MIT World Peace University

PYTHON PROGRAMING
Second Year B.Tech, Semester 2

PUzzlelists

Project Report

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Batch A1

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Contents

1 Introduction:

Puzzelist is a Python-based game arcade that includes five popular games: Space Wars, Tetris, Snake, Icy, and 2048. The interface for Puzzelist is built using the PyQT library, which provides a user-friendly and interactive experience. In addition, Puzzelist also features a database to store user information, game scores, and the games that the user has unlocked. The purpose of this project is to showcase the versatility and fun of Python by creating an engaging game arcade that can be enjoyed by users of all ages.

2 Problem Statement:

The goal of Puzzelist is to provide a variety of games in a single platform that are easy to play and challenging enough to keep the users engaged. The challenge is to build a robust and efficient gaming application that can handle various user inputs, store user data securely, and provide a seamless gaming experience.

3 Dataset Description and Data Pre-processing

The dataset for this project includes user information, game scores, and the games that the user has unlocked. The data is stored in a database, which is designed to ensure data integrity and security. Data pre-processing involves ensuring that the data entered by the user is validated and sanitized to prevent any malicious input that may affect the integrity of the database.

4 Tasks Performed:

The tasks performed in this project include:

1. BUilding an interface using the PyQT library that display the five games and user information.
2. Developing the code for each game (Space Wars, Tetris, Snake, Icy, and 2048) using Python.
3. Ensuring that the games are optimized for user experience and can handle user input effectively.
4. Adding sound and graphics to the games to enhance the user experience
5. Implementing a database to store user information, game scores, and unlocked games
6. Ensuring that user data is stored securely and is not vulnerable to any security threats
7. Testing the games to ensure that they work as intended and are bug-free
8. Creating an executable file for the game arcade that can be run on any computer without the need for Python installation.

5 Tools/Libraries Used:

The tools and libraries used in this project include:

