Course Project Documentation

CS-101

Team ID-422

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Introduction

Chain Reaction is basically a strategy based game.The objective of the chain reaction is to take control of the grid by occupying all the cells by eliminating opponent's orbs. The game is played between multiple players with user friendly environment.

Problem Statement

We wanted to provide users a game which is a sweet spot between strategy and arcade gaming. Our aim was to keep the functioning of game as simple as possible so that user can play this game anywhere , anytime. The main problem to build this code was to make a function which works recursively to make orbs explode.
The other problems were making a function which declares the winner , change of color of grids & orbs according to the turn

Requirements

A.Hardware Requirements

One personal computer

B.Software Reqirements

1)Windows/Ubuntu OS

2)Simplecpp/Codeblocks compiling Software

*link to download simplecpp-

http://www.cse.iitb.ac.in/~ranade/simplecpp/

Implementation

The whole game is designed using ‘simplecpp’ library.First we designed this game for 2 players and for two player we designed the function such as Explode,Expand,Draw_grid,etc used in the game.

After Writing functions successfully for 2 player game we implemented it for 3 & 4 players consecutively.
and debugged the code once again.

A)Functionality

a)User should place orbs in an empty cell or a cell which contains its orb

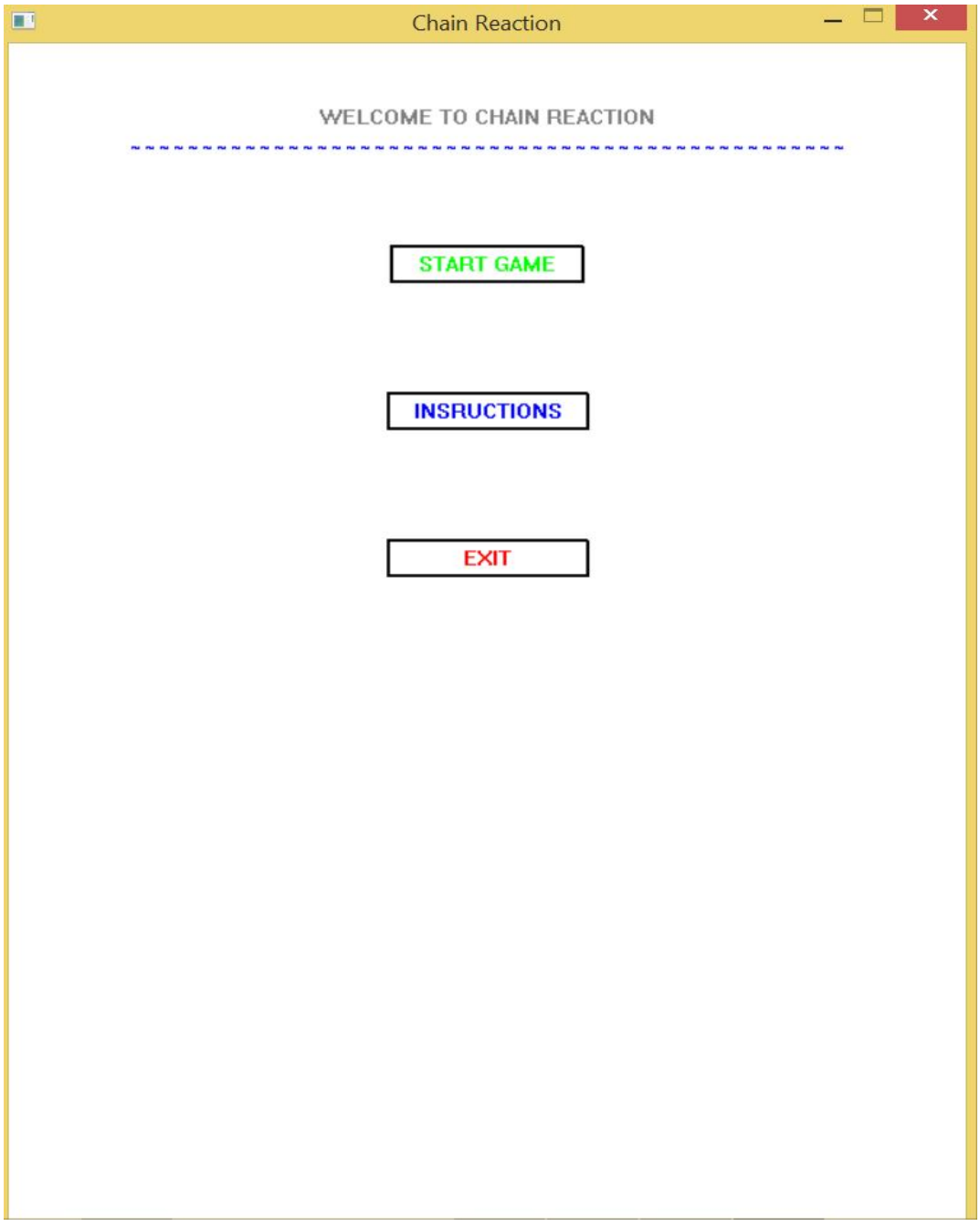
b)If in a cell orbs are filled upto critical mass then additon of an extra orb will lead to explosion

