dA Report on GAME HACKATHON 2024
Titled
"GameGen: Conquer Algorithmic Challenges in Gaming using Java"

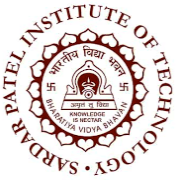
Report Made by

Will Of D
Devendra Birari 2023510006
Lalit Chandora 2023510009
Omkar Chavan 2023510011
Shivaji Ware 2023510065

FYMCA Sem-II
Academic Year: 2023-24
ISE-2 (DAA and JAVA)

Under the Guidance of

Dr. Aarti Karande
Prof. Sakina Salmani



Master of Computer Applications Program
Computer Science and Engineering Department
Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
Munshi Nagar, Andheri (W), Mumbai – 400 058.
(Autonomous Institute Affiliated to University of Mumbai)

Date: 16th April 2024

Group Member Description along with Lates Photo

Group member Name	**Description of the person (Tell about yourself which best describes you as a person and as professional)**
Devendra Birari	My name is Devendra Birari. I hold a Bachelor's degree in Computer Science from Patkar College in Mumbai university & Currently pursuing Master's degree in Computer Applications from Sardar Patel Institute of Technology.
Lalit Chandora	My name is Lalit Chandora. Currently, I am pursuing Post Graduation in Computer Application from Sardar Patel Institute of Technology. I have completed my bachelors in Computer Science from D.G. Ruparel College. I have more than 2 years of experience as a Software Developer working in MERN tech stack. I am driven by my ability to solve problems using technology.
Omkar Chavan	My name is Omkar Chavan . Currently pursuing MCA(Master of Computer Application) from Sardar Patel Institute Of Technology . I have completed my bachelors in Computer Science from Bhavans College
Shivaji Deepak Ware	Self-motivated, incredibly passionate and hardworking newcomer looking for an opportunity to work in a demanding business and contribute my skills and expertise to the organization’s success. Capability to translate company requirements into cutting edge software products. looking to start a new career as an entry level software engineer and a data scientist working at a prominent tech-company.

Group Photo :

Table of Contents

Description of Game and Motivation :

Flow Free is a fun and addictive puzzle game where you connect matching colored dots with pipes to create a flow. Here's how it works:

1. Gameplay Board: When you start, you see a grid filled with dots of different colors.

2. Connect the Dots: Your goal is to connect pairs of matching colored dots by drawing pipes between them. For example, if there's a blue dot and another blue dot on the grid, you draw a blue pipe to connect them.

3. Fill the Board: Keep connecting the dots until you've used up all the space on the grid, but be careful! Pipes cannot overlap, so you need to plan your connections carefully to ensure there are no blockages.

4. Challenge Yourself: As you progress through the game, the grids become larger and more complex, making it trickier to connect all the dots without overlapping pipes.

5. Complete Levels: Each level has a set number of grids to complete. Once you've successfully connected all the dots on a grid without any overlaps, you move on to the next level.

6. Hints and Solutions: If you get stuck, don't worry! You can use hints to help you find a way to connect the dots, or even reveal the solution if you're really stuck.

7. Enjoy the Flow: Flow Free offers hundreds of levels with varying grid sizes and difficulties, ensuring hours of challenging and entertaining gameplay.

The game's motivation stems from its intuitive gameplay mechanics and minimalist design. With no time limits or pressure, players can enjoy a relaxing yet mentally stimulating experience as they immerse themselves in the challenge of connecting the dots and creating seamless flows.

Tools used (Both frontend and Backend):

Frontend: Java AWT, Swing
Backend: Java
IDE: Netbeans

Detailed Innovation description:

Game Board:

The game board consists of a 6x6 matrix of squares.
Each square can contain two types of pieces: dots or lines.
Dots are placed on the vertices of the grid, while lines connect these vertices.
Objective:

The objective of the game is to generate a line connecting one vertex to another vertex on the game board.The line can move horizontally or vertically from one vertex to another.When a line is drawn between two vertices, any squares between them are filled with the color corresponding to the line's color.

