;

    public Gameplay() {
        map = new MapGenerator(3,7);
        addKeyListener(this);
        setFocusable(true);
        setFocusTraversalKeysEnabled(false);
        timer = new Timer(delay, this);
        timer.start();
    }

    public void paint(Graphics g) {


        //background
        g.setColor(Color.black);
        g.fillRect(1,1, 692, 592);

        //drawing map
        map.draw((Graphics2D)g);

```

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```
55
56          //borders
57          g.setColor(Color.yellow);
58          g.fillRect(0, 0, 3, 592);
59          g.fillRect(0, 0, 692, 3);
60          g.fillRect(691, 0, 3, 592);
61
62          //scores
63          g.setColor(Color.white);
64          g.setFont(new Font("serif", Font.BOLD, 25));
65          g.drawString(""+score , 590,30);
66
67
68
69          //the paddle
70          g.setColor(Color.green);
71          g.fillRect(playerX, 550, 100, 8);
72
73          //the ball
74          g.setColor(Color.yellow);
75          g.fillOval(ballposX, ballposY, 20, 20);
76
77          if(totalBricks <= 0) {
78              play = false;
79              ballXdir = 0;
80              ballYdir = 0;
81              g.setColor(Color.red);
82              g.setFont(new Font("serif", Font.BOLD, 30));
83              g.drawString("YOU WON", 260,300);
84
85              g.setFont(new Font("serif", Font.BOLD, 20));
86              g.drawString("Press Enter To Restart", 230,350);
87
88          }
89
```

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```
90          if(ballposY > 570) {
91              play = false;
92              ballXdir = 0;
93              ballYdir = 0;
94              g.setColor(Color.red);
95              g.setFont(new Font("serif", Font.BOLD, 30));
96              g.drawString("GAME OVER Scores:"+score, 190,300);
97
98              g.setFont(new Font("serif", Font.BOLD, 20));
99              g.drawString("Press Enter To Restart", 230,350);
100         }
101
102         g.dispose();
103     }
104
105     @Override
106     public void actionPerformed(ActionEvent e) {
107         timer.start();
108
109         if(play) {
110             if(new Rectangle(ballposX, ballposY,20,20).intersects(new Rectangle(playerX, 550, 100,8))) {
111
112                 ballYdir = -ballYdir;
113             }
114
115              A: for(int i = 0;i< map.map.length;i++) {
116                 for(int j = 0;j<map.map[0].length; j++) {
117                     if(map.map[i][j] > 0) {
118                         int brickX = j * map.brickWidth + 80;
119                         int brickY = i * map.brickHeight + 50;
120                         int brickWidth = map.brickWidth;
121                         int brickHeight = map.brickHeight;
122
123                         Rectangle rect= new Rectangle(brickX,brickY,brickWidth,brickHeight);
124                         Rectangle ballRect = new Rectangle(ballposX,ballposY,20,20);
125                         Rectangle brickRect = rect;
126
127                         if(ballRect.intersects(brickRect)) {
128                             map.setBrickValue(0, i, j);
129                             totalBricks--;
130                             score += 5;
131
132                             if(ballposX + 19 <= brickRect.x || ballposX +1 >= brickRect.x + brickRect.width) {
133
134                                 ballXdir = -ballXdir;
135                             }
136                             else {
137                                 ballYdir = -ballYdir;
138                             }
139
140                             break A;
141                         }
142
143                     }
144                 }
145
146             }
147
148
149             ballposX += ballXdir;
150             ballposY += ballYdir;
151             if(ballposX < 0) {
152                 ballXdir = -ballXdir;
153             }
154             if(ballposY < 0) {
155                 ballYdir = -ballYdir;
156             }
157             if(ballposX > 670) {
158                 ballXdir = -ballXdir;
159             }
160         }
161         repaint();
162
163     }
```

