Course Project Documentation

PAC-MAN

A Cs 101 project

TEAM ID-291

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1.Introduction

This project is an attempt to make the popular game "PACMAN" using C++ language. It consists of the basic elements that a regular pacman game consists of.
 With the use of simple cpp library notion of the game has been accomplished.

2. PROBLEM STATEMENT

The game has 2 mazes and the movement of the pacman is decided by the user. It can move up, down, left or right as per the user commands. The pacman goes around an arena bounded by the walls and it has to save itself from the ghosts. On consuming the pacdots the score increases. There are 4 special pacdots. On consuming the special dots reverse happens i.e now the pacman can kill the ghosts for a short period of time.

The ghosts will be autonomous whose function is to look around the maze for the pacman and kill it.

3.Requirements

A) Hardware Requirements

The program needs minimal specifications to run
The input is through usual keyboard and mouse, and
output will be through screen.

B) Software requirements

Linux based operating system compatible with
simplecpp.

4.Implementation

A) **Movement of Pac-man:** The pac-man is constrained to move between the obstacles not through them.

B) **Movement of Ghosts:** The ghost is also constraint to move between the spaces provided in the maze. Also the movement of ghost is random which changes with time

C) **Pac-dots:** Pac-dots are created using arrays. Pac-man has to move around the maze and eat all the pac-dots to increase its score.

D) **Power-dots**: Power-dots provide special power to pac-man which allows the pac-man to kill the ghost within a short period of time.

E) **Collision**: Collision of ghost and pacman results in either pac-man or ghosts' annihilation.
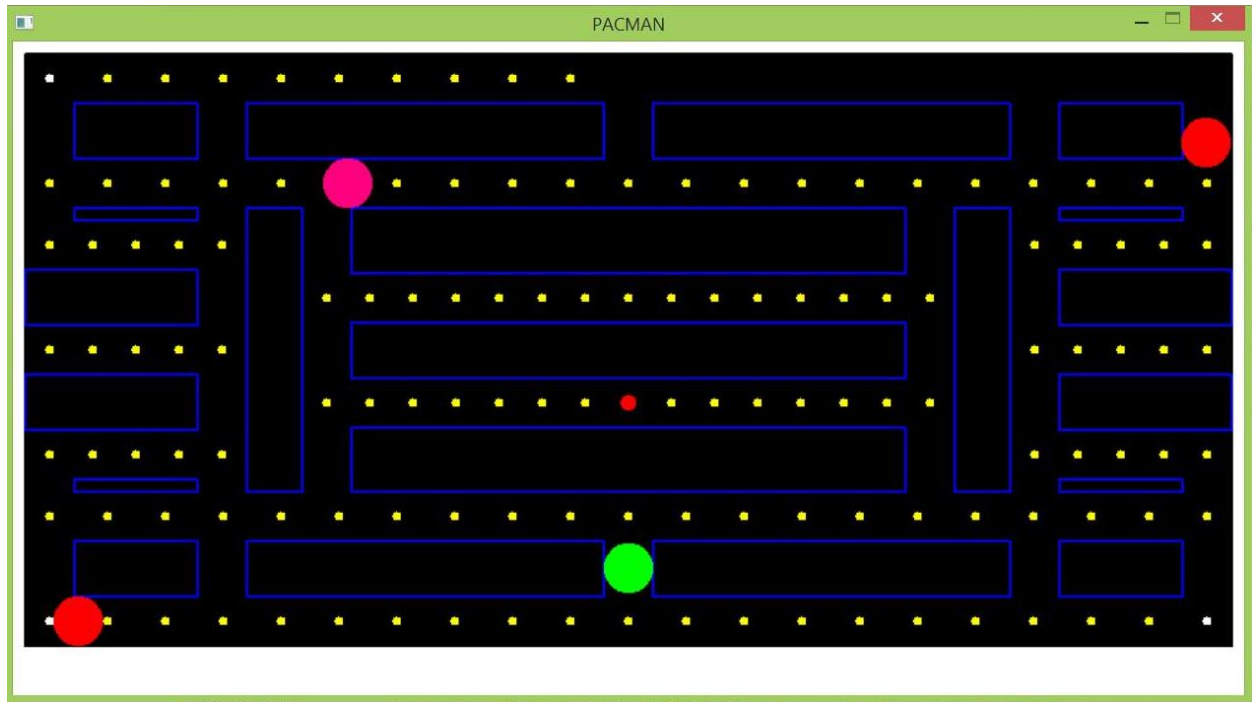
5. Testing strategy and data