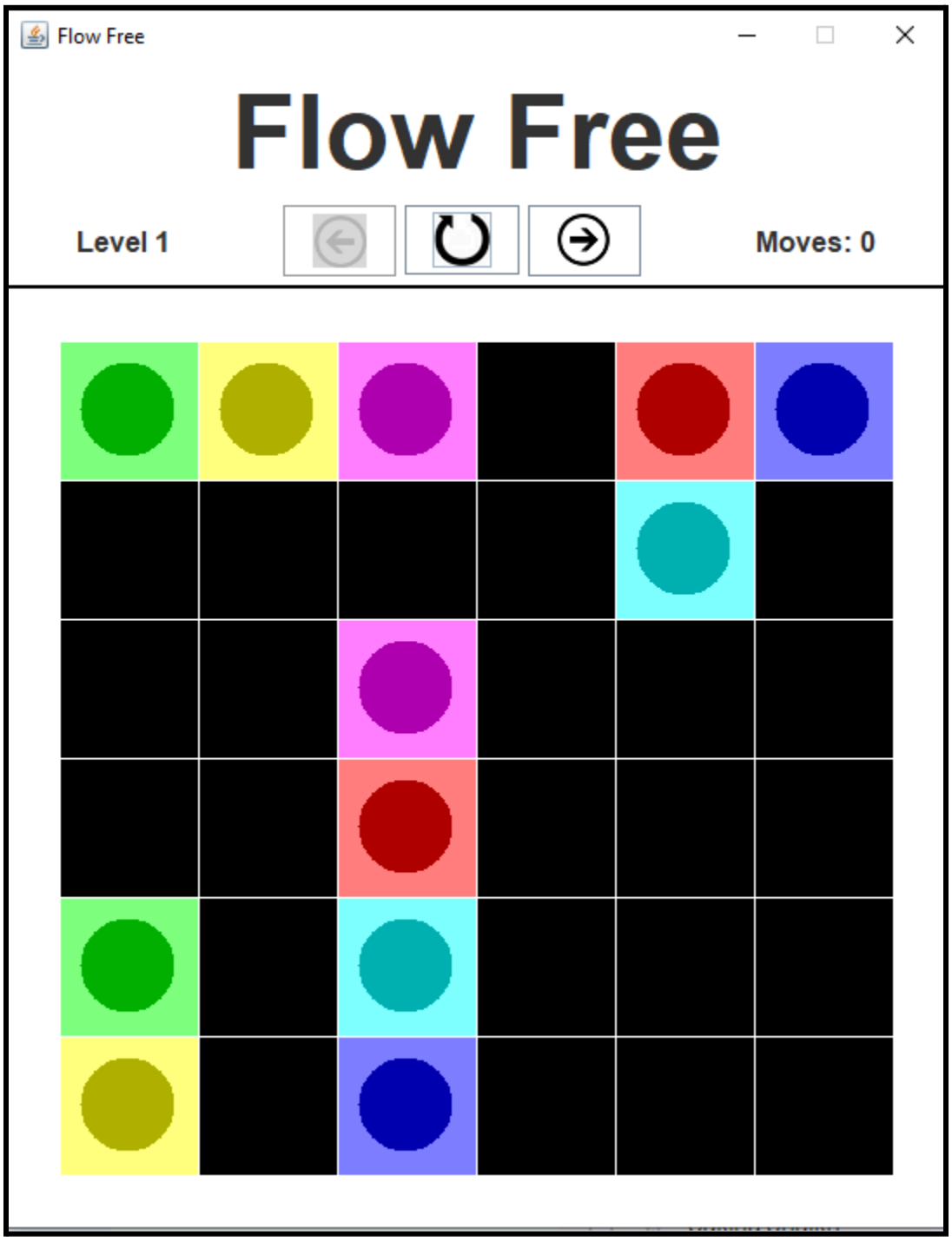
Game Mechanics:
Players interact with the game board by clicking on squares to draw lines.
When a line is drawn between two vertices, any squares in between are filled with the color corresponding to the line's color.If a square already contains a piece (dot or line) other than black, it is replaced with the corresponding color of the newly drawn line.Players continue drawing lines and filling squares until all vertices are connected.