```
164
165     @Override
166     public void keyTyped(KeyEvent e) {}
167     @Override
168     public void keyReleased(KeyEvent e) {}
169
170     @Override
171     public void keyPressed(KeyEvent e) {
172         if(e.getKeyCode() == KeyEvent.VK_RIGHT) {
173             if(playerX >= 600){
174                 playerX = 600;
175         }
176         else {
177             moveRight();
178         }
179         }
180
181         if(e.getKeyCode() == KeyEvent.VK_LEFT) {
182                 if(playerX < 10) {
183                     playerX = 10;
184             }
185             else {
186                 moveLeft();
187             }
188         }
189
190
191         if(e.getKeyCode()== KeyEvent.VK_ENTER) {
192             if(!play) {
193                 play = true;
194                 ballposX = 120;
195                 ballposY = 350;
196                 ballXdir = -1;
197                 ballYdir = -2;
198                 playerX = 310;
199                 score = 0;
200                 totalBricks = 21;
201                 map = new MapGenerator(3,7);
202
203                 repaint();
204             }
204             }
205         }
206     }
207
208     public void moveRight() {
209         play = true;
210         playerX+=20;
211     }
212     public void moveLeft() {
213         play = true;
214         playerX-=20;
215     }
216
217 }
218
```

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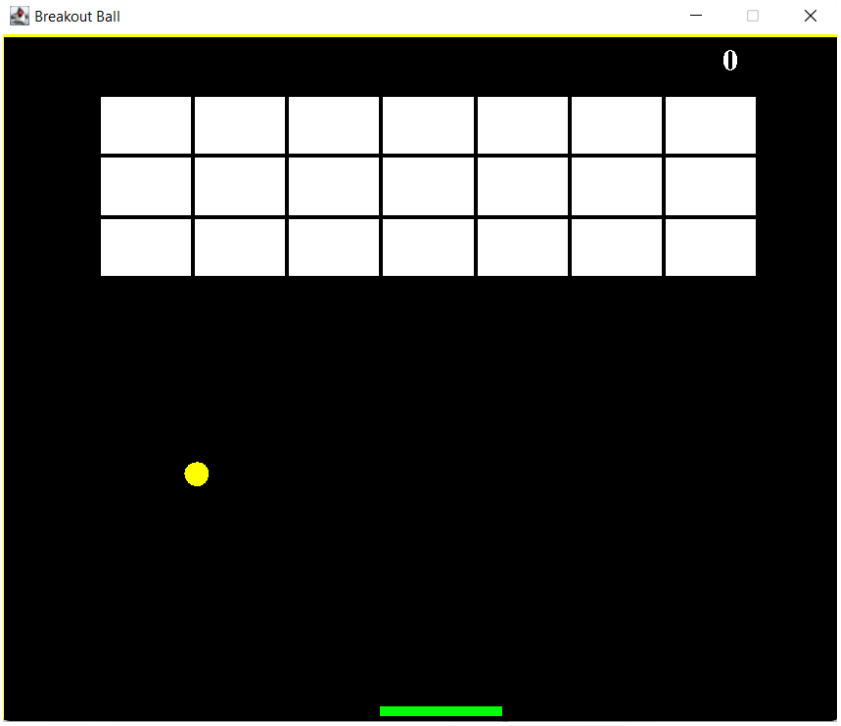
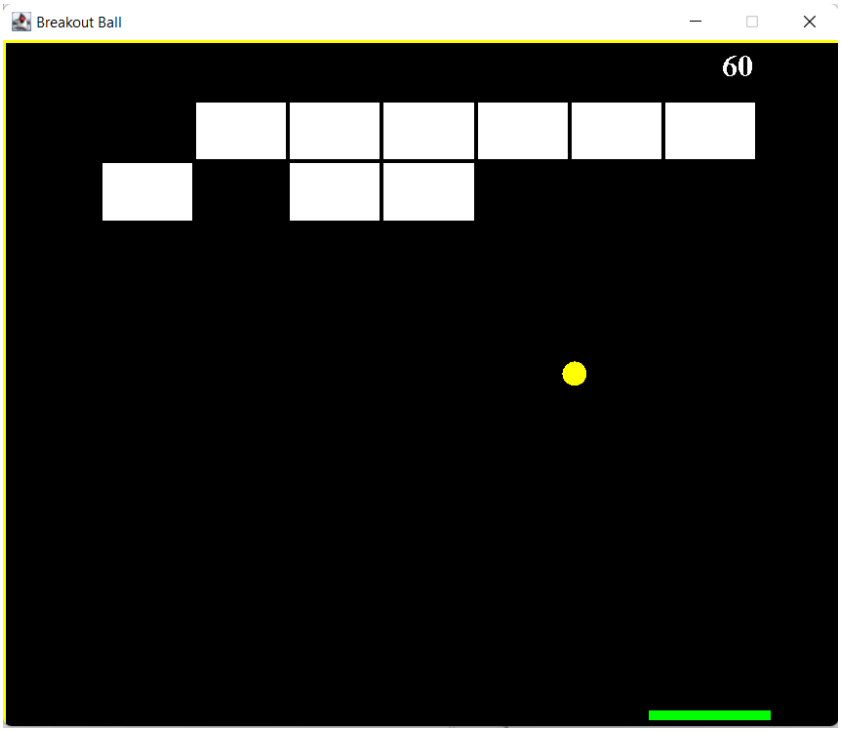
An instance of the game in action:





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