cw2 Pacman the Game final report
Refactoring

- MVC design pattern:
    - startPage, setupPage and popUpPage, each of these packages includes corresponding fxml file and controller.
    - In addition, the game manager is also divided into MVC pattern, where
        - gameManagerControl stores the controller in the game.
        - gameManagerModel stores the basic classes like Maze.java and Pacman.java.
        - gameManagerView stores the drawBoard() function which draws the whole game interface.
- Factory design pattern: package ghostFactoryPattern stroes:
    - GhostInterface: contains one function 'produce'.
    - Ghost: the creation logic of a single ghost.
    - GhostGenerator: the class that implements GhostInterface and perform all ghost generation.
    - GhostFactory: the API which interacts with the user.
- Singleton design pattern: in Pacman class, the generation is carried out by using the idea of singleton.

Additional Features

- Cheery: in the game filed there's a cherry, if pacman eats it, it will gain one extra life.
- Character figure: load the character figures for pacman and the ghosts. The direction of the pacman's mouth changes accordingly with the key direction.
- Cookie Color: In the setup page, user can choose the cookie color in the game filed.
- Game difficulty level: In the setup page, user can choose three difficulties in the game: low, medium and high. Medium will increase the speed of ghost to 6 and number of them to 5. High will increase the speed to 7 based for all 5 ghosts.
- CSS style: the effects of buttons and dropdown pickers is added.