c)Explosion will encapsulate the surrounding orbs by changing their color corresponding to exploding orbs color

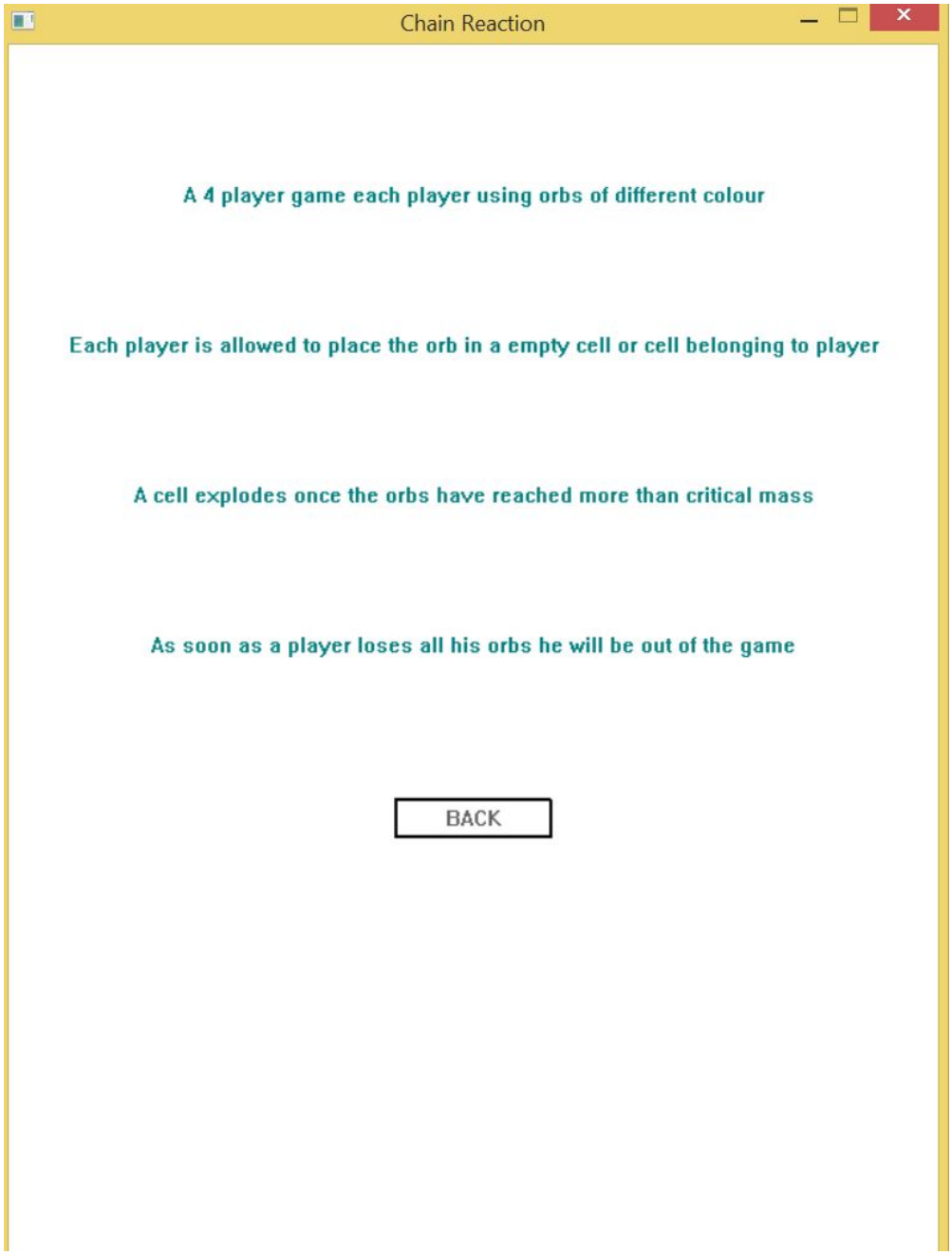
d)If surrounding cells are also filled upto critical mass then they will also explode,this process will continue recursively till all the filled cells explode.

