Coffee Man

created by

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Coffee Man

Introduction

I made this game because it's based on the games I used to enjoy, and it's something I've always wished to play. Therefore, I took the initiative to develop it on my own.

Rules

The rules of this game are as follows:

1. Enter the player's name and choose a character.

2. Use the control buttons: a, w, s, d for movement, q and e for selecting item, j for using items, and k for attacking.

3. When the player approaches a monster, the monster will come forward to engage in a battle. Upon defeating the monster, a random item will be dropped, which can be picked up and used by the player.

4. This game is designed for continuous play, aiming to achieve the highest score. However, the game will end when the character's health runs out or the sleepiness bar is full.

Example

- Enter Player's name and select the character, then click the button PLAY

- use 'A', 'S', 'D', 'W' to control the direction of the character. When you move to area that has monsters, the monster will approach you and attack. You need to battle with the monster by pressing 'K',.

- When the monster dies, you will see the item that is dropped. You can collect by clicking 'Q' or 'E' and use it by clicking 'J', if you want Supersaiyan, you can click 'V' to apply it .

Table 1: Items description

Red Potion	for increasing health
Blue Potion	for increasing Mana
Coffee	for decreasing percentage of sleepiness bar

- The game will continue indefinitely until either the character's power runs out or the sleepiness bar reaches 100 percent.

- When you lose, the PLAY AGAIN button will show, you can click it then you will force to the home page and play again.
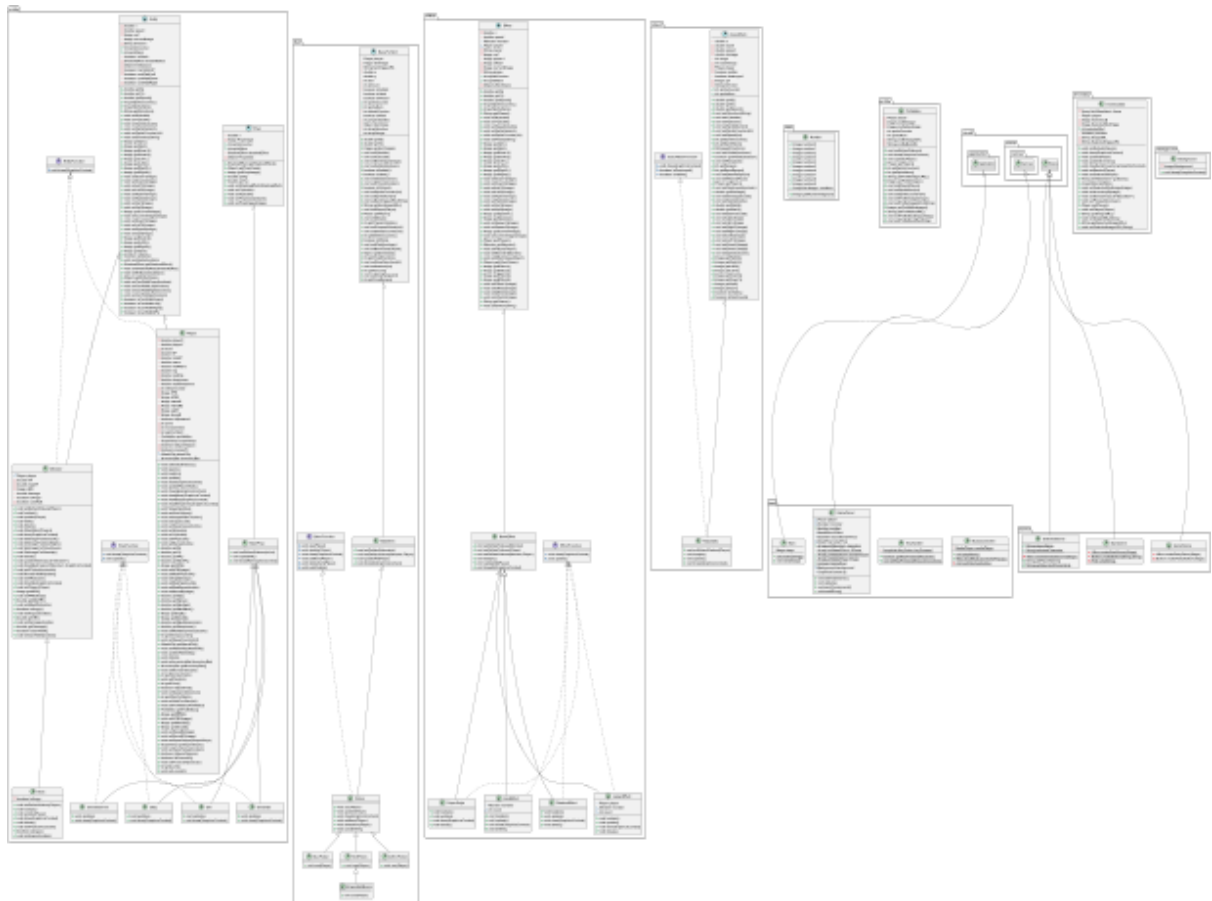
Main Menu

- Table 2 : Main menu - Button description

Button	Description
PLAY GAME	click to start the game
SETTING	for controlling the soundtrack
EXIT	for exit the game
HOW TO PLAY	describe about rule of the game

Class Diagram

1. Package Background

   1.1. Class Background

- final Image Background	set image from "background/backgroundG.png"

   1.1.1. fields

   1.1.2. Methods

+ void draw (GraphicContext gc)	draw Image use element from background at position (0, 0)

2. Package Inventory

   2.1. Class InventoryBar

   2.1.1. fields

- ArrayList<BaseItem> items	
- Player player	
- Image selectedSlotImage	
- Image inventoryB	
+ *int selectedSlot*	
- boolean pressed	
- String imageURL	
- String selectedImageURL	

2.1.2. Contructor

+ InventoryBar	call function setDefaultValues

2.1.3. methods

+ void setDefaultValues	set ImageURL to "player/InventoryB.png" set SelectedImageURL to "player/SelectedSlot.png" set InventoryB to image using element from imageURL set selectedSlotImage to image using element from selectedImageURL set selectedSlot to 0 set Pressed to false set player to player set items to new ArrayList<BaseITem>()
+ void draw (GraphicContext gc)	draw image InventoryB at position (0, 500) draw image selectedSLotImage at position (selectedSlot * 0.6, 500) drawItemInventory(gc)

+ void update(Player player)	set player to player
	
	 if not pressed,
	
	      - if E is pressed, increase SelectedSlot by 1, set press to true.
	
