

UML and UI Design Document

Become Pac-Man

version: 1

Group F8

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1 UML DESIGN

1.1 Database Management

1.1.1 Structural Diagram

class diagram

1.1.2 UMLs

use-case diagram

sequence diagram

1.1.3 Component Functionality

This component is

1.1.4 Major Procedure and Functions

Signup: This function is to create accounts and save them into database.

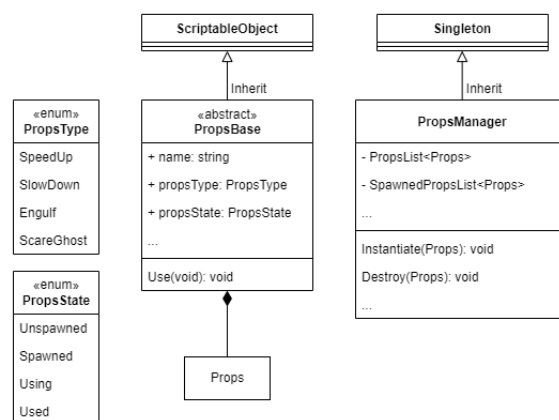
Login: This function is to verify account information so that users with records are allowed to retrieve past records in the game.

Verification: This function is to verify the validity of user id and password.

1.2 Props

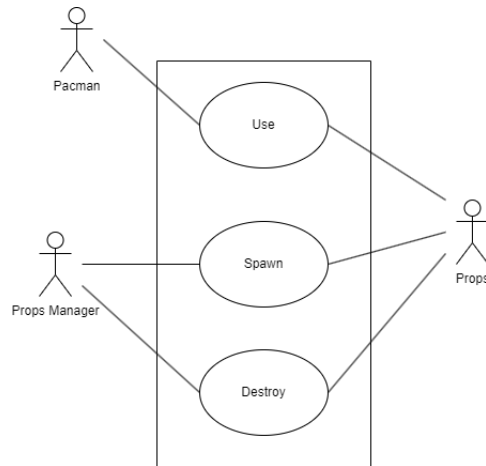
1.2.1 Structural Diagram

class diagram

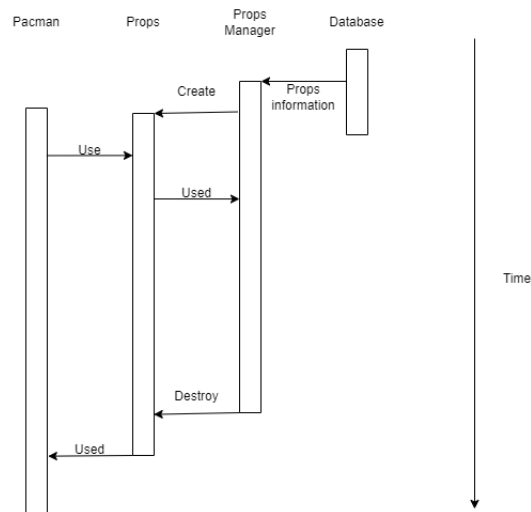


1.2.2 UMLs

use-case diagram



sequence diagram



1.2.3 Component Functionality

The props class is to provide the bases for game objects, such as pellets in the maze for Pacman to achieve scores, or other props that will enhance in-game experience.

The PropsBase component is to provide an abstract template for each prop. And PropsManager is to announce control sequence to each props.

1.2.4 Major Procedure and Functions

Use(void): The Use function is to obtain the action of using the prop, by destroying the prop from the maze.

