COMP2050 Coursework #2 Report

1. Git use

   Two branches are created and used during the whole developing period.
   Workflow is included in README.md and recorded in SWMcw2.log.

2. Refactoring

   1) Design pattern

   ✓ *Factory pattern*

   Use *GhostFactory()* to generate different ghosts by given the name of the ghost. This type of design pattern comes under creational pattern, as this pattern provides one of the best ways to create a ghost, without exposing the creation logic to the client.

   ✓ *Singleton pattern*

   Use *Pacman()* to create a new object, while this class contains only one pacman object which can be accessed directly without instantiate the object of the class. Involves a single class which is responsible to create a pacman while making sure that only pacman object gets created. This class provides a way to access its only object which do not need to instantiate the object of the class.

   ✓ *State Pattern*

   A State interface is created defining an action, two state class is created, *RunningState()* and *StopState()*. Each state is treated as an individual class.

   2) Design principle

   ✓ ... (Four design principles are used and is shown in README.md).

3. Feature

   ✓ *Starting page* contains images and gifs to combine as the interface.
   ✓ *Setting page* has a preview of the maze after change the color.
   ✓ The game has three different level of difficulties, as three kinds of mazes are preloaded in the program.
   ✓ The number of the ghosts can be chosen from three to five.
   ✓ The selection operator has mouse On and Exit animation.
   ✓ *Game page* lives are represented as the number of pacman image.
   ✓ Different difficulty has different calculation of the final score.
   ✓ Different notification message between lose and win the game.
   ✓ The mouth of the pacman changes direction corresponding to the move direction.
   ✓ When the pacman died, the ghosts near to the starting point will be moved to the original point in case the pacman dies as soon as it re-alive.
   ✓ The ghosts have different speed for different difficulties.
   ✓ The ghost can get out of the starting box quickly.
   ✓ The ghost can track the position of pacman, moving approach the pacman.
   ✓ *Score page* will show that your mark is the highest, if current mark is the highest.
   ✓ If the ESC is pressed to restart the game page, the score page will close automatically.