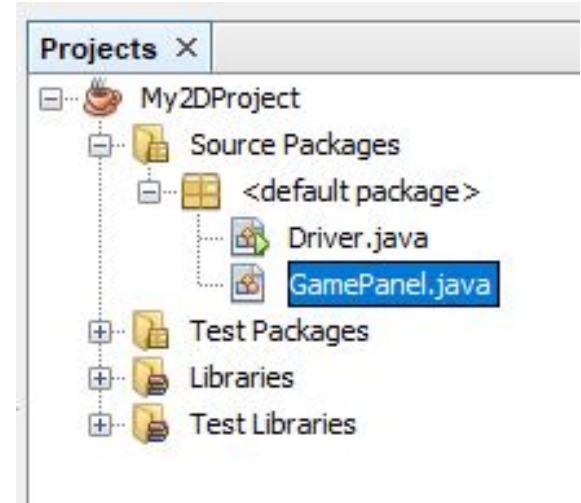


Intro to Game Development

Lesson 1: Game Mechanics
Taylor Grant-Knight & Amanda Wei Lee

AIM: How can we define 2D game mechanics?

Do Now: Create a new Project called My2DProject and 2 java files called Driver and GamePanel. Write the basic headers for those 2 classes.



What are Video Game Mechanics?

Rules & Structure of a Game / Actions that a User can take

- Players (roles)
- Movement
 - Control player character
- Objective/Goal
- NPCs & Dialogue
- Display and Interactions with Objects
- Battle System?
- Condition to win/lose the game



Creating a window using JFrame

JFrame class is a type of container that is used as a GUI

- We need a window for the user to play the game in
- It is a base window that allows us to add different components like
 - labels
 - buttons
 - text
 - title
- We're going to use the following methods

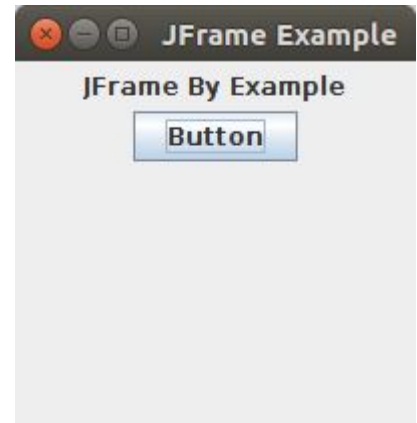
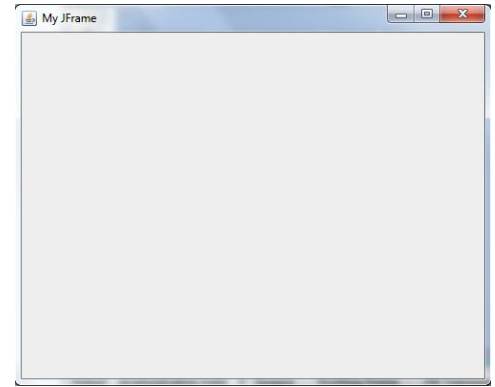
`.setDefaultCloseOperation();`

`.setResizable();`

`.setTitle();`

`.setLocationRelativeTo();`

`.setVisible();`



Creating the Game Panel

This is the actual panel that the user will play the game in
(extends the JPanel)



This is 16 bits!

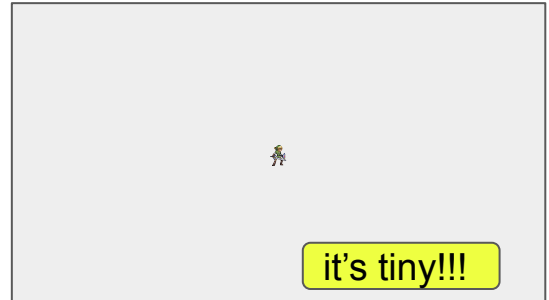
Q: WHAT ARE THE SIZE OF A STANDARD PIXEL? THINK MARIO OR LEGEND OF ZELDA!

16x16 pixel is standard... but modern computers resolutions are

1280 x 960 1360 x 768

1600 x 900 1920 x 1080

So... what's wrong with this?



it's tiny!!!

Creating the Game Panel

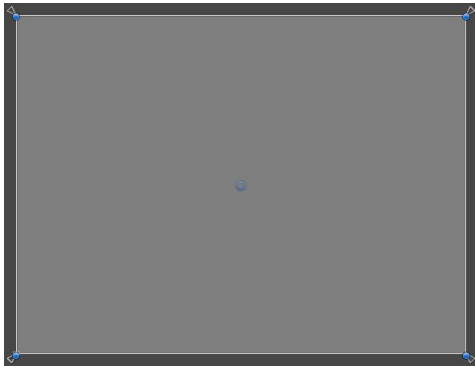
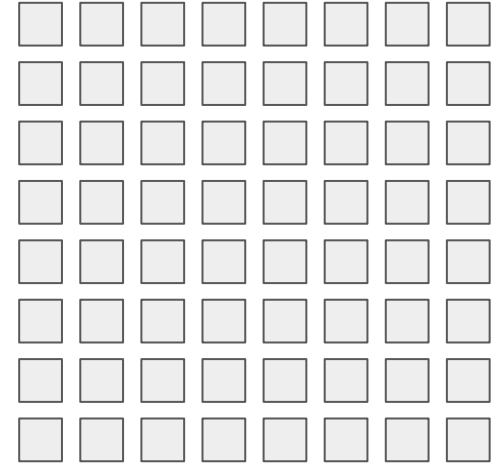
We need to scale it! (Remember geometry?! 😈)

```
final int scale = 3; // pretty standard for 16 bits
```

That will represent 1 tile

So for the screen, we need a width and height

1 tile





Creating the Game Panel

We'll need these libraries

Color, Dimension, JPanel

We will need the following methods for the GamePanel's constructor

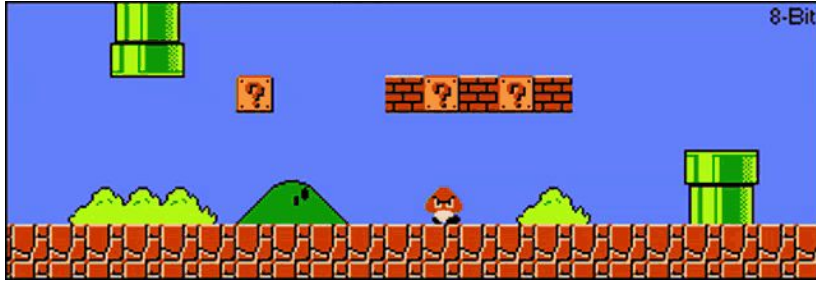
```
.setPreferredSize();
```

```
.setBackground();
```

```
.setDoubleBuffered();
```

What's FPS??

No... Not First Player Shooter! 🕹️

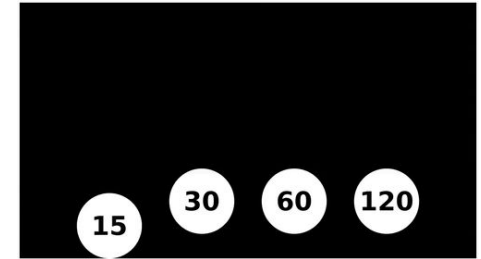


2D games are always running! NPCs and player are always moving

They are all series of static pictures moving really quickly

60 fps means that the screen updates 60 times in a second so it'll look like your character is moving

We need to create time (game clock) called thread



Frame Rate
Comparison