

# **OOP Group Project**

**Pacman 2D Game**

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**Intro To OOP**

# Our Group Project is...

To develop our own version of Pac-Man using the knowledge we gained through this course.

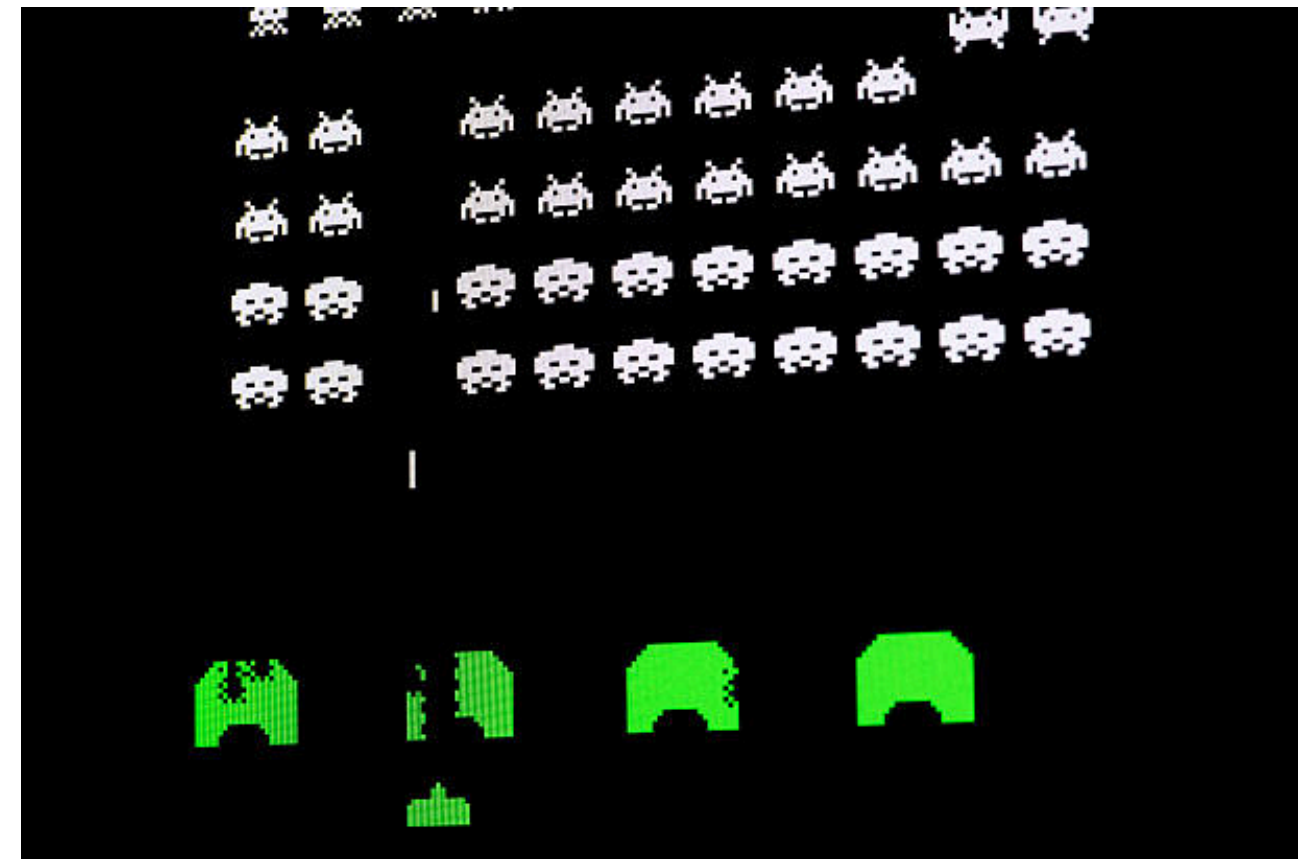


# Arcade Games From 70s, 80s



**Breakout (1978)**

It was among the top five highest-grossing arcade video games of 1976 in the U.S. and Japan.



**Space Invaders (1976)**

Space Invaders is considered one of the most influential and greatest video games of all time.





# PAC-MAN

Upon release in 1980, it was earning about \$8.1 million per week in the United States.

It surpassed the film Star Wars with more than \$1 billion in revenue.