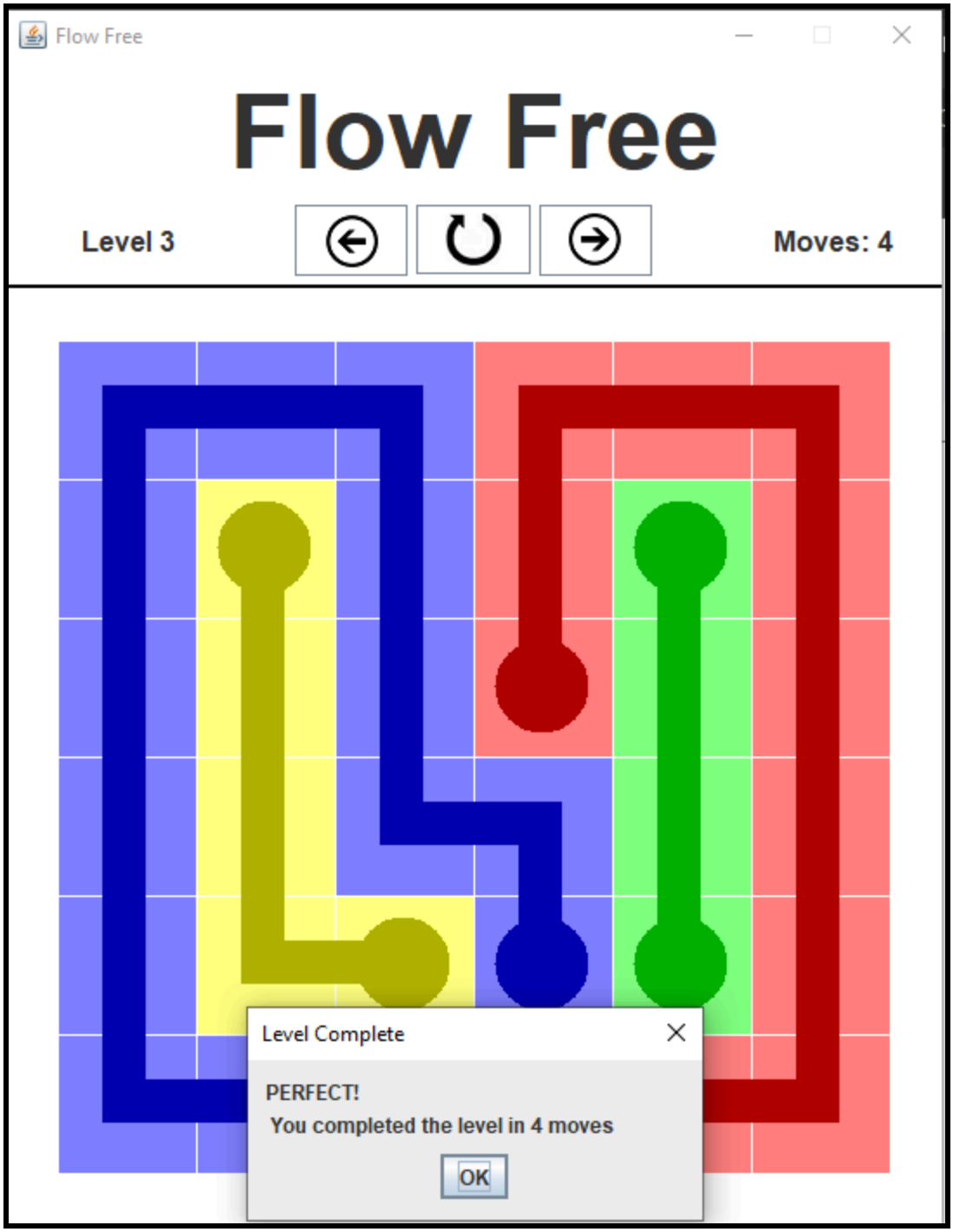
Win Condition:
The game is won when all vertices on the game board are connected by lines, forming a complete path.When all vertices are connected, it ensures that all squares on the game board are filled, and no squares remain empty.The game declares the player as the winner when this condition is met.

Game Progression:
Players progress through the game by strategically drawing lines to connect vertices.
They must plan their moves carefully to ensure that all vertices are connected efficiently.
If a line is drawn incorrectly or blocks the path to connect all vertices, players may need to backtrack and undo their moves.

Game Interface:
The game provides a graphical interface where players can visualize the game board and interact with it by clicking on squares.Visual cues such as colors are used to distinguish between different types of pieces (dots and lines) and to indicate the connectivity of vertices.Overall, the game provides a challenging puzzle experience where players must strategically plan their moves to connect all vertices and fill the entire game board, ultimately achieving victory by completing the path.

Screenshots





References

https://www.youtube.com/
https://www.stackoverflow.com/