	      - if Q is pressed, decrease SelectedSlot by 1, set press to true.
	
	      - if J is pressed, if SelectedSlot is less than items's size, use the items that are selected and set press to true.
	
	 else if Q, E, J are not pressed, set press to false.
	
	 update the Inventory.
	
	 set Barrier to player.

+ void updateInventory()	if items is empty, do nothing otherwise, for all of items of player, update them.
+ drawItemInventory (GraphicContext gc)	if items is empty, do nothing otherwise, for all i th items, draw image using element from itemImage at position describing below, - item.Coffee.Potion at (112 + i * 60, 531) - item.DragonBallBeans at (112 + i * 60, 532) - else at (112 + i * 60, 543) if GamePanel.number is not null, draw number image using element from amount of i th items at position (137 + i * 60, 550)
+ void setBarrier (Player player)	set CanWalkDown to true except if player's y-axis is equal to 490, set CanwalkDown to false.
+ void setSelectedSlot (int selectedSlot)	set selectedSlot to the value is given. if selectedSlot is greater than 9, set selectedSlot to selectedSlot mod by 10 if selectedSlot is less than 0, increase it by 10
getter / setter	

3.   Package Effect

      3.1.   Class BaseEffect

           3.1.1.   Constructor

+ BaseEffect (Player player)	set DefaultValue by player
+ BaseEffect (Monster monster)	set DefaultValue by monster
+ BaseEffect (Monster monster, Player player)	set DefaultPlayer by monster and player

3.1.2. Methods

+ void setDefaultValues (Monster monster)	set Monster as monster, setX and setY by x, y of monster, set owner to "monster", setEffectClass to BaseEffect.class, loadpic(), setSpriteNum to 1, setSpriteCounter to 0.
+ void setDefaultValues (Player player)	set Monster as player, setX and setY by x, y of monster, set owner to "player", setEffectClass to BaseEffect.class, loadpic(), setSpriteNum to 1, setSpriteCounter to 0.
+ void setDefaultValues (Monster monster, Player player)	set Player as player, setX and setY by x, y of monster, setEffectClass to BaseEffect.class, loadpic(), setSpriteNum to 1, setSpriteCounter to 0.
+ void loadPicture()	setEffect by image named "spawn_1.png", "spawn_2.png"
+ void updateAll (Player player)	This method is used to update animation images, Do when Effects is not empty. Updating animation breaks into 4 cases : if i th Effects is, - "class effectDiedEffect", Casting to DiedEffect and update it - "class effect.SpawnEffect", Casting to SpawnEffect and update it - "class effect.ShadowEffect", Casting to ShadowEffect and update it - "class effect.SuperSeiyat", Casting to SuperSeiya and update it
+ void drawAll (GraphicsContext gc)	This method is used to update animation images, Do when Effects is not empty. Updating animation breaks into 4 cases :

	if i th Effects is, - "class effectDiedEffect", Casting to DiedEffect and draw(gc). - "class effect.SpawnEffect", Casting to SpawnEffect and draw(gc). - "class effect.ShadowEffect", Casting to ShadowEffect and draw(gc). - "class effect.SuperSeiyat", Casting to SuperSeiya and draw(gc).

3.2.   Abstract Class Effect

3.2.1.   Fields

- double x, y	position of the character
- double speed	speed of the character
+ Monster monster	
+ Player player	
- String owner	
- Image up1, up2, down1, down2, left1, left2, right1, right2	image for animation of the character
- Image spawn1, spawn2	
- Image effect1, effect2, effect3, effect4	
- Image currentImage	
- String phase	
+ int spriteCounter	set to 0

+ int spriteNum	set to 1
- Object effectClass	

3.2.2. Methods

getter / setter for each field	

3.3. Interface EffectFunctionable

3.3.1. Methods

+ void draw(GraphicsContext gc)	use to draw the graphic
+ void update()	use to update the graphic

3.4. Class DiedEffect extends BaseEffect implements EffectFunctionable

3.4.1. Constructor

+ DiedEffect (Monster monster, Player player)	setDefaultValues by monster, player.

3.4.2. Methods

+ void loadPicture()	- set setUp1 to "monster_up_1.png" - set setUp2 to "monster_up_2.png" - set setEffect1 to "spawn_1.png" - set setEffect2 to "spawn_2.png"

+ void update()	- increase spriteCounter by 1
	- if spriteNum is greater than 5
	    - if spriteNUm equals to 1, set spriteNum to 2.
	    - if spriteNum equals to 2, set spriteNum to 1.
	    - otherwise set to 0 and increase count by 1.
	- if count is less than 3, setPhase to "phaseA".
	    - else if count is less than 5, setPhase to

	"phaseB" - else setPhase to "phaseDelete". - if phase is "phaseB",setY 5 left. - if phase is "phaseDelete", delete this Effects..

+ void draw(GraphicContext gc)	initialize variable "delete" to false.
	
	draw pic by this,
	
	if phase is "phaseA",
	
	    - if spriteNum equals to 1, setCurrentImage by calling getEffect1().
	
	    - if spriteNum equals to 2, setCurrentImage by calling getEffect2().
	
	if phase is "phaseB",
	
	    - if spriteNum equals to 1, setCurrentImage by calling getUp1().
	
	    - if spriteNum equals to 2, setCurrentImage by calling getUpt2().
	
	if phase is "phaseDelete", set delete to true.
	
	if delete is false, draw a currentImage at position x, y.

+ void delete()	remove this from Effects.

3.5. Class ShadowEffect extends BaseEffect implements EffectFunctionable

3.5.1. Constructor

+ ShadowEffect (Monster monster)	setDefaultValues by monster
+ ShadowEffect (Player player)	setDefaultValues by player

3.5.2. Methods

+ void loadPicture()	- set setEffect1 to "shadow_1_1.png" - set setEffect2 to "shadow_1_2.png" - set setEffect3 to "shadow_2_1.png" - set setEffect4 to "shadow_2_2.png"

+ void update()	- increase spriteCounter by 1
	
	- if spriteNum is greater than 20
	    - if spriteNUm equals to 1, set spriteNum to 2.
	    - if spriteNum equals to 2, set spriteNum to 1.
	    - otherwise set to 0.
	
	- if owner is "player",
	    - if direction of player or monster is "down" or "up",setPhase to "phaseA", otherwise set to "phaseB"
	
	- if owner is "player" or "monster", setX left 17 points, setY down 22 points.
	
	- if phase is "phaseDelete", delete this from Effects.