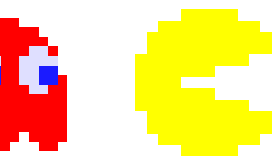


# Classes and structure



# Program Initialization

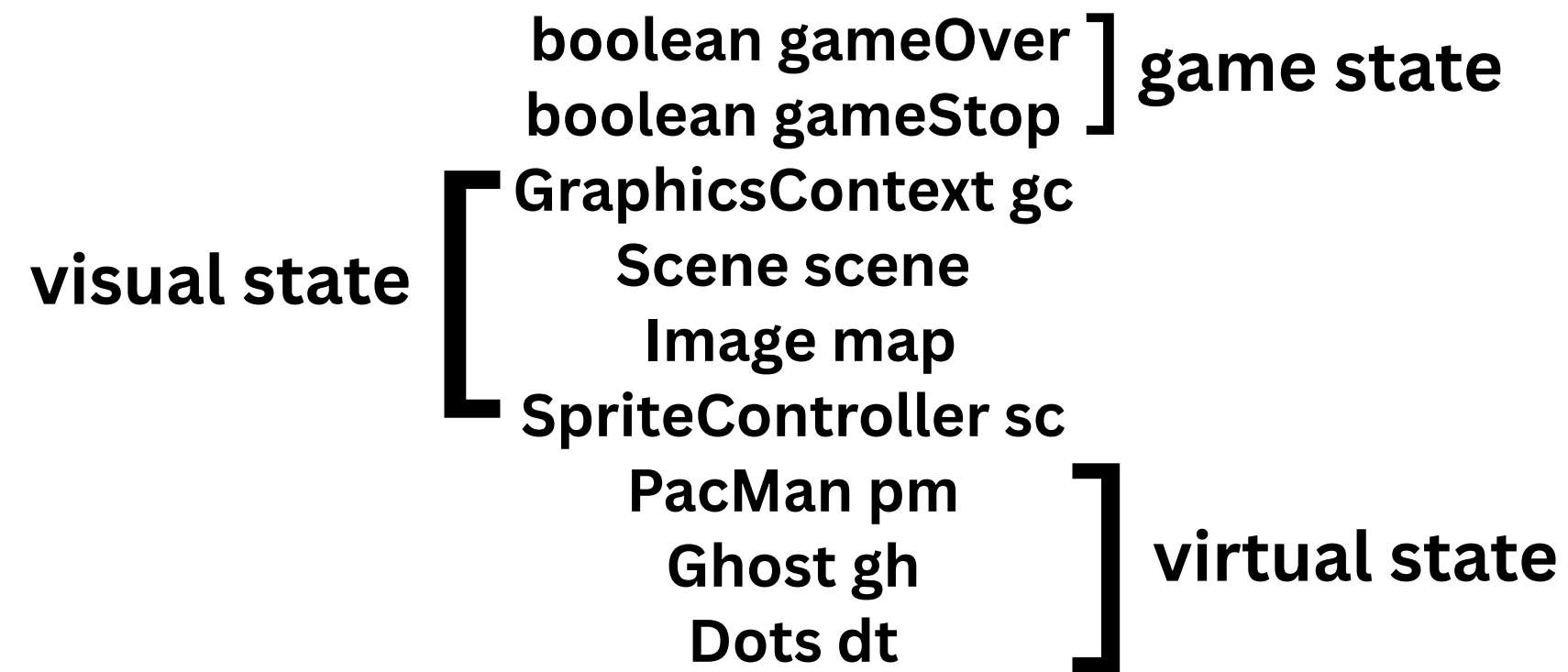
- **Main class creates a window, puts an icon, creates a PacManGame object and launches the game**
- **In PacManGame objects like pacman, dots and ghosts are created and GameLoop starts**



# PacmanGame class

Contains all information about the state of the game. All changes are initiated through this object.

PacmanGame contains

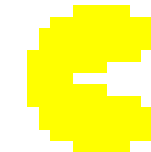


# Object structure

## Entity

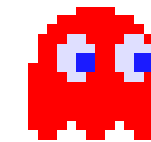
int x  
int y  
int dir  
Image image  
PathController pc  
setDirection()  
render()  
turn()

## Pacman



handleKeyPressed()

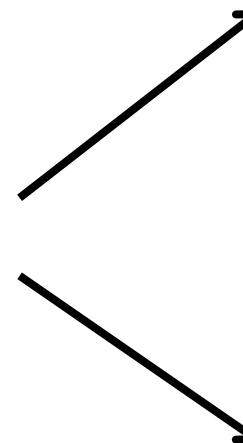
## Ghost



setDirection()

## Dots

int[][] dots  
CheckConsumedDots()





