CS101

SOFTWARE

PROJECT

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Table Of Contents

Introduction

One of the most popular ways of recreation in today's digital world is computer games. It's one of those things given to us by the computer, which is praised and enjoyed by billions around the globe. With these thoughts in our mind we decided to use our newly acquired programming knowledge to create the famous computer game "Chain Reaction"- a game which has about 89, 10,000 results (0.31 seconds) on the google website and is a regular
feature of Google play store .

Problem Statement

To create a replica of the Chain reaction game provided by various websites and Google play store. We are using the knowledge bestowed onto us in the CS101 course, You tube videos and also with the help of some of the websites.

Requirements:

Hardware :

The actual game was basically for smart phone users which includes ANDRIOD and MAC users, this current game is designed for PC's so WINDOWS, MAC, LINUX (UBUNTU) with basic RAM from 100MB,HARD DISC MEMORY OF 2GB and KEYBOARD,MOUSE which are already essential in a computer, can run the game.

Software:

The system shall be capable of running on any version of UNIX system including Linux (from UBUNTU 8.04) and also on Windows(from 98).

Communication:

This game is confined to only one device. Hence, there is no association with communication functions, including e-mail, web browser, network server communications protocols, electronic forms, and so on.

Implementation:

when a player click on a empty cell, a ball of color specified for him appears in that cell. A player can not click on a cell containing balls of other players.
This game basically works on concept of critical mass. Critical mass of every cell of grid is decided. If mass in that block reaches it's critical level, it bursts and distribute that mass equally in neighbour cells. Here, critical mass is represented in terms of no. of balls. For corner cells, critical mass is tow balls. For cells at edge (except corner), critical mass is three balls. And for cells at centre, critical mass is four balls.

When this blocks bursts, one ball is added to neighbouring cell. If neighbouring block contains balls of other player, they are converted into balls of current player.

Actual motto of game is to destroy balls of other player. Game ends when all balls present in grid are of only color i.e of only one player. And that player is declared as a WINNER.

Discussion of System:

A. What are worked as per plan?

1. A multiplayer game has been created ranging from 2 to 5 players.

2. On each click on the cell of the grid the number of orb increase by 1.

3. A user friendly graphics cater the interest of player to play the game.

4. Each player has been designated a separate colour which appears to the orb and the grid according to the turn of that player.

5. The orbs in a cell explode once the mass of the cell reaches critical value(maximum number of orbs each cell can have) to the neighbouring cells .

6. The game ends when the orbs of other players are eliminated and only single colour orbs are present.

7. The game also displays the result of the game(which player has won the game).

8. The turn of which player is going on is also displayed.

B) What we added more than discussed in SRS?

1. An undo option is added in the 2 player game which enables the user to undo the last step it performed.

2. The graphics of the game has been modified to make the game more user friendly and caters the interest of one to play it.

(C) Changes made in plan:

1. The game is made upto 5 players game.
2. Size of the grid is changed from 6x9 to 6x6.

Future Work :

1. Some modifications can be introduce to the grid.

   eg.,(1) Removal of 1x1 or 2x2 squares in between the main grid.

   (2) Increment in number of squares.