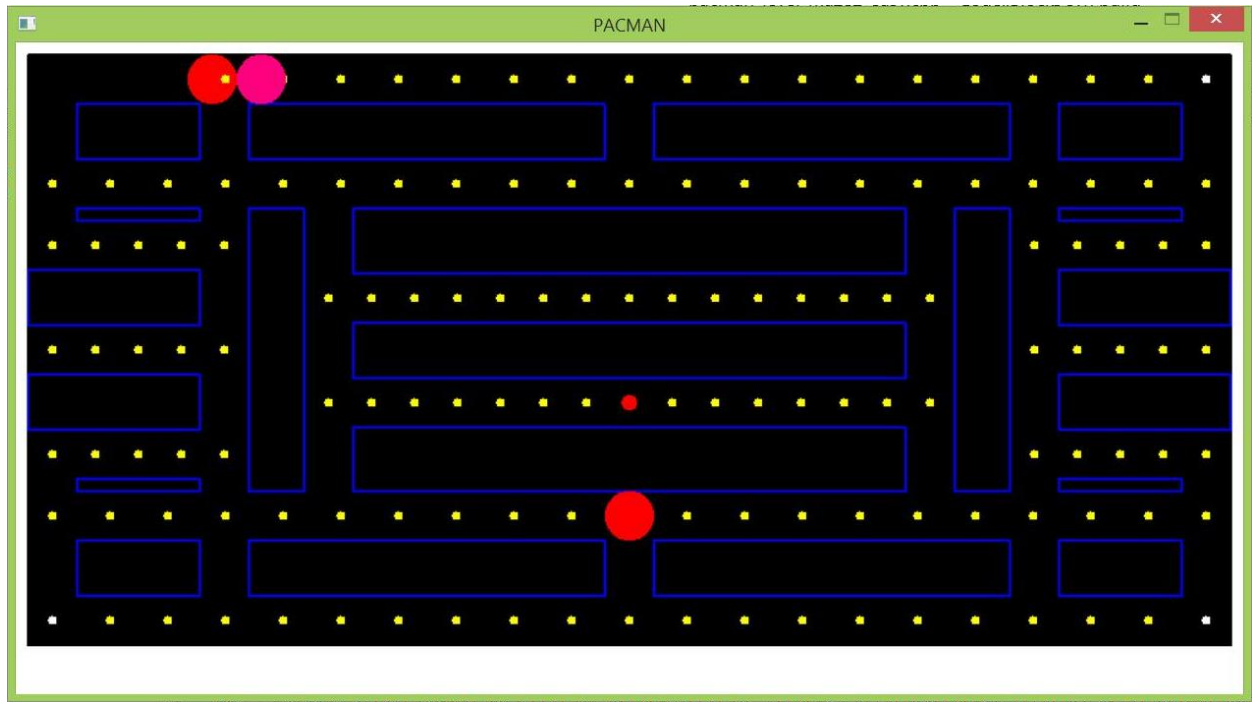The game has been run for various cases
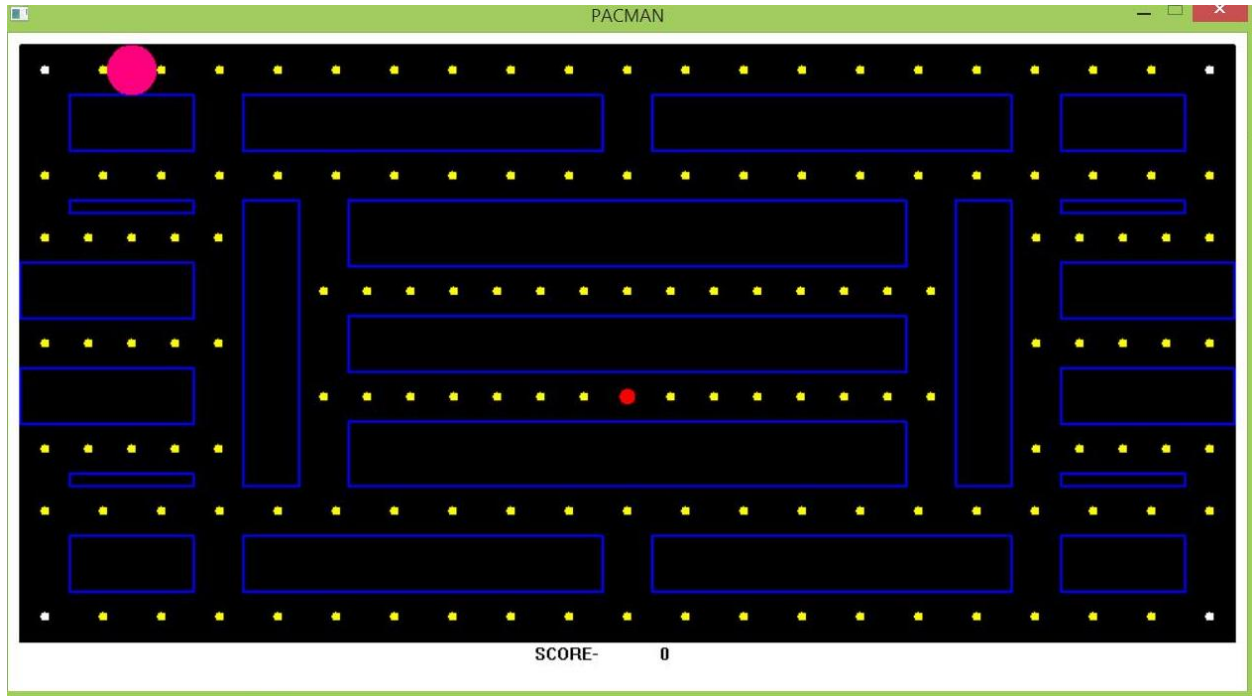
1. Pac-man eating pac-dots
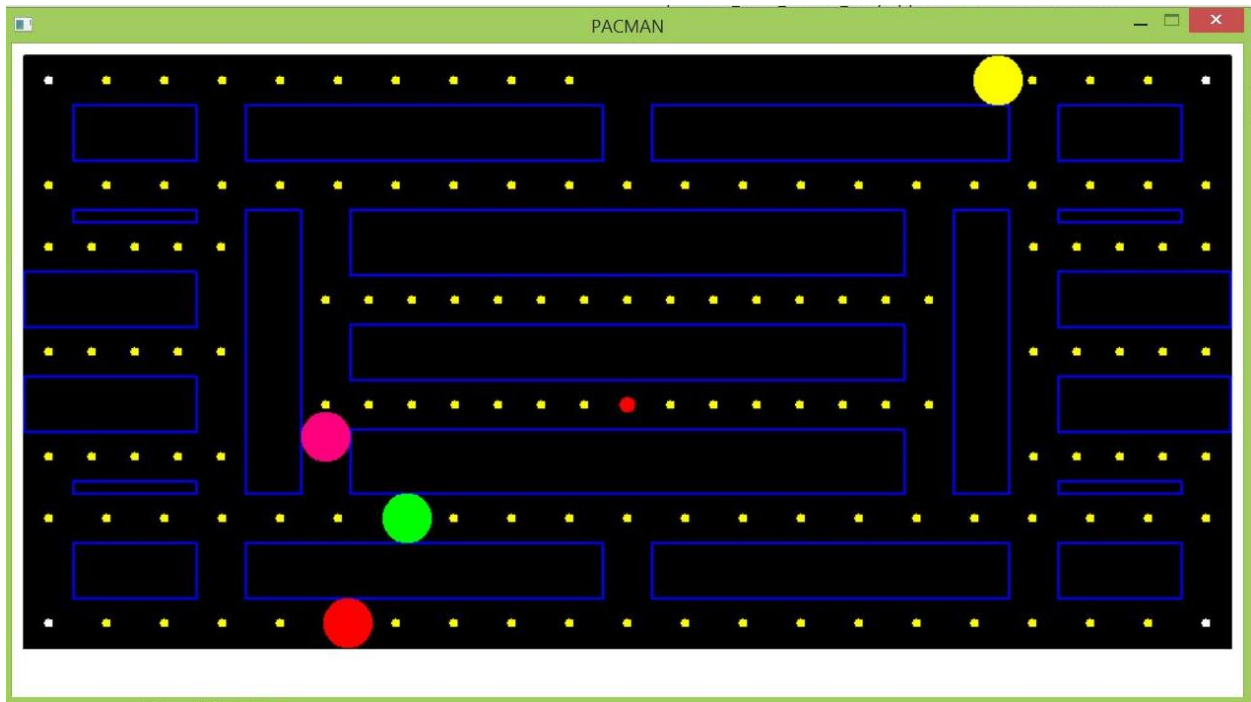
2. After eating the power dot its color changing and gets the ability to kill ghost