+ void draw(GraphicContext gc)	initialize boolean delete to false.
	setCurrentImage to Effect1.
	draw pic by this,
	if phase is "phaseA",
	    - if spriteNum equals to 1, setCurrentImage by calling getEffect1().
	    - if spriteNum equals to 2, setCurrentImage by calling getEffect2().
	if phase is "phaseB",
	    - if spriteNum equals to 1, setCurrentImage by calling getEffect3().
	    - if spriteNum equals to 2, setCurrentImage by calling getEffect4().

	if phase is "phaseDelete", set delete to true. if delete is false, gc.drawImage(getCurrentImage(), getX(), getY()).
+ void delete()	remove this from Effects.

3.6. Class SpawnEffect extends BaseEffect implements EffectFunctionable

3.6.1. Fields

+ Player player	
+ Monster monster	
- int count	set count to 0

3.6.2. Constructor

+ SpawnEffect (Monster monster)	setDefaultValues by monster setEffectClass to spawnEffect.class
+ SpawnEffect (Player player)	setDefaultValues by player setEffectClass to spawnEffect.class setX to left 15 points
+ SpawnEffect(Player player, Monster monster)	setDefaultValues by monster, player setEffectClass to spawnEffect.class

3.6.3. Methods

+ void loadPicture()	- set setEffect1 to spawn_1.png" - set setEffect2 to "spawn_2.png"
+ void update()	- increase spriteCounter by 1

	- if spriteNum is greater than 10
	    - if spriteNum equals to 1, set spriteNum to 2.
	    - if spriteNum equals to 2, set spriteNum to 1.
	    - otherwise set to 0 and increase count by 1.
	- if count is less than 1, set phase to "phaseA" and setY down 2 points.
	- else if count is less than 3, set phase to "phaseB".
	- if phase is "phaseDelete", remove this from Effects.

+ void draw(GraphicContext gc)	initialize boolean delete to false.
	draw pic by this,
	if phase is "phaseA",
	    - if spriteNum equals to 1, setCurrentImage by calling getEffect1().
	    - if spriteNum equals to 2, setCurrentImage by calling getEffect2().
	if phase is "phaseDelete", set delete to true.
	if delete is false, gc.drawImage(getCurrentImage(), getX(), getY()).

+ void delete()	remove this from Effects.

3.7. Class SuperSaiyan extends BaseEffect implements EffectFunctionable

3.7.1. Constructor

+ SuperSeiyaEffect (Player player)	setDefaultValues by player setEffectClass to SuperSeiya.class setPhase to "phaseA"

3.7.2. Methods

+ void loadPicture()	- set setEffect1 to "SuperSeiya_1.png" - set setEffect2 to "SuperSeiya_2.png"

+ void update()	- increase spriteCounter by 1
	- if spriteNum is greater than 20
	- if spriteNum equals to 1, set spriteNum to 2.
	- if spriteNum equals to 2, set spriteNum to 1.
	- otherwise set to 0.
	- if phase is "phaseDelete", remove this from Effects.
	- setX by player's x position
	- setY by player's y position
	- if Mana of player is less than 1, remove this from Effects.
	- decrease player's Mana by 3
+ void draw(GraphicContext gc)	initialize boolean delete to false.
	setCurrentImage to Effect1.
	draw pic by this,
	if phase is "phaseA",
	- if spriteNum equals to 1, setCurrentImage by calling getEffect1().
	- if spriteNum equals to 2, setCurrentImage by calling getEffect2().
	if phase is "phaseDelete", set delete to true.
	if delete is false, draw currentImage at (x-22, y-42)
+ void delete()	remove this from Effects.

4. Package Item

    4.1. Abtract Class Item

        4.1.1. Fields

- Player player	
- Image itemImage	

- String itemImageURL	
- double x, y	
- int slot	
- int amount	
- boolean isAdded	
- boolean isUsed	
- boolean isPicked	
+ int spriteCounter	
+ int spriteNum	
- deleteCounter	
- boolean isWink	
- int prepareDelete	
- Object itemClass	
- int dropDirection	
- int dropRange	

4.1.2. Methods

Getter / setter for each fields	

4.2. Interface ItemFunctionable

4.2.1. Methods

+ void use(Player player)	

+ void update(Player player)	
+ void draw(GraphicContext gc)	
+ void addItem(Player player)	
+ void deleteItem(Player player)	
+ void autoDelete()	

4.3. Class BaseItem extends Item

4.3.1. Constructor

+ BaseItem (int slotNumber)	setDefaultValues by slotNumber
+ BaseItem (Monster monster, Player player)	setDefaultValues by monster, player

4.3.2. Methods

+ void setDefaultValues (int slotNumber)	set itemClass to Potion.class set Slot to slotNumber set Added and PIcked to true set Used and Wink to false set PrepareDelete, DeleteCounter, and spriteCounter to 0 set DropRange, spriteNum, and Amount to 1 set itemImageURL to "item/RedPotion.png" set itemImage to image from itemImageURL
+ void setDefaultValues (Player player, Monster monster)	set Player to player set x, y by monster's position set itemClass to Potion.class

	set DropDirection, Amount, DropRange, spriteNum to 1
	set slot to -1
	set Added, Used, Wink and Picked to false
	set PrepareDelete, deleteCounter, spriteCounter to 0
	set itemImageURL to "item/RedPotion.png"
	set itemImage to image from itemImageUR
+ void updateAll (Player player)	if itemOnFloors is empty, do nothing.
	otherwise, for all of i th itemOnFLoors, break into 4 cases,
	- if it is "class Item.Potion", casting it.update(player) to Potion.
	- if it is "class Item.BluePotion", casting it.update(player) to BluePotion.
	- if it is "class Item.RedPotion", casting it.update(player) to RedPotion.
	- if it is "class Item.CoffeePotion", casting it.update(player) to CoffeePotion.
	- if it is "class Item.DragonBallBeans", casting it.update(player) to DragonBallBeans.
+ void drawAll(GraphicContext gc)	if itemOnFloor is empty, do nothing
	otherwise, for all of itemOnFloors, break into 4 cases,
	- if it is "class Item.Potion", casting it.draw(gc) to Potion.
	- if it is "class Item.BluePotion", casting it.draw(gc) to BluePotion.
	- if it is "class Item.RedPotion", casting

	it.draw(gc) to RedPotion.
	- if it is "class Item.CoffeePotion", casting it.draw(gc) to CoffeePotion.
	- if it is "class Item.DragonBallBeans", casting it.draw(gc) to DragonBallBeans.