2. The graphics of the balls can be improved further.

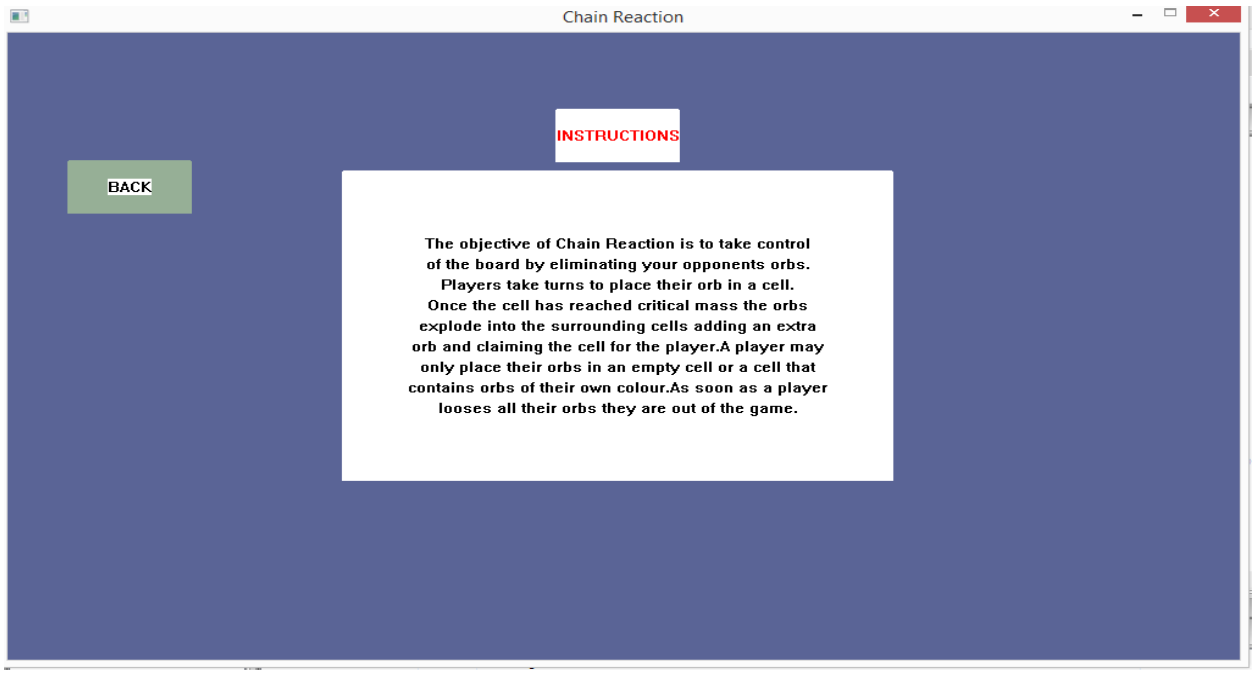
   eg., (1)The balls can be rotated to give a 3-D effect.
   (2)Game can be made more interesting to play by introducing sound to it.
   (3)Allowing an option to use different shapes to play rather than a simple round ball.
   (4)Allowing an option to user to select colours of their own choice.

Testing Strategy and Data:

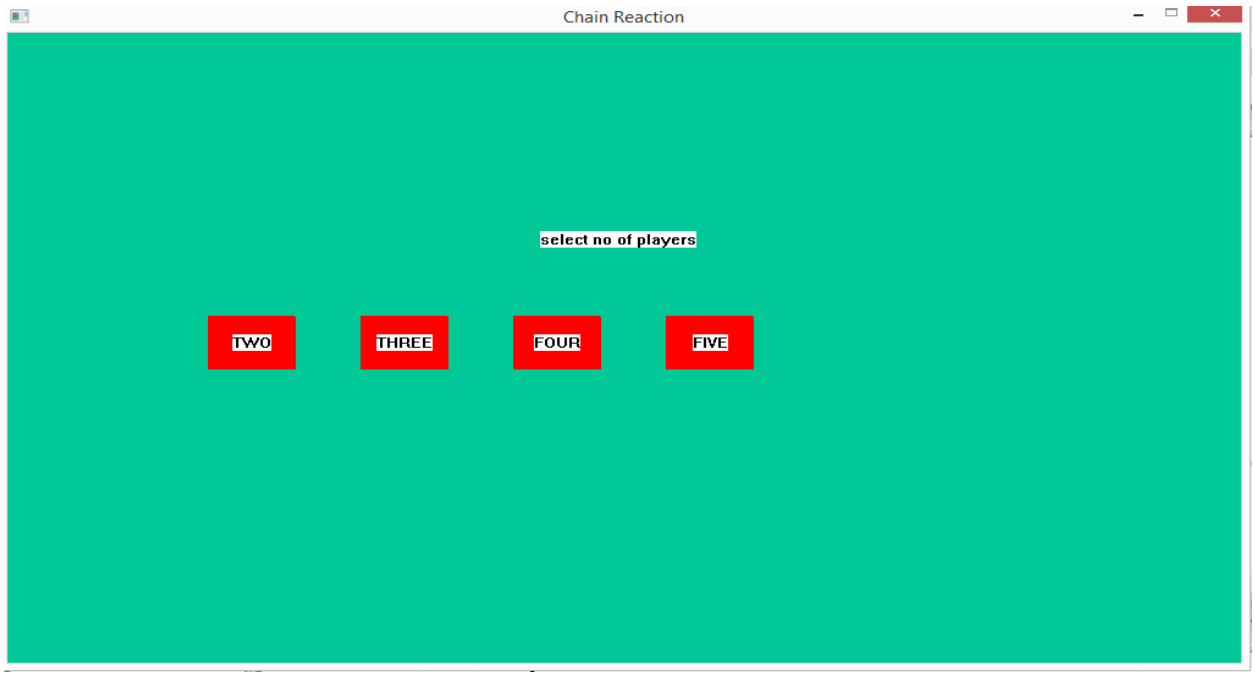
1. The game opens with the page containing the options to play the game or read instructions regarding the game.

which takes you to any of the two following pages depending on the option you choose.