1. Python 3
2. PyQT 5
3. PyGame
4. NumPy
5. MariaDB

6 Output and Visualization Screenshots:

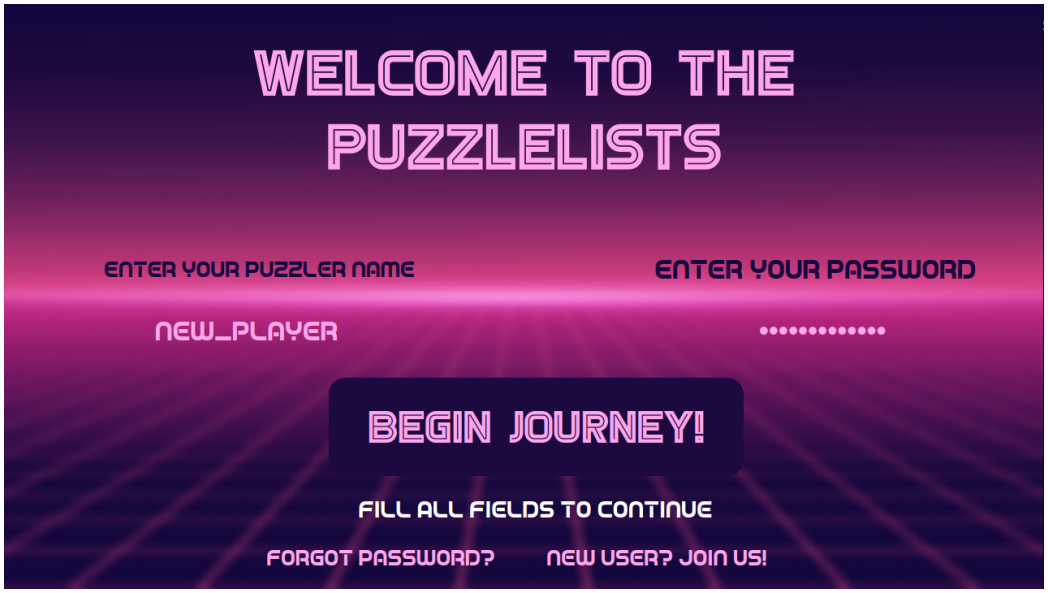

Figure 1: Login Screen

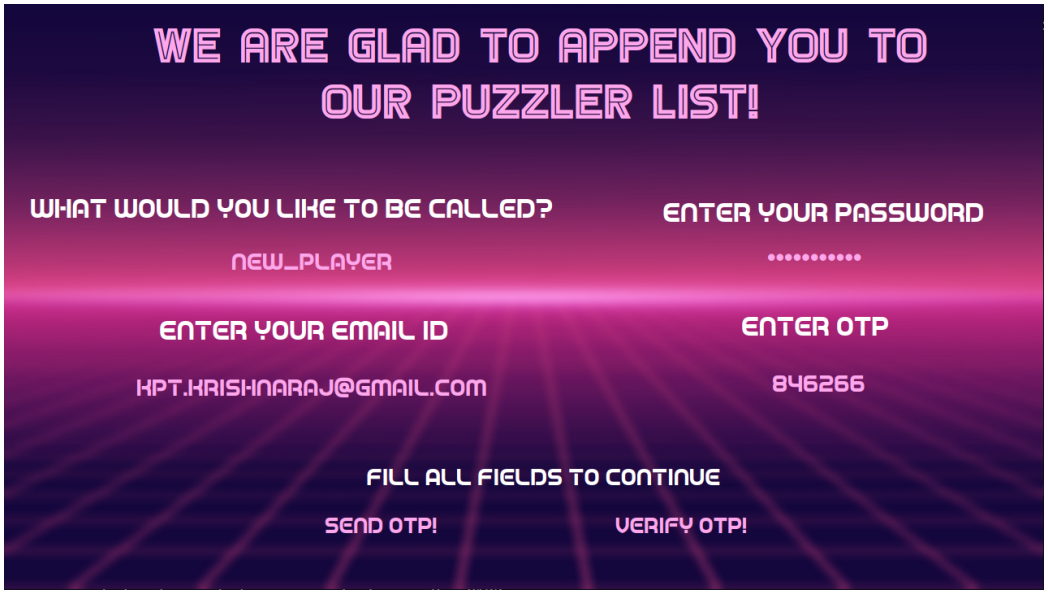

Figure 2: Register Screen

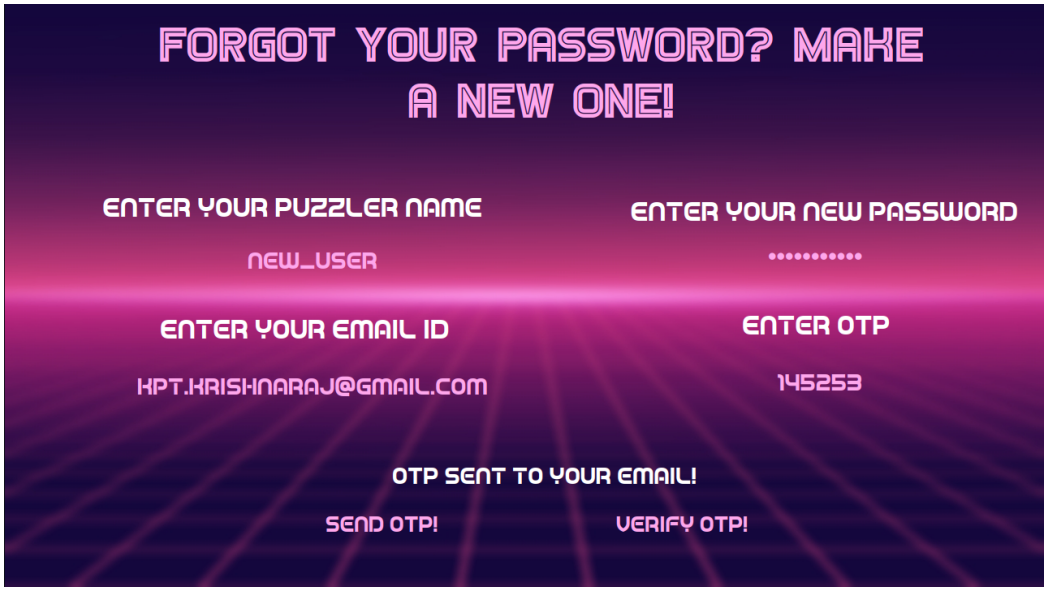

Figure 3: Forgot Password Screen

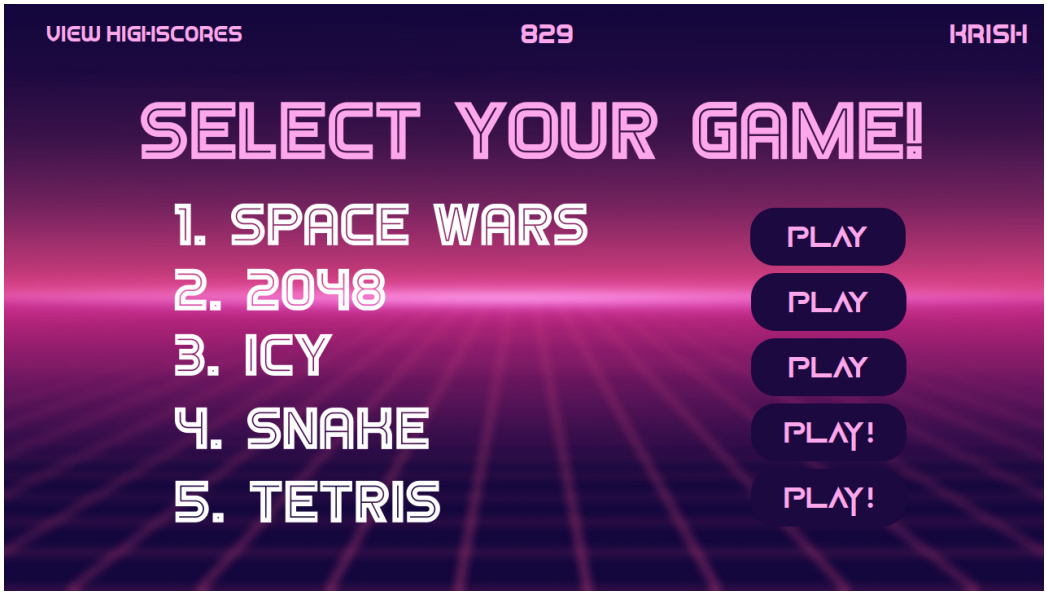