4.4. Class Potion extends BaseItem implement ItemFuntionable

4.4.1. Constructor

+ Potion (int slotNumber)	set DefaultValues by slotNumber setItemImage from "item/PurplePotion.png" setDropRange to 1
+ Potion (Monster monster, Player player)	set DefaultValues by monster, player setItemImage from "item/PurplePotion.png" setDropRange to 1

4.4.2. Methods

+ void use (Player player)	if player is null, do nothing otherwise, increase player's EXP by 10, then delete player's item.
+ void update (Player player)	- if spriteNum is equal to 1, set new position to (x - 0.4 * DropDirection * DropRange, y - 0.6). - else if spriteNum is equal to 2, set new position to (x - 0.2 * DropDirection * DropRange, y + 0.8). - else if spriteNum is equal to 3 and player is not null, if pow(player.getX()-getX(),2) <= 60 && pow(player.getY()+15-getY(),2) <= 500, add item to

		player.increase spriteCounter by 1
		- if spriteCounter is equal to 10, set spriteNum to 2.
		- else if sprintCounter is equal to 20, set spriteNum to 3.
		- if prepareDelete is equal to 1, increase deleteCounter by 1,
		    - if deleteCounter is equal to 30, set Wink to true.
		    - if deleteCounter is equal to 60, set Wink to false and set deleteCounter to 0.
		call function autoDelete()

+	draw(GraphicContext gc)	if not picked and not wink, draw item image at position (x, y).
+	addItem (Player player)	for all of player's items in inventory bar, - if amount of that item is less than 9 and not added, increase by 1 - set slot to current number of inventory bar. - set added and picked to true then return nothing. if not added and inventory bar of player is less than 9, - add this into player's inventory bar - set slot to player's inventory bar size - 1, - set added and picked to true
+	void deleteItem (Player player)	for all of player's items in inventory bar, - if amount of item in that slot is greater than 0, decrease the amount by 1, then if the amount is 0, remove this from slot. return nothing.
+	void autoDelete()	if spriteCounter is equal to 1200, set prepareDelete to 1. and if spriteCounter is greater than 1700, remove this from itemsOnFloors.

4.5. Class BluePotion extends Potion

4.5.1. Constuctor

+ BluePotion (int slotNumber)	set DefaultValues to slotNumber. set itemImage from "item.BluePotion.png" set itemClass to BluePotion.class set DropDirection to 1 set DropRange to 3.
+ BluePotion (Monster monster, Player player)	set DefaultValues to monster, player. set itemImage from "item.BluePotion.png" set itemClass to BluePotion.class set DropDirection to 1 set DropRange to 3.

4.5.2. Methods

+ void use (Player player)	if player is null, do nothing otherwise, increase player's Mana by 600 and delete this item.

4.6. Class CoffeePotion extends Potion

4.6.1. Constuctor

+ CoffeePotion (int slotNumber)	set DefaultValues to slotNumber. set itemImage from "item.CoffeePotion.png" set itemClass to CoffeePotion.class set DropDirection to 1 set DropRange to 6.

+ CoffeePotion (Monster monster, Player player)	set DefaultValues to monster, player.
	set itemImage from "item.CoffeePotion.png"
	set itemClass to CoffeePotion.class
	set DropDirection to 1
	set DropRange to 6.

4.6.2. Methods

+ void use (Player player)	if player is null, do nothing
	otherwise, decrease player's sleepiness by 800 and delete this item.

4.7. Class DragonBallBeans extends RedPotion

4.7.1. Constuctor

+ DragonBallBeans (int slotNumber)	set DefaultValues to slotNumber.
	set itemImage from
	"item.DragonBallBeans.png"
	set DropRange to 1.
+ DragonBallBeans (Monster monster, Player player)	set DefaultValues to monster, player.
	set itemImage from
	"item.DragonBallBeans.png"
	set DropRange to 1.

4.7.2. Methods

+ void use (Player player)	if player is null, do nothing

	otherwise, set HP of player by maxHp of player and delete this item.

4.8. Class RedPotion extends Potion

4.8.1. Constuctor

+ RedPotion (int slotNumber)	set DefaultValues to slotNumber. set itemImage from "item.RedPotion.png" set itemClass to RedPotion.class set DropDirection to -1 set DropRange to 2
+ RedPotion (Monster monster, Player player)	set DefaultValues to monster, player. set itemImage from "item.RedPotion.png" set itemClass to RedPotion.class set DropDirection to -1 set DropRange to 2.

4.8.2. Methods

+ void use (Player player)	if player is null, do nothing otherwise, increase player's Hp by 600 and delete this item.

5. Package entity

5.1. Abstract Class Prop

5.1.1. Fields

- double x, y	
- Image propImage	

+ int spriteCounter	set to 0
+ int spriteNum	set to 1
- ShadowEffect shadowEffect	
- Object propClass	

5.1.2.   Methods

getter / setter for each fields	

5.2.   Interface PropFunctionable

5.2.1.   Methods

+ void draw(GraphicContect gc)	
+ void update()	

5.3.   Abstract Class Entity

5.3.1.   fields

- double x, y	
- double speed	
- Image up1, up2, down1, down2, left1, left2, right1, right2	
- String direction	
+ int spriteCounter	set to 0
+ int spriteNum	set to 1

- boolean isAttack	
- ShadowEffect shadowEffect	
- Object EntityClass	
- boolean canWalkUp, canWalkLeft, canWalkDown, canWalkRight	

5.3.2. Methods

+ void setX (double x)	set x to the value is given. if x is less than 0, set x to 0. if x is greater than 800, set x to 800.
+ void setY (double y)	set y to the value is given. if y is less than 0, set y to 0. if y is greater than 600, set y to 600.
getter / setter for other fields	

5.4. Interface EntityFunctionable

5.4.1. Methods

+ void draw(GraphicContect gc)	

5.5. Class BaseProp extends Prop

5.5.1. constructor

+ void BaseProp(int x, int y)	set DefaultValues by x,y

5.5.2. methods

+ void setDefaultValues (int x, int y)	set PropClass to BaseProp.class

	setX to x
	setY to y
	set PropImage to prop/ChristmasTree.png""
+ void updateAll()	if Props is empty , do nothing
	otherwise, for all of the things in Prop, update all props using its update() of its class.
+ vois drawAll (GraphicContext gc)	if Props is empty , do nothing
	otherwise, for all of the things in Prop, update all props using its draw(gc) of its class.