**How does this work?**

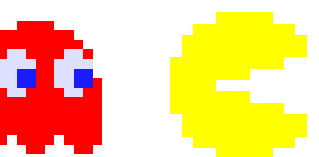
# Controllers

## PathController

Needed for map collision  
handling

## SpriteController

Needed to access the  
necessary images of  
pacman, dots and ghosts

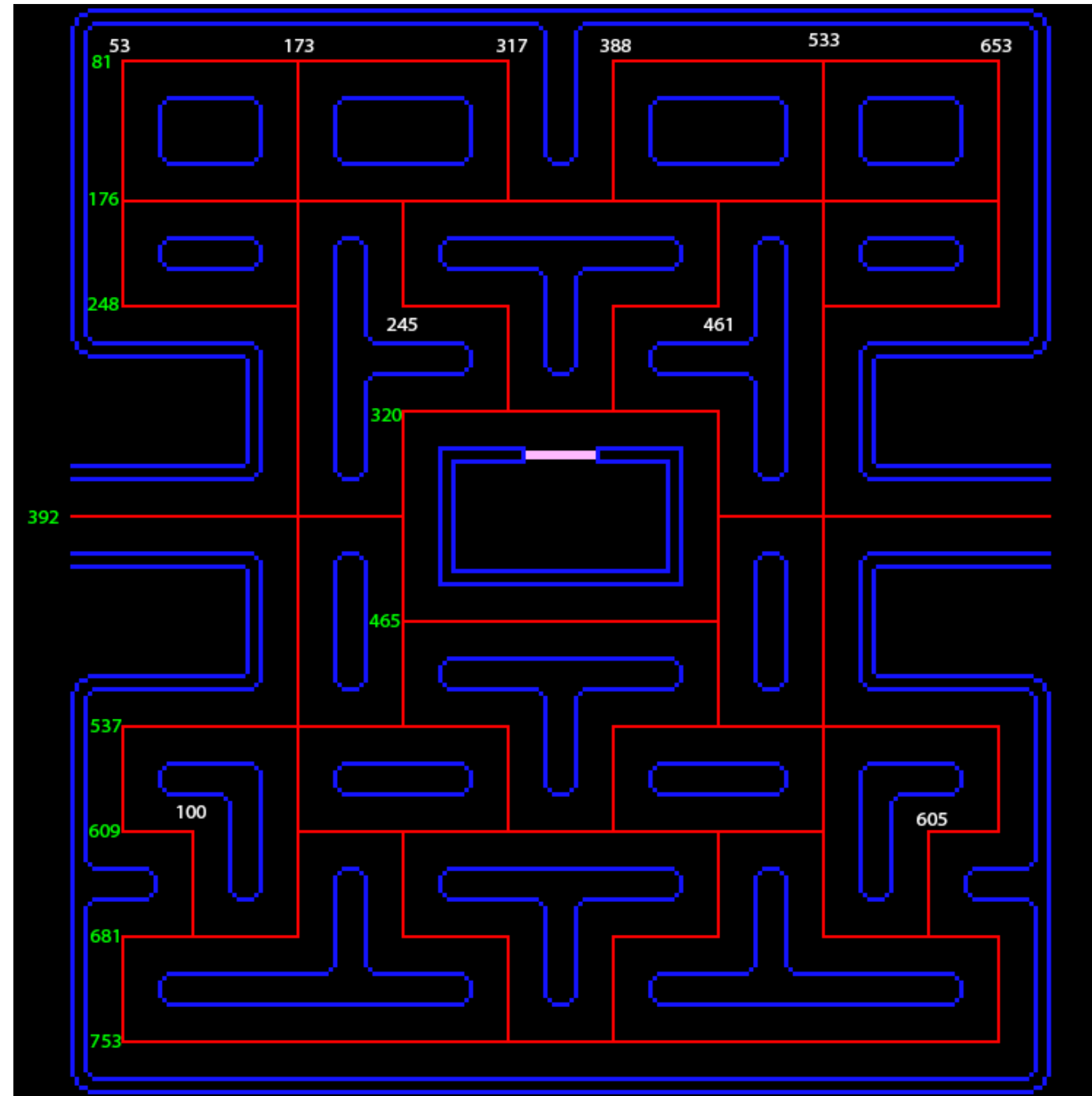


# PathController and movement logic

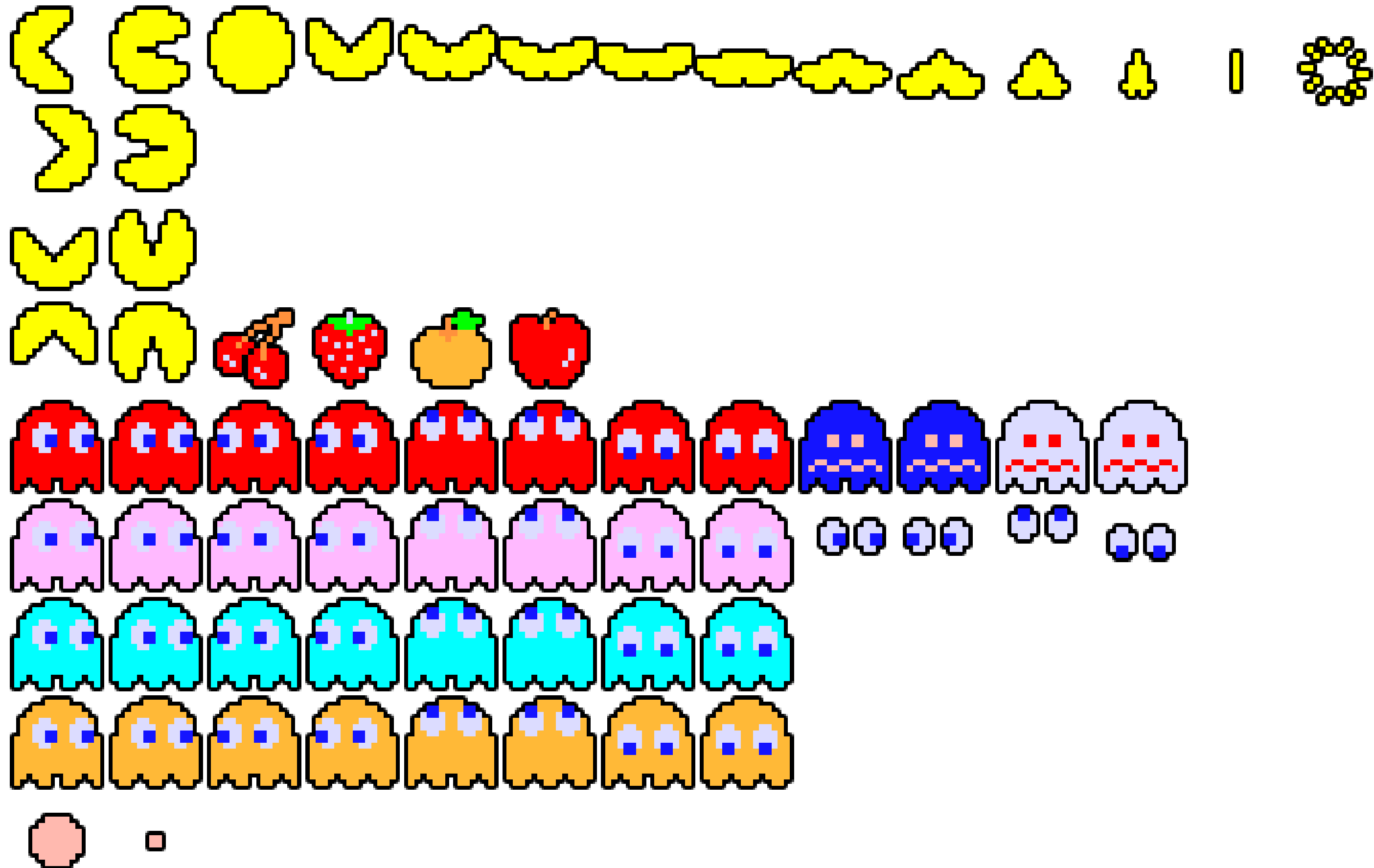
```
int[][] dirX_up;  
int[][] dirX_down;
```

```
int[][] dirY_left;  
int[][] dirY_right;
```

```
int[][] paths_X;  
int[][] paths_Y;
```



# SpriteController and visual state of Entity



# Program performance

**The game loop is repeated every 30 milliseconds in which the logic is processed**

- Stage is cleared
- Position of game objects are changed
- Coliseums and game state are processed
- Game Objects are rendered again.

**Thank you for your attention**

**Now Q&A section**



# References

JavaFX official documetation: <https://openjfx.io/openjfx-docs/>

*Tutorial by Kenny Yip Coding: [https://www.youtube.com/watch?v=lB\\_J-VNMPpE](https://www.youtube.com/watch?v=lB_J-VNMPpE).*

Story of Pacman: <https://en.wikipedia.org/wiki/Pac-Man>

JavaFX Tutorial: <https://www.tutorialspoint.com/javafx/index.htm>