PuppiesProg Documentation

Created by
Kanjana Pednok 6030044221
Jaturit Panpoonsup 6031007221