3. Ghost eating pac-man results in losing one of its lives.

4. After losing all the lives score being displayed at the bottom

6. Discussion of system

- The Pac-man moves inside the maze governed by constraints.
- The pac-man eats the pac-dots and accumulate score.
- The ghost moves randomly inside the maze looking for pac-man.
- Collision of pac-man and ghost leads to pac-man's death (in ordinary cases).
- Only when pac-man is under the effect of power dot then it can kill the ghost. The ghost will respawn on this own.
- When the pac-man loses all its lives, the score is displayed and the game ends.

7.Future Work

In our current implementation the ghost is doing random motion. If work is done on the project the chasing algorithm can be perfected to chase the Pac-man more efficiently and to create the game even more challenging.

We used simplecpp graphics in our project. The game can be made even more appealing if coded in advanced graphics like allegro, sdl et cetera.

We currently designed two mazes but can be extended to multiple arenas.

Score is displayed only at the end but can be modified to provide a live update.

8.Conclusion

So, we have created an interesting and dynamic game: "Pacman" using what we learnt in the course CS101. Making this project has given us some real-life software development experience and we found this project to be one of the best parts of the course. We learnt much more than what we had learnt in the lectures, it has given us an opportunity to further explore the world of computer programming and realize that we have a long and interesting journey ahead of us in the world of programming.

9.References

➢ **www.google.com**

➢ **An introduction to programming through C++ *by* Abhiram G. Ranade.**

➢ http://stackoverflow.com/questions/10419801/undefined-reference-to-unwind-resume-and-gxx-personality-v0