e)To win this game against others one should take control of grid by changing all the orbs in to his orbs

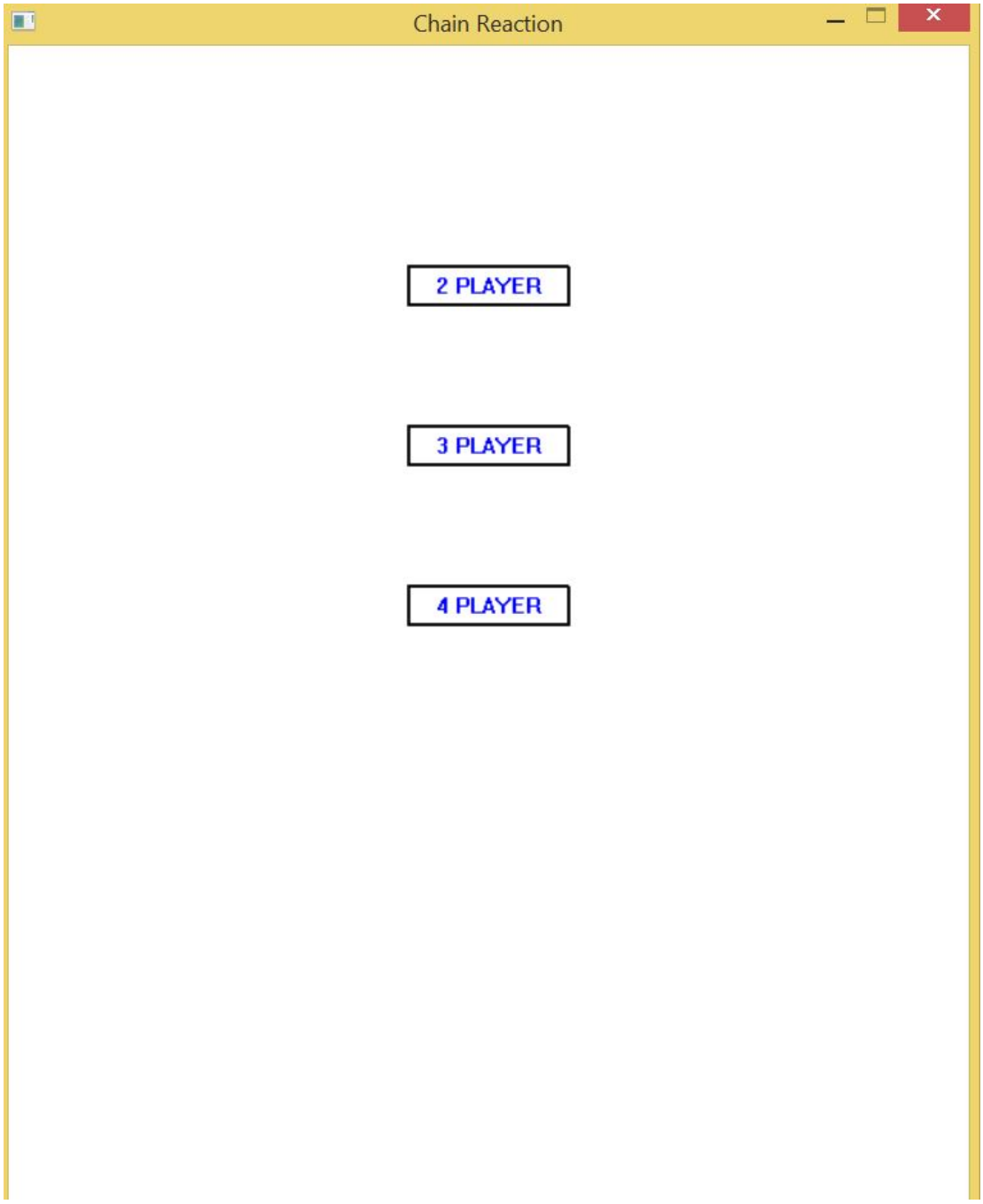
B)Screenshots of game



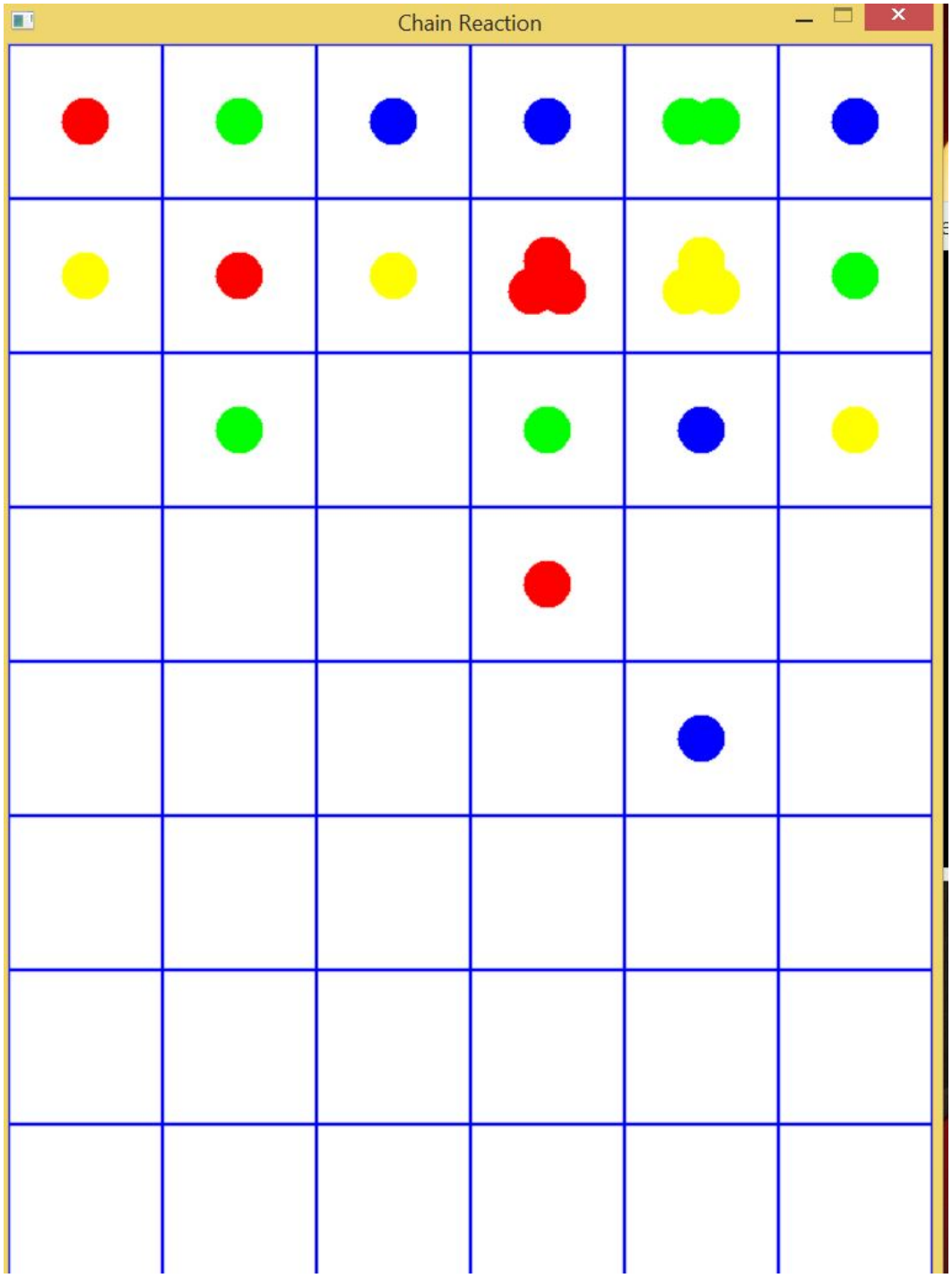
Home page of game



Instructions



Selection of No of players



Gameplay

Discussion of systems

A)What are worked as per plan?

According to our plan we decided to make the game first for 2 players and then extend it to multiplayer gaming. So we followed the same plan and came up with multiplayer game with options of 2,3&4 player options.

B)Changes made in plan

So far we hadn't made any major changes in plan,but we had some problem with algorithm of explode and expand function,these functions were not working properly on some part of grid so we had to change our code and change it according to new algorithms

Future Work

1) For our project , we are not intending to give Artificial Intelligence to this game Because the probability analysis of the game would take very much time and it is really hard to cover all the probable moves in such a small period of time . So for future work, this might be a milestone.
2) Also we can work more on graphics of this game also we can add some sound effects,in game knockout rounds.
3) This game can be extended to a 3-D model which would be a fun concept.

Conclusion

This game is all about strategy & tactics. We designed this game for a multiplayer gaming experience on a single device. Design of this game is very compatible for upcoming touchscreen devices.

References

1) Wikipedia

2) The ‘Chain Reaction’ game available in android phones.