COMP3211

Software Engineering

Group 1 – Developer Manual

Monopoly

Hong Kong Special Edition

Group 1	
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1. Introduction

Purpose of The Developer Manual

The purpose of this developer manual is to serve as a comprehensive guide for developers interested in **understanding**, **maintaining**, or **contributing** to the Monopoly Hong Kong Special Edition project. It is specifically designed to facilitate future development and to encourage collaboration in the open-source community through GitHub.
https://github.com/PhDinTimeManagement/Monopoly-Hong-Kong-Special-Edition.git

This manual provides detailed instructions on:

- Setting up the project environment on a specified platform. (Section II)
- Understanding the project's folder structure and the role of key files. (Section III)
- Building and running the game, in normal and debugging modes. (Section IV & V)

Brief Overview of The Project

The **Monopoly Hong Kong Special Edition** is a Python-based digital board game inspired by the classic Monopoly series, tailored specifically to highlight the cultural and economic features of Hong Kong. The game is built exclusively using Python's standard libraries, showcasing the capability of developing a robust and interactive application without relying on third-party dependencies.

The project follows the **Model-View-Controller (MVC)** architectural pattern to ensure a clean separation of concerns, improve code maintainability, and allow future extensions. The **Model** handles the core game logic, the **View** is responsible for rendering the user interface, and the **Controller** manages interactions between the Model and View. By adhering to this structure, the project maintains modularity and scalability for ongoing development.

II. Development Platform

Purpose of The Developer Manual

- Windows 11
- MacOS Sequoia Version 15.1

Version of Python Used for Development

- Python 3.11 (https://www.python.org/downloads/release/python-31110/)
- Latest Python releases version may also work but they are untested. Older versions are not recommended. (https://www.python.org/downloads/windows/)

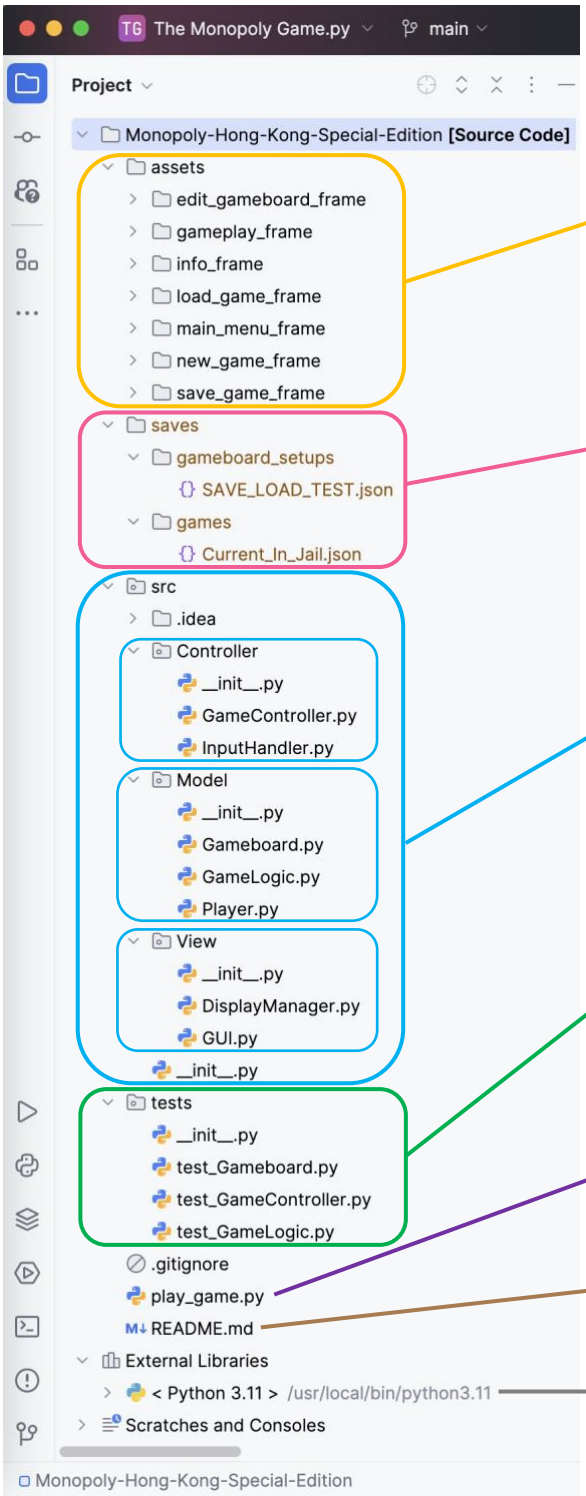
IDE Recommendation

- PyCharm Professional
- PyCharm Community Edition

(https://www.jetbrains.com/help/pycharm/installation-guide.html)

III. Project Setup

Folder and File Structure Overview



All graphical user interface (GUI) visual elements, including images, icons, and animations, are systematically **organized into categorized subfolders based on corresponding frames**. These resources are stored in the assets directory to maintain clarity and ensure easy access during development.