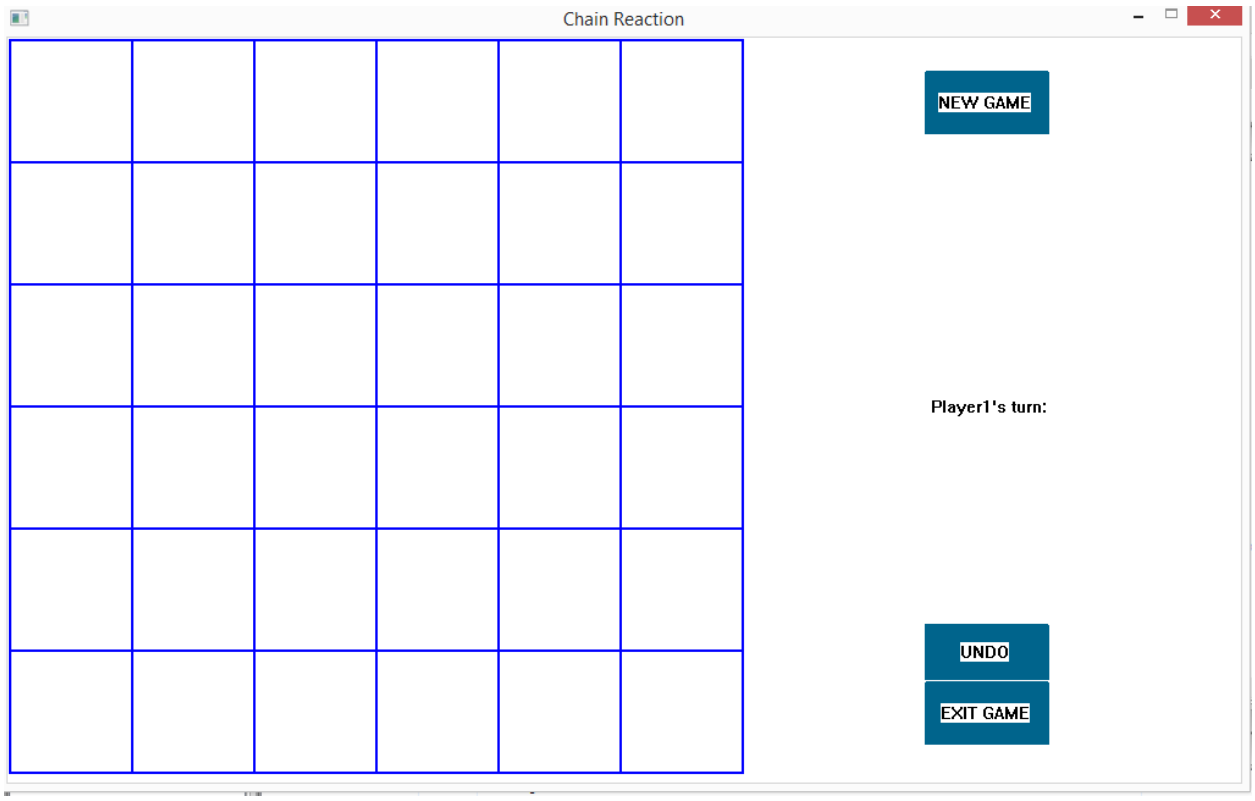
On selecting "Instructions" option



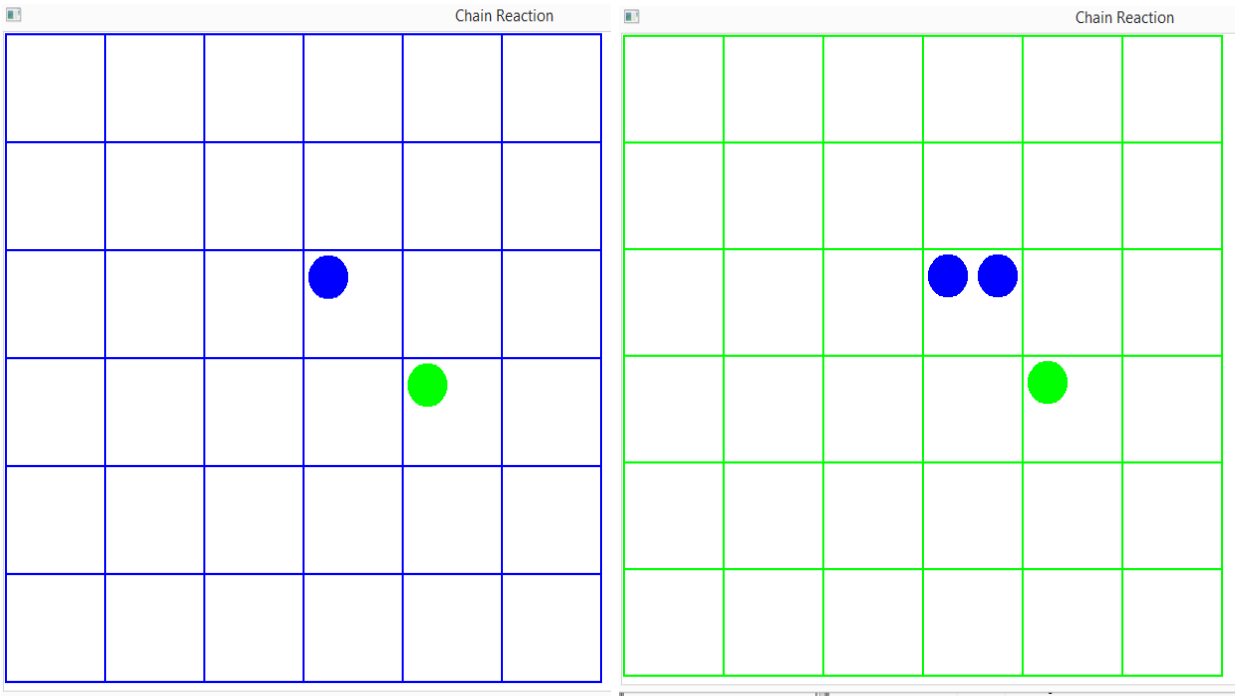
On selecting "play" option



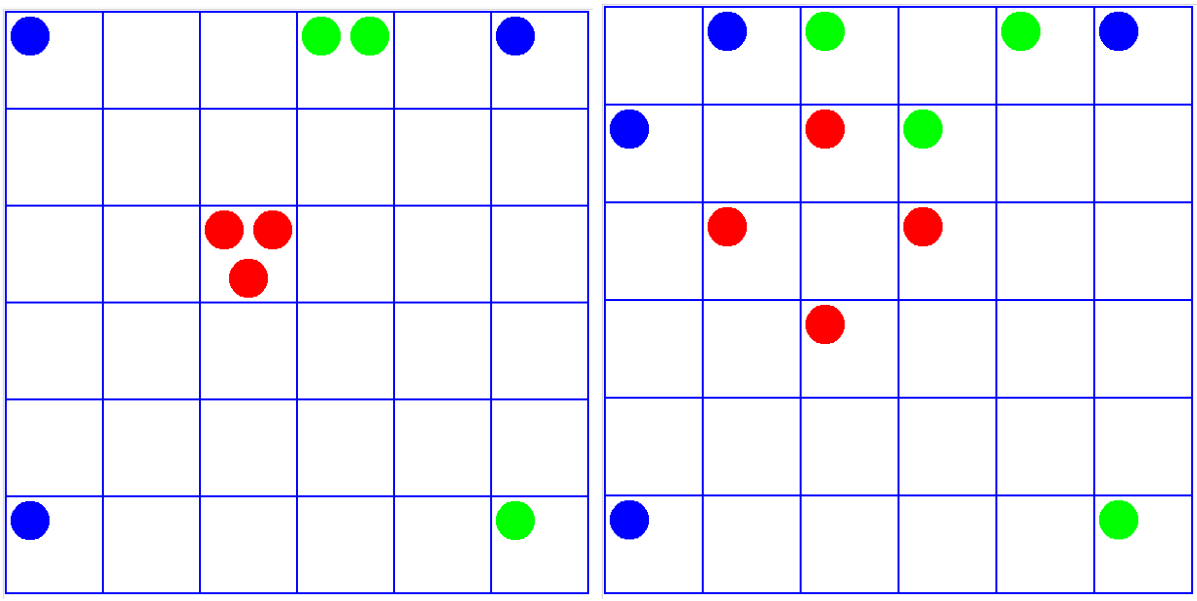
2.On selecting the cell of the grid orb appears of the colour assigned to that particular player.The colour of the grid helps us to identify whose chance is going on, which can also be determined by the message displayed on right side which tells us which player's chance is going on.