5.6. Class Boss extends Monster

5.6.1. fields

- boolean isAngry	

5.6.2. constructor

+ Boss()	call super()
+ Boss (Player player)	set DefaultValues by player
	set EntityClass to Boss.class

5.6.3. methods

+ void setDefaultValues (Player player)	set player to player
	setXY to (Math.floor(Math.random() *(800)),Math.floor(Math.random() *(600)))

	set Speed to 0.4 set MaxHp to its Hp set Damage to 2 + player's level * 0.2 set Direction to "Down" set Angry to false loadpic(); set ShadowEffect to its ShadowEffect add shadowEffect to Effects
+ void loadpic ()	Set image path
+ void update (Player player)	set Player to player if HP is less than 0, call function delete() and increase EXP by 30. let canWalk to true if pow((player.getX()-getX()),2) + pow(player.getY()-getY(),2) < 4000, decrease player's HP by its damage. if pow((player.getX()-getX()),2) + pow(player.getY()-getY(),2) < 70000, set Angry to true. if player's waitFOrStart is less then 10 and canWalk, - if player's y position is less than its y position, setY position down by it's speed points and setDirection to "up". - if player's y position is greater than its y position, setY position up by it's speed points and setDirection to "down". - if player's x position is less than its x position, setX position left by it's speed points and setDirection to "left". - if player's x position is greater than its x position, setX

position right by it's speed points and setDirection to "right".

- if player's attackObj is visible and it is in range that attackObj can fight with calculating the position, decrease its HP by the attackObject's damage.

calculating,

	X	Y
right	(attackObj's x, attackObj's x + attackObj's damage)	(attackObj's y, attackObj's y + attackObj's sizeY /2)
left	(attackObj's x, attackObj's x - attackObj's damage)	(attackObj's y, attackObj's y + attackObj's sizeY /2)
down	abs(this's x, player's x) < 10	(player's Y, player's Y + attackObj's range)
up	abs(this's x, player's x) < 20	(player's Y, player's Y - attackObj's range)

else decrease its HP by attackObject's damage if following this condition and attackObj is visible,

	- it's x < player's x and player's direction is "left"
	
	- it's x > player's x and player's direction is "right"
	
	- it's y < player's x and player's direction is "up"
	
	- it's y > player's x and player's direction is "down"
	
	else set angry to false
	
	if not Angry, sprintNum = 1.
	
	else if it angry,
	
	- increase spritCounter by 1
	
	- if spriteCounter > 20
	
	    - if spriteNum is equal to 1, set spriteNum to 2.
	
	    - if spriteNum is equal to 2, set spriteNum to 3.
	
	    - if spriteNum is equal to 3, set spriteNum to 1.
	
	    - set spriteCounter to 0

+ draw (GraphicContext gc)	set currentImage to get+direction+spriteNum such as direction is "up" and spriteNum is 1, set currentImage to getUp1() draw currentImage at position (x - 50, y - 50)
+ void delete()	add diedEffect(this, player) to Effects add DragonBallBeans(this, player) to itemOnFloors if the number of monster that has died is equal to 5, set MonsterDied to 0 and add Boss to player' s monster. remove shadowEffect from Effects remove this from monster increase player's point by 40 increase player's monsterDied by 1
+ void getAttacked()	if player's attackObj's is visible, decrease Hp by player's attackObj's damage if it following this condition,

	X	Y
right	(attackObj's x, attackObj's x + attackObj's range)	(attackObj's y, attackObj's y + attackObj's sizeY /2)
left	(attackObj's x, attackObj's x - attackObj's range)	(attackObj's y, attackObj's y + attackObj's sizeY /2)
down	abs(this's x, player's x) < 10	(player's Y, player's Y + attackObj's range)
up	abs(this's x, player's x) < 20	(player's Y, player's Y - attackObj's range)

+ void getCloseAttack()	decrease Hp by player's attackObj's damage if it following one of these condition and player's attactObj is visible
	- if x is less than player's x and direction is "left"
	- if x is greater than player's x and direction is "right"
	- if y is less than player's y and direction is "up"
	if y is greater than player's y and direction is "down"
+ void walk()	if y is greater than player's y, decrease y position by its speed and set direction to "up"

	if y is less than player's y, increase x position by its speed and set direction to "down" if x is greater than player's x, decrease x position by its speed and set direction to "left" if x is less than player's x, increase x position by its speed and set direction to "right"
+ void setXY (double x, double y)	set x = Math.floor(Math.random() *(800)) and y = Math.floor(Math.random() *(600)) while x < 330 and y < 130 if x is greater than 670, set x equal to 670 if x is less than 130, set x equal to 130 if y is greater than 670, set y equal to 670 if y is less than 130, set y equal to 130 setX to x, setY to y
+ boolean isAngry()	return isAngry
+ void setAngry (boolean angry)	set isAngry = angry

5.7.   Class ChristmasTree extends BaseProp implements PropFunctionable

5.7.1.   constructor

+ ChrismasTree (int x, int y)	set DefaultValues by x,y setPropClass to ChrismasTree.class setPropImage to image using element "prop/ChristmasTree.png"

5.7.2.   method

+ void update()	

+ void draw (GraphicContext gc)	draw PropImage at pos (x, y)

5.8. Class Snowman extends BaseProp implements PropFunction

5.8.1. constructor

+ Snowman (int x, int y)	set DefaultValues by x,y setPropClass to Snowman.class setPropImage to image using element "prop/Snowman.png"

5.8.2. method

+ void update()	
+ void draw (GraphicContext gc)	draw PropImage at pos (x, y)

5.9. Class Gift extends BaseProp implements PropFunctionable

5.9.1. constructor

+ Gift (int x, int y)	set DefaultValues by x,y setPropClass to Gift.class setPropImage to image using element "prop/Gift.png"

5.9.2. method

+ void update()	
+ void draw (GraphicContext gc)	draw PropImage at pos (x, y)

5.10. Class Gift2 extends BaseProp implements PropFunctionable

5.10.1. constructor

+ Gift2 (int x, int y)	set DefaultValues by x,y setPropClass to Gift2.class setPropImage to image using element "prop/Gift2.png"

5.10.2. method

+ void update()	
+ void draw (GraphicContext gc)	draw PropImage at pos (x, y)

5.11. Class Player extends Entity implements EntityFunctionable

5.11.1. FIelds

- double playerX, playerY	
- int level, sleepCounter	
- double HP, maxHp, mana, maxMana, exp, maxExp, sleepiness, maxSleepiness	
- Image HBP, HBP2, manaB, manaB2, expB, sleepB	
- boolean isSpawned	
- int point, monsterDIed	
- int forwardStart	
- ProfileBox profileBox	

- SuperSeiya superSeiya	
- boolean is SuperSeiya	
- boolean pressedV	set to false
- AttackObj attackObj	
- InventoryBar inventoryBar	

5.11.2. constructor

+ Player()	call setDefaultValues()