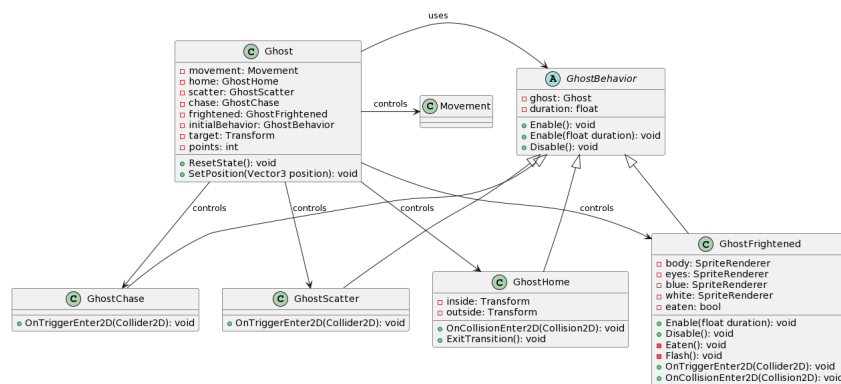
Instantiate(Props): The instantiate function is to create the props for each game.

Destroy(Props): The destroy function is to destroy the prop from the maze for each game.

1.3 Ghost

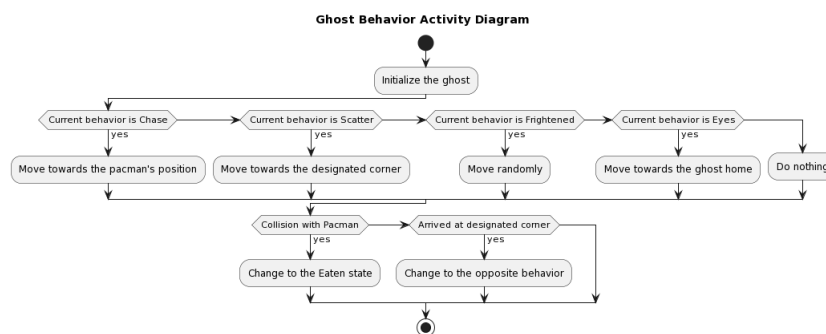
1.3.1 Structural Diagram

class diagram

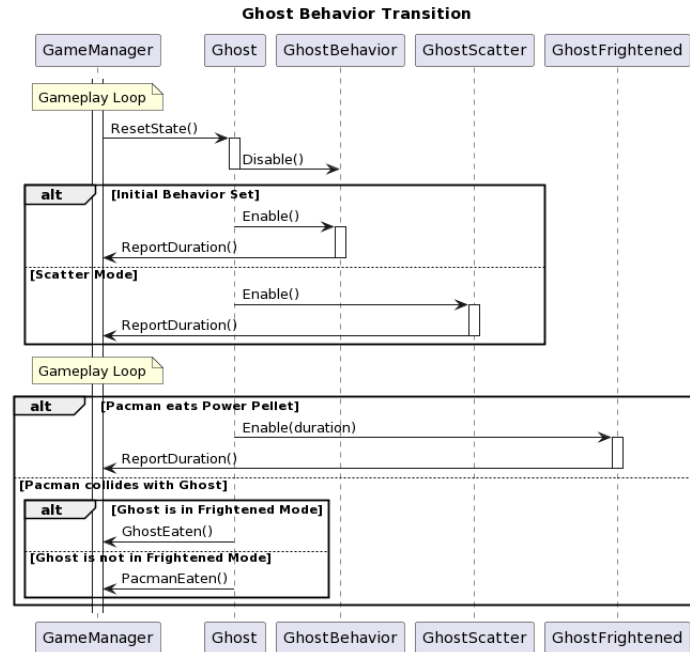


1.3.2 UMLs

activity diagram



sequence diagram



1.3.3 Component Functionality

The Ghost class is to indicate movement for each of all ghosts in the game. It manipulate with ghost behaviour and different status of a ghost.

It consists of a ghost element from GameManager to control the action of the ghost. Ghost behaviour will be uses to indicate the status of the ghost. GhostChase, GhostScatter, GhostHome and GhostFrightened are 4 status of ghost interacting with GhostBehaviour.

1.3.4 Major Procedure and Functions

Enable() and Disable(): The two functions set in Ghost Behaviour provide the indication of activation of a ghost, i.e. whether the ghost is working.

ResetState(): This function is to reset the status of a ghost to its default status.