In the saves directory, Player-customized game board settings and play history are stored in the gameboard-setups and games directories, respectively.

The src package is the core of the game project. It is organized following the **Model-View-Controller (MVC) architectural pattern**, ensuring modularity, scalability, and a clean separation of concerns.

The tests package is dedicated to ensuring the reliability and correctness of the core functionality of the game. Each test corresponds to a specific component of the MVC structure, verifying its behavior through unit tests.

This python file serves as the entry point to launch the game, initializing the GUI and the game controller to start the gameplay loop.

Introduction of The Game

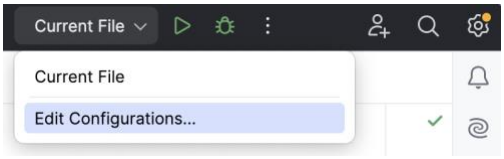
Only Python Standard library is used in this project.

IV. Building and Running the Game

Launch The Project in Normal Mode

After opening to the Monopoly-Hong-Kong-Special-Edition directory by PyCharm, open the ‘Edit Configuration’ option in the top-right corner and follow the instructions step by step.

Step 1:



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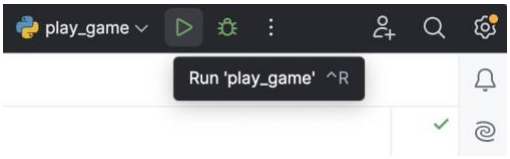
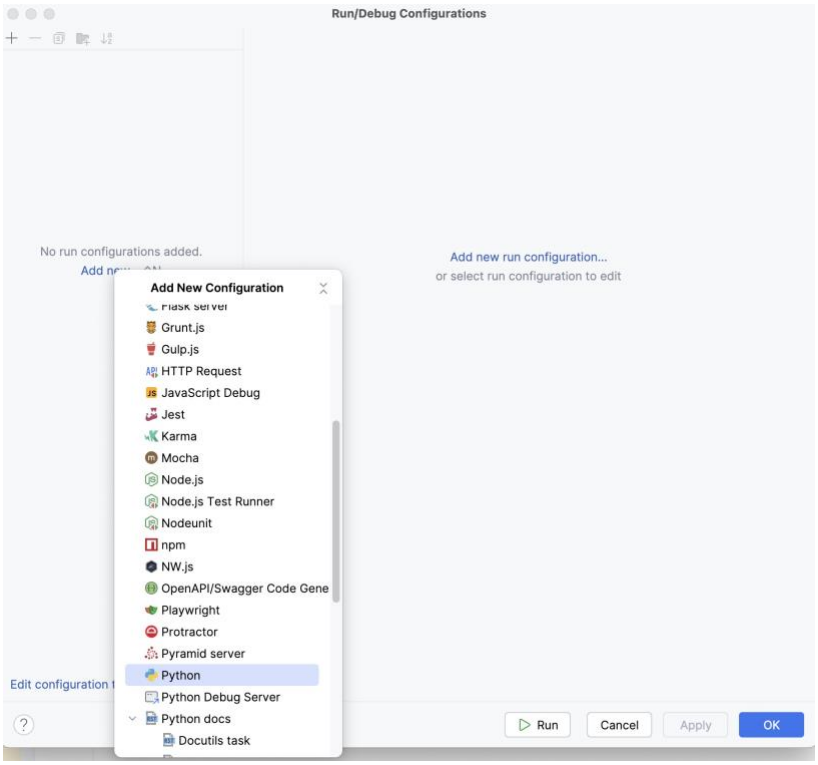
After Add Configuration