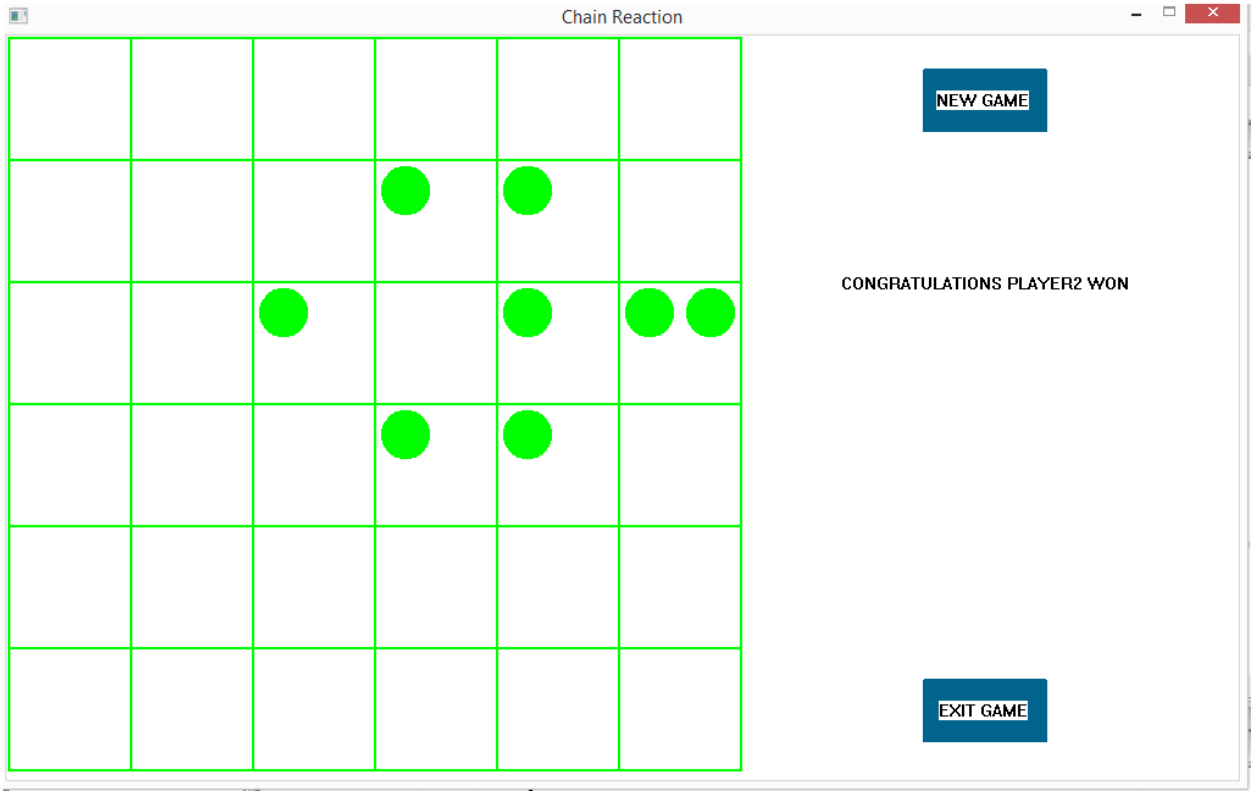
3. The number of orbs in cell increase by 1 with each click on that cell.



4.The orbs explode to neighbouring cell when the number of orb reaches the critical value of that particular cell.



5.The game ends when the orbs of one player eliminates the orbs of all the other players and only the orbs of that player are only present in the grid.The message appears on the right side indicating who has won the game.


Chain Reaction
NEW GAME
CONGRATULATIONS PLAYER2 WON
EXIT GAME

Conclusions:

The goal of this project is to construct a user-friendly program to enable users to play the game "CHAIN REACTION" is reached. . The game is inspired by the underlying principle of the chain reactions in chemistry which take place due to instability of heavy nuclei. The game is a user friendly game which uses a mouse for input and has simple interface played by two or more players(users).Most of the data used in the program is generated by the system by runtime. This is handled by using variables and other arrays among other data structures.The system shall be capable of running on any version of UNIX system (including Linux) and also on Windows.

This project gave us an opportunity to get a flavour of CS101 in real life. Only knowledge do not contribute much to understand the particular thing written on paper, its application make us realise its importance. This project helped us to make use of our knowledge to apply it to create a game which thus can act to refresh our mind.

References:

www.programmer2programmer.net

www.sourcecodeonline.com

www.itstudentjunction.com