Figure 4: Home Screen

cd

Figure 5: Highscores Screen

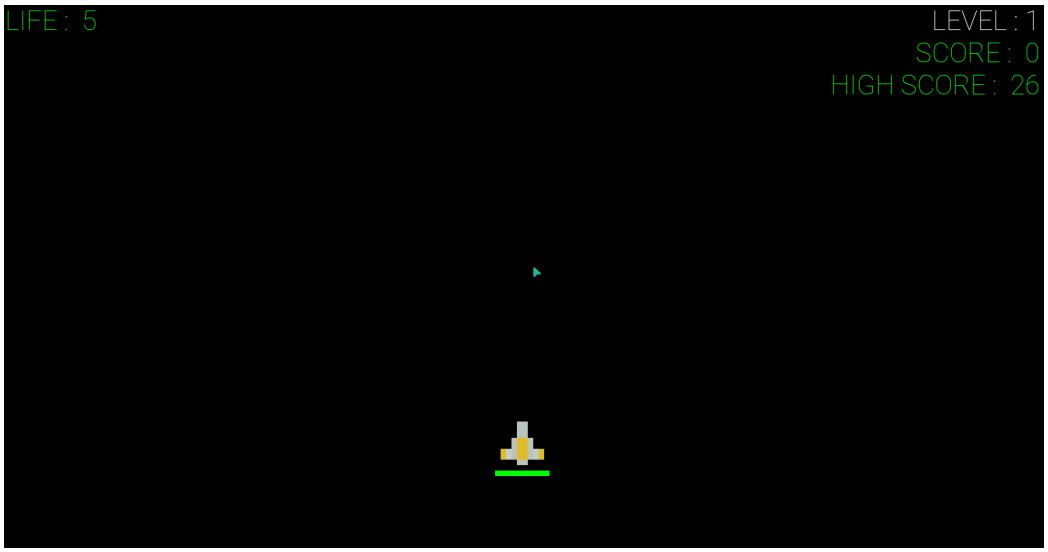

Figure 6: Space Wars Screen

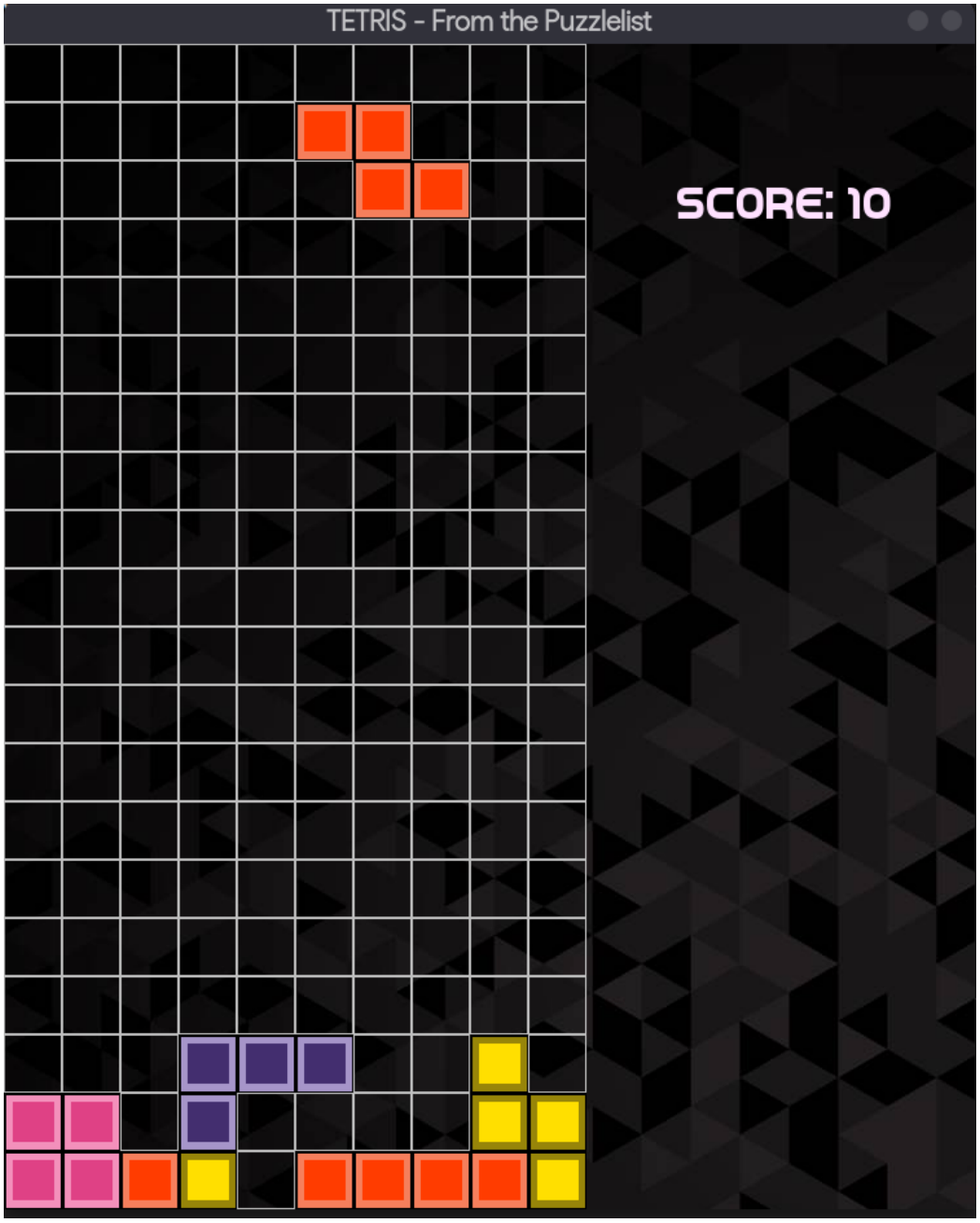

Figure 7: Tetris

Figure 8: Snake

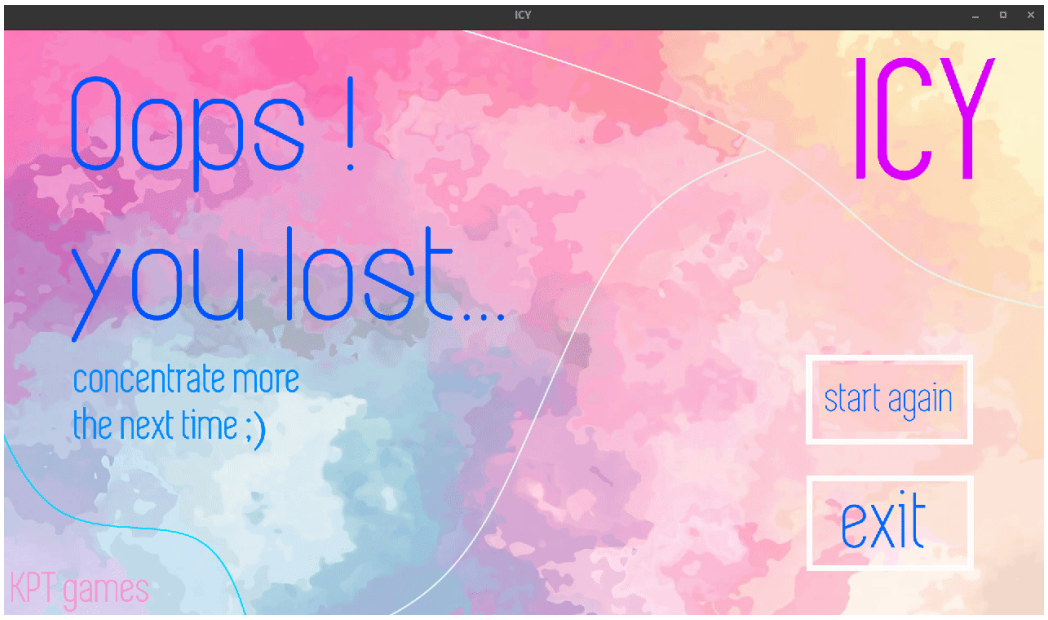

Figure 9: Icy

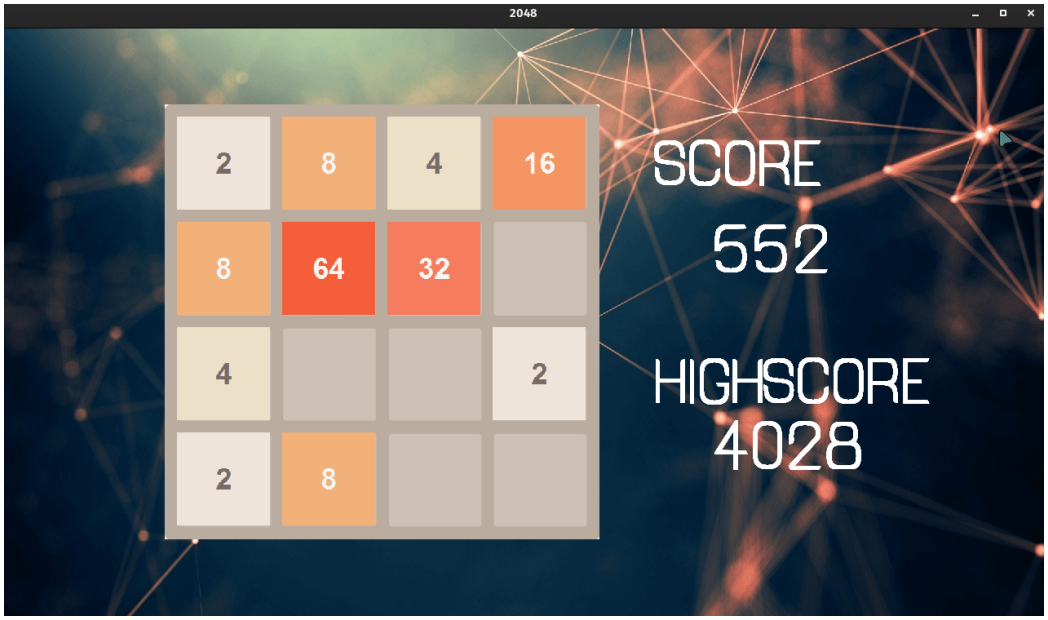

Figure 10: 2048

7 Conclusion:

In conclusion, Puzzelist is an entertaining and challenging game arcade that showcases the versatility and fun of Python programming. The use of PyQT, Pygame, NumPy and MariaDB libraries has enabled us to create an engaging and interactive gaming experience while ensuring the security and integrity of user data. The project can be further extended by adding more games, improving the graphics and sound, and enhancing the overall user experience.

8 References:

1. PyQT documentation: https://www.riverbankcomputing.com/static/Docs/PyQt5/
2. Pygame documentation: https://www.pygame.org/docs/
3. NumPy documentation: https://numpy.org/doc/