5.11.3. methods

+ void setDefaultValues()	if selectedCharacter is equal to "1", set maxHp, HP, mana, maxMana to 4000
	else set maxHp, HP, mana, maxMana to 3000
	setX to 400
	setY, Exp, sleepiness, sleepCounter, point, monsterDied to 0
	set level, speed to 1
	set maxExp to 100
	set maxSleepiness to 10000
	set canWalkRight, canWalkLeft, canWalkUp, canWalkDown to true
	set SuperSeiya, pressedV, Spawned to false
	set waitForStart to 150
	set EntityClass to Entity.class
	set direction to "down"
	loadpic();
	set currentImage to null

	set InventoryBar to new InventoryBar() set AttackObj to new AttackObj(this) add this to monster 2 times
+ vois spawn()	if waitForStart is greater than 10, set y to 0 else set waitForStart to -1 if this's y is less than 300, increase y by 10 else set spawn to true, add spawnEffect to Effects, set shadowEffect to new ShadowEffect and add to Effects.
+ loadpic()	set new image
+ update()	if not spawn, call spawn() else - if K is pressed, call attack() - else set attackObj visible to false - update inventoryBar - updatePlayWalk() - setAttack(KeyHandler.getKeyPressed(KeyCode.K)) - update superSeiya - update attackObj increase spriteCounter by 1 if spriteCounter > 20 - if spriteNum is equal to 1, set spriteNum to 2. - else if spriteNum is equal to 2, set spriteNum to 1. - set spriteCounter to 0 setAutoValues() update profileBox if HP is equal or less than 0 or sleepiness is equal or greater than maxSleepiness, set gameOver to true if gameOver, sout("Game Over!!")

+ void draw (GraphicContext gc)	setImageWithCounter()
	
	draw profileBOx, EXP, sleepiness, AttackObj
	
	if(waitFOrStart is less than 20, draw currentImage at position (x, y) , draw Hp, Mana
	
	gc.fillText(playerName,getX()-5,getY()-15);
	    gc.strokeText("Lv."+getLevel(),getX()-32,getY()-15);
	    gc.strokeText("Point : ",680,20);
	    gc.fillText(String.valueOf(getPoint()),720,21);

+ void updatePlayerWalk()	if W is pressed and canWalkUp, decrease y by speed and set direction to "up" if A is pressed and canWalkUp, decrease x by speed and set direction to "left" if S is pressed and canWalkUp, increase y by speed and set direction to "down" if D is pressed and canWalkUp, increase x by speed and set direction to "right"
+ void drawHp (GraphicContext gc)	while i < HP / (maxHp / 32) draw HPB at position (x +i , y-4.5) while i < HP / (maxHp / 112) draw HPB2 at position (165 + i, 29)
+ void drawMana (GraphicContext gc)	while i < mana / (maxmana / 32) draw manaB at position (x +i , y-7)

		while i < mana / (maxMana / 112) draw manaB2 at position (165 + i, 47)
+	void drawSleepiness (GraphicContext gc)	while i < sleepiness / (maxSleepiness / 207) draw SleepinessB at position (34 +i , 97)
+	void drawExp (GraphicContext gc)	while i < Exp / (maxExp / 800) draw ExpB at position (i , 595)
+	void setAutoValues()	if not spawned, decrease waitForStart by 1 increase HP and Mana by 0.2 increase sleepiness by 2 if sleepCounter is equal to 20, set sleepCounter to 0, increase sleepiness by 5
+	void setImageWithCounter()	set currentImage to get+direction+spriteNum such as direction is "up" and spriteNum is 1, set currentImage to getUp1()
+	void setExp (double Exp)	if exp is greater or equal to maxExp, set exp to 0 increase maxExp by 40, increase maxHp and maxMana by 10%, set Hp to maxHp, set mana to maxMana, increase damage of attackObj by 30%, increase level by 1
+	void saiyanUpdate()	if not pressed and not Supersaiyan, if V is pressed, setSuperSaiyan to new SUperSaiyan, add to Effect, set SuperSaiyan and pressV to true, increase speed by 1 if not pressed but Supersaiyan, if V is pressed, remove superSaiyan from Effects, add to Effect, set SuperSaiyan and pressV to false, decrease speed by 1 else if V is not pressed, set PressV to false

	if mana is 0 and speed is 2, set speed to 1
+ void setSleepiness (double sleepiness)	if sleepiness is greater or equal to maxSleepiness, sout("Game Over by Sleeping"), sleepiness = maxSleepiness set sleepiness equal to the given or following the condition above
+ void setX (double playerX)	if x is less than 0, set to 0. if x is greater than 770, set to 770 set x equal to the given or following the condition above
+ void setY (double playerY)	if y is less than 0, set to 0. if y is greater than 600, set to 600 set y equal to the given or following the condition above
+ void setHP (double HP)	if HP is greater than maxHP, set to maxHP if HP is less than 0, set to 0. set HP equal to the given or following the condition above
+ void setMana (double mana)	if mana is greater than maxMana, set to maxMana if mana is less than 0, set to 0. if mana is equal to 0, setSuperSeiya to false set mana equal to the given or following the condition above

5.12.   Class Monster extends Entity implements EntityFunction

5.12.1.   FIelds

Paly player	
- double HP, maxHP	

- Image HPB	
- double damage	
- boolean isAngry	
- boolean canWalk	set to true

5.12.2. constructor

+ Monster()	
+ Monster(Player player)	set DefaultValues to player
+ void setDefaultValues(Player player)	set player to player setXY to (Math.random() *(800),Math.random() *(600)) set speed to 0.3 set masHp to 200 + 30 * player's level set Hp to maxHp set damage to 2 + player's level * 0.2 set direction to "down" set Angry to false set canWalk, all 4 direction, to true loadpic() setShadow and add into Effect set EntityClass to Monster.class
+ void loadpic()	set Image to Up1-Up3, Down1-Down3, Right1-Right3, Left1-Left3, HPB
+ void update	set player to player if Hp is less or equal to 0, call delete() and increase Exp by 15.

	set canWalk to true
	
	call MonsterWalkUpdate()
	
	if it angry,
	   - increase spriteCounter by 1
	   - if spriteCounter > 20
	      - if spriteNum is equal to 1, set spriteNum to 2.
	      - if spriteNum is equal to 2, set spriteNum to 3.
	      - if spriteNum is equal to 3, set spriteNum to 1.
	      - set spriteCounter to 0