ExitTransition(): This function is to end the transition procedure.

2 UI DESIGN

2.1 Login page

2.1.1 Description of view

The screen is shown with a background of character view of game maze, with a yellow text of game title 'Pacman 3D'. There will be 2 textboxes for entering Email and Password of the user, and two buttons for Sign up or Login respectively,

2.1.2 Screen Image



2.1.3 Objects and actions

The screen in view is the Login screen, and will be the first view the user sees when the program starts.

Here user can login their account by entering their email and password into the provided textboxes, and press the "Login" button. Once user is verified, they will be brought to the Title Screen.

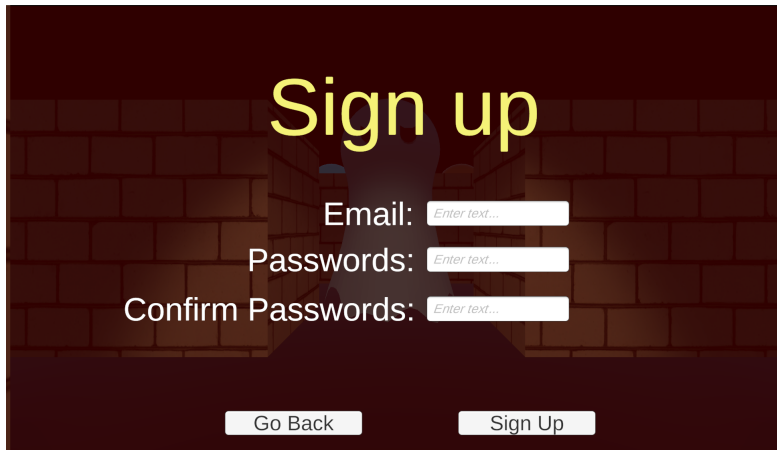
The user can also create a new account by pressing the "Sign Up" button, which will direct the user to the sign up screen as follows.

2.2 Sign-up page

2.2.1 Description of view

In the sign up page, the background is consistently using the character view in the maze, with a yellow text Sign up indicating the page usage. There will be 3 textboxes for entering email, password, and the confirmation password for double entry verification. A go back button and a sign up button will be at the bottom of the screen.

2.2.2 Screen Image

The image shows a 'Sign up' screen with a dark red background and a faint brick wall pattern. At the top, the text 'Sign up' is displayed in a large, yellow, sans-serif font. Below this, there are three input fields: 'Email:', 'Passwords:', and 'Confirm Passwords:'. Each label is followed by a white rectangular input box containing the placeholder text 'Enter text...'. At the bottom of the screen, there are two white rectangular buttons: 'Go Back' on the left and 'Sign Up' on the right.

2.2.3 Objects and actions

The Sign up screen will be opened when the user presses the "Sign Up" button in the Login screen.

Here user can create an account by inputting their email, password, and confirm passwords, and press the "Sign Up" button for system verification. If Sign up process is failed, there will be a message showing that attempt is unsuccessful.

The user can also go back to the Login screen by pressing the "Go Back" button.

2.3 Title Screen

2.3.1 Description of view

The title screen is with a character view in the maze, with yellow as a background color for UI. A title 'Pacman', and 4 buttons including 'Start Game', 'Settings', 'Login Out' and 'Quit to Desktop'.

2.3.2 Screen Image



2.3.3 Objects and actions

The button 'Start Game' will direct user to the main game, while the button 'Setting' will direct user to the setting page. A 'Log Out' button will let user to log out from current account and go to the Login screen, while the button 'Quit to Desktop' will do the logout and at the same time leave the application directly.

2.4 Setting UI

2.4.1 Description of view

2.4.2 Screen Image

2.4.3 Objects and actions

2.5 Main Game

2.5.1 Description of view

2.5.2 Screen Image

2.5.3 Objects and actions

2.6 Record page

2.6.1 Description of view

2.6.2 Screen Image

2.6.3 Objects and actions