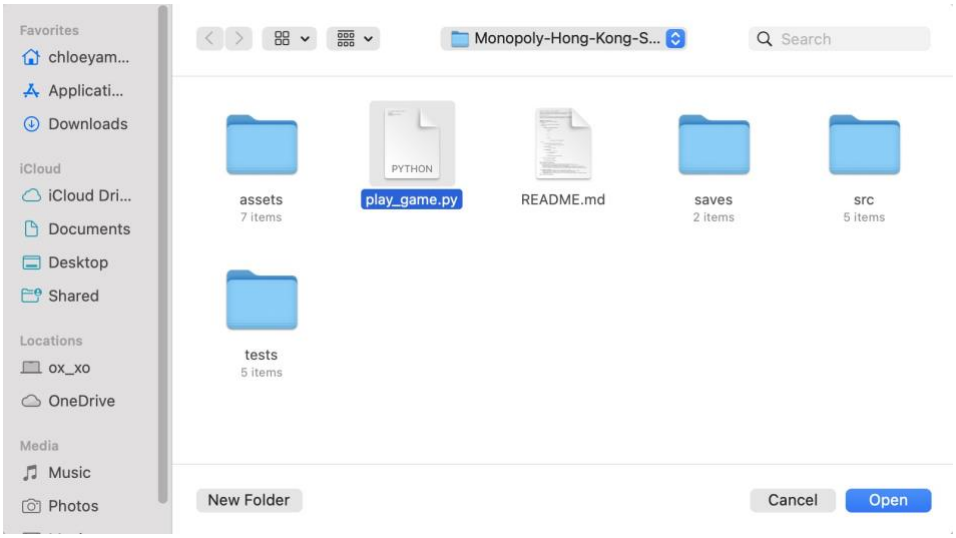


Step 2: Select Python

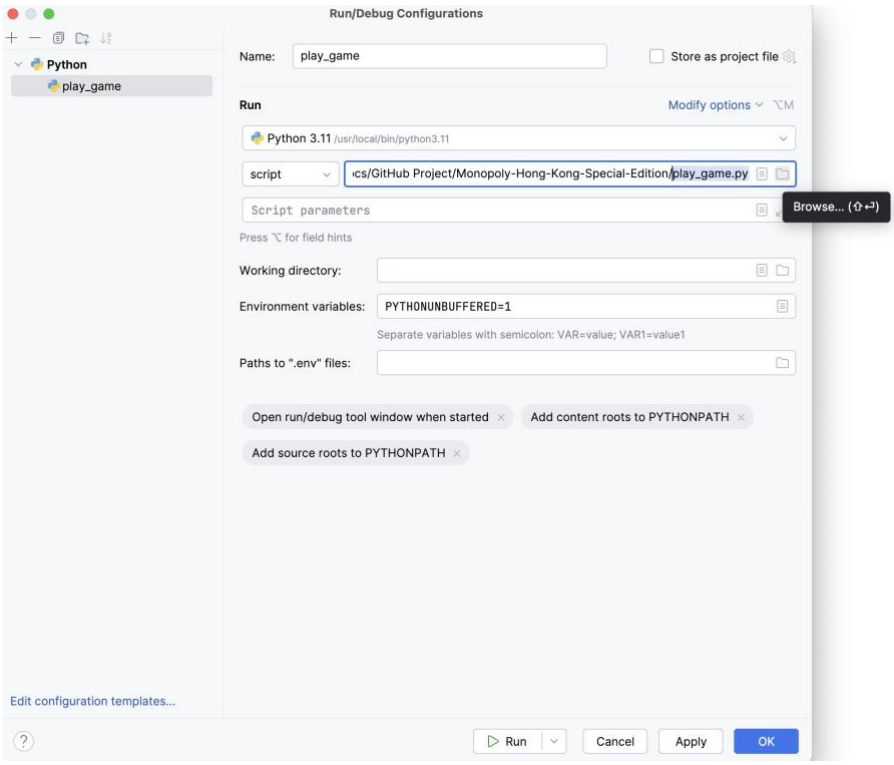


IV. Building and Running the Game

Step 3: Browse play_game.py as script



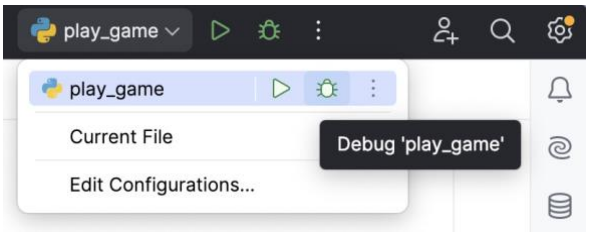
Step 4: Input name, and Click <Apply> button.



Useful Documentation: https://www.jetbrains.com/help/pycharm/run-debug-configuration.html

V. Building and Debugging the Game

Launch The Project in Debugging Mode



Useful Documentation: https://www.jetbrains.com/help/pycharm/starting-the-debugger-session.html