+ void walk()	if y is less than player's y, decrease y position by its speed and set direction to "up" if y is less than player's x, decrease x position by its speed and set direction to "left" if y is greater than player's y, increase y position by its speed and set direction to "down" if x is greater than player's x, increase x position by its speed and set direction to "right"
+ void getAttack()	if player's attackObj's is visible, decrease Hp by player's attackObj's damage if it following this condition, <table><tr><td></td><td>X</td><td>Y</td></tr><tr><td>right</td><td>(attackObj's x, attackObj's x + attackObj's</td><td>(attackObj's y, attackObj's y + attackObj's</td></tr></table>

	range)	sizeY /2)
left	(attackObj's x, attackObj's x - attackObj's range)	(attackObj's y, attackObj's y + attackObj's sizeY /2)
down	abs(this's x, player's x) < 10	(player's Y, player's Y + attackObj's range)
up	abs(this's x, player's x) < 20	(player's Y, player's Y - attackObj's range)

+ void getCloseAttack()	, decrease Hp by player's attackObj's damage if it following one of these condition and player's attactObj is visible - if x is less than player's x and direction is "left" - if x is greater than player's x and direction is "right" - if y is less than player's y and direction is "up" - if y is greater than player's y and direction is "down"
+ void draw(GraphicsContext gc)	call imageFor<direction> () draw the image draw Hp

+ void SetImageForDrawLeft()	setCurrentImage by the spriteNum th direction image for spriteNum in range [1, 3]
+ void SetImageForDrawRight()	
+ void SetImageForDrawDown()	
+ void SetImageForDrawUp()	
+ void delete()	add diedEffect(this, player) to Effect
	if spriteNum equal to 1, add CoffeePotion(this, player) to itemOnFloors
	if spriteNum equal to 2, addRedPotion(this, player) to itemOnFloors
	if spriteNum equal to 3, add BluePotion(this, player) to itemOnFloors
	add Monster(player) to monster.
	if spriteNUm is 1, add more Monster(player) to monster.
	remove shadowEffect from Effect, remove this from monster
	increase point by 15, monsterDied by 1
+ void updateAll(ArrayList<Monster> monsters)	if monster is empty, do nothing
	otherwise, update all of monster using the update methods of its class
+ void drawAll(ArrayList<Monster> monsters, GraphicsContext gc)	if monster is empty, do nothing
	otherwise, draw all of monster using the draw methods of its class
+ void setXY	set x = Math.floor(Math.random() *(800)) and

		y = Math.floor(Math.random() *(600)) while x < 330 and y < 130 if x is greater than 770, set x equal to 770 if x is less than 30, set x equal to 30 if y is greater than 480, set y equal to 480 if y is less than 20, set y equal to 20 setX to x, setY to y

+	void MonsterWalkUpdate()	if distance between player and monster less than sqrt of 800, decrease player's Hp by the damage and set canWalk to false
		
		if distance between player and monster less than sqrt of 70000,
		
		   - set angry to true
		
		   - if waitForStart is less than 10, if it can walk, call function walk(), attack(), if not, call function attackMorePower()
		
		else set angry to false
		
		if it is not angry, set spriteNum to 1

+	void setHP(double HP)	if Hp is greater than maxHp, set it to maxHp. set Hp to the value that is given.
+	void drawHp (GraphicContext gc)	while i < HP / (maxHp / 32) draw HPB at position (x +i , y - 5)
getter / setter of other fields		

6. Package Font

6.1. Class Number

6.1.1. Fields

+ Image number0, number1, …, number9	set image using element from path named in format "number/<number>.png"
+ ArrayList<Image> numbers	

6.1.2. Constructor

+ Number()	initialize numbers to new arrayList add all fields into the array

6.1.3. methods

+ Image getNUmberImage(int number)	set number to number that given except when number is greater than 9, set it to 9.

7. Package Main

7.1. Class GamePanel extends Canvas

7.1.1. fields

+ Player player	initialize field
+ Monster monster	
+ BaseEffect effect	
+ Background background	
+ *Number number*	
+ *ArrayList<Monster> monsters*	

+ *ArrayList<BaseEffect> Effects*	
+ *ArrayList<BaseItem> itemOnFloors*	
+ *ArrayList<BaseProp> Props*	
+ *boolean GameOver*	set to false

7.1.2. constructor

+ GamePanel(double width, double height)	set width and height by the given values set this can visible call addKeyLitener() setFill to Black remove monster shadow from Effect. set all prop

7.1.3. methods

+ void addkeylistener()	if key is press, get the code and set to true if key is released, get the code and set false.
+ void update()	if player is null, do nothing otherwise, update player, update all of monster, update all of effect of player, update all pf prop
+ void paintComponent()	if player is null, do nothing otherwise, draw background, draw all of item on the floors, Effect, monster, baseProp. draw player and player's inventory bar.

+ void setAllProp()	add ChristmasTree at pos (-55, 450), (-70,300), (-80,120) and (700,450)
	add Gift at pos (25,575) and (780,574)
	add Gift2 at pos (5,570) and (765,570)
	add Snowman at pos (670,502)
+ void setAllDefaultValues()	set values of player to null
	clear monster, effects, itemOnFloors, Props by using clear()

7.2. class KeyHandler

7.2.1. fields

| - *ArrayList<KeyCode> keyPressed* | initialize field |

7.2.2. methods

| + *boolean getKeyPressed(KeyCode keycode)* | return true if keypressed contain keycode |
| + *void setKeyPressed(KeyCode keycode,boolean pressed)* | if pressed and does not contain keycode, add keycode to keypressed. else remove keycode from keypressed sout the keyPressed. |

7.3. Class Main

7.3.1. fields

| - Stage stage | |

7.3.2. methods

+ *void main(String[] args)*	sout "Hello and welcome!"
+ void start(Stage primaryStage)	set stage to primaryStage setTitle to "Coffee Man" initialize sceneStart to nw StartScene set scene of stage to sceneStart show stage play music using methods from MusicController

7.4. Class MusicController

7.4.1. fields

- *String MUSIC_FILE_PATH*	set path to "res/element/soundtrack.mp3"
- *MediaPlayer mediaPlayer*	

7.4.2. methods

+ *void playMusic()*	initialize backgroundMusic to new media from MUSIC_FILE_PATH initalize mediaPlayer to backgroundMusic set CycleCount to Indefinite play()
+ HBox createMusicControllerPopup()	initialize hbox1 with 0. set visible to flse initialize volumeSLider, soundButton initialize hbox2 with 0. add the button and slider to hbox2 call configurePopupSetting(hbox2)

	add hbox2 to hbox1 return hbox1
- *Slider createVolumeSlider()*	create volume slider (with style) to control the volume
- *void configurePopupSetting(HBox popupSetting)*	set style for the popup
- void toggleSoundButtonImage(Button soundBtn, ImageView soundLoud, ImageView soundLow)	do when mediaPlayer is not null if volume is not 0, set to 0 and set graphic to soundlow, else set to 100 and set graphic to soundLoud
- Button createSoundButton()	set the style set on click that when click switch the graphic and call toggleSoundButtonImage()
- void setVolume(double volume)	when mediaPlayer is not null, set the volume to volume

8. Package Object

    8.1. Class AttackObj extends basicAttack implements basicAttackFunctionable

        8.1.1. constructor

+ AttackObj(Player player)	setDefaultValues by player

        8.1.2. methods

+ void setDefaultValues(Player player)	set BaseRange to 15, setX by player's X, setY by player's Y, set visible to false, set player to player, set speed and damage to 1, set range to 60, set direction to player's direction , loadpic(), setSizeX and Y to 32.

+ loadpic()	set image for animation

+ void update()	increase spriteCoutner by 1
	
	if spriteCounter > 20
	
	    - if spriteNum is equal to 1, set spriteNum to 2.
	    - if spriteNum is equal to 2, set spriteNum to 1.
	    - set spriteCounter to 0
	
	set X, y, direction by the values from player's
	
	if player use supersaiyan, set damage to 10, if not, set to 1

+ void draw(GraphicsContext gc)	playerImage to null do these if this is visible, - if character is "1",

	spriteNum = 1	spriteNum = 2
up	playeriMage = image Up1 set pos to (x, y - range/2 -7)	playeriMage = image Up2 set pos to (x, y - range -7)
down	playeriMage = image Down1 set pos to (x, y - range/2 -8)	playeriMage = image Down2 set pos to (x, y - range -8)

	spriteNum = 1	spriteNum = 2
right	playeriMage = image Right1 set pos to (x, y - range/2)	playeriMage = image Right2 set pos to (x, y - rang)
left	playeriMage = image Left1 set pos to (x, y - range/2 -10)	playeriMage = image Left2 set pos to (x, y - range -10)

- if character is "2",

	spriteNum = 1	spriteNum = 2
up	playeriMage = image Up1 set pos to (x-15, y - range/2 -15)	playeriMage = image Up2 set pos to (x-15, y - range -15)
down	playeriMage = image Down1 set pos to (x-7, y - range/2 -8)	playeriMage = image Down2 set pos to (x-7, y - range -8)

	right	playeriMage = image Right1 set pos to (x-20, y - range/2)	playeriMage = image Right2 set pos to (x-20, y - rang)
	left	playeriMage = image Left1 set pos to (x, y - range/2 -20)	playeriMage = image Left2 set pos to (x-27, y - range -20)

draw imahe at pos (x, y)

set Default Values by player

8.2.   Abstract Class BasicAttack

8.2.1.   fields

- double x, y	
- double sizeX,sizeY	
- double speed, damage	
- int range, baseRange	
- Player player	
- boolean visible	
- boolean destroyed	

- Image up1, up2, down1, down2, left1, left2, right1, right2	
- String direction	
+ int spriteCounter	set to 0
+ int spriteNum	set to 1

8.2.2. methods

getter / setter of the fields	

8.3. Interface basicAttackFunctionable

8.3.1. methods

+ void draw(GraphicsContext gc)	
+ boolean isDestroyed()	
+ boolean isVisible()	

9. Package Profile

9.1. Class ProfileBox

9.1.1. fields

- Player player	
- Image profileImage	
- Image profileBoxImage	
- String profileBoxURL	

- int spriteCounter	
- int spriteNum	
- String profileImageURL	

9.1.2. constructor

+ ProfileBox()	setDefaultValues()

9.1.3. methods

+ void setDefaultValues()	setProfileImageURL to "player/ProfileImage_1_1.png" if selectedCharacter is "1", setProfileImageURL to "player/ProfileImage_1.png" if selectedCharacter is "2", setProfileImageURL to "player/ProfileImage_2.png" setProfileImage to profileImageURL setProfileBoxImage to ProfileBoxImageURL set player to player
+ void draw(GraphicsContext gc)	draw ProfileBoxImage, ProfileImag at pos (0, 0)
+ void update(Player player)	setplayer to player set area that player can walk
getter / setter of the fields	

10. Package Scene

    10.1.   Class StartScene extends Scene

        10.1.1.   constructor

+ StartScene(Stage stage)	call createStartScene(stage) and set 800 * 600

        10.1.2.   methods

- *VBox createStartScene(Stage stage)*	create btnStart, btnSetting, btnHowToPlay, btnExit by createButton() add them into Hbox menu except btnStart. createRule. set style set onclick to all button
- Button createButton(String string, String imagePath)	set style for button
- Text rule(String rule)	set style for text rule
- VBox createRules()	create rule box

    10.2.   GameScene extends Scene

        10.2.1.   constructor

+ GameScene(Stage stage)	initialize stackpane and set 800 * 6000 initialize gamePanel createRetryPane and set visible to false add to root.getChildren call gamePanel.requestFocus() use AnimationTimer() - call update from gamePanel

	- if gameOver, set to false, set reTryPane to visible, setAllDefaultValues of gamePanel call paintComponent() then start animation

10.2.2. methods

- VBox createRetryPane(Stage stage)	create text "you lose" and set style initialize createRetryButton and then add to the vbox
- Button createRetryButton(Stage stage)	create button "try again" and set style set on click - set gameOver to false and set new scene to stage as StartScene

10.3. cene extends Scene

10.3.1. constructor

+ StartScene(Stage stage)	call createStartScene(stage) and set 800 * 600

10.3.2. methods

- VBox createSelectedScene(sStage stage)	createPlayerNameTextField();
	 createCharacterPane();
	 createPlayButton(stage)
	 create Text "PLAYER"
	 add to root
	 return root

- TextField	create Textfield and set style

createPlayerNameTextField()	set On action to get text store in plaerName return textfiled
- VBox createCharacterPane()	create button character1 and character2 and send prop defaultImage and selectedImage add to Vbox then return
- void setCharacterSelectionActions(Button character1, Button character2)	set on action, character 1, set selectedCharater to '1' and updateCharacterButton Styles (true) for character2 familiar to character1 but send prop false
- updateCharacterButton Styles	set Style
- Button createPlayButton(Stage stage)	create button "LET"S PLAY, set style and set on action that navigate to GameScene
- void setRootStyle(VBox root)	set style
- void setTextFieldStyle(TextField textField)	
- void setPlayButtonStyle(Button playButton)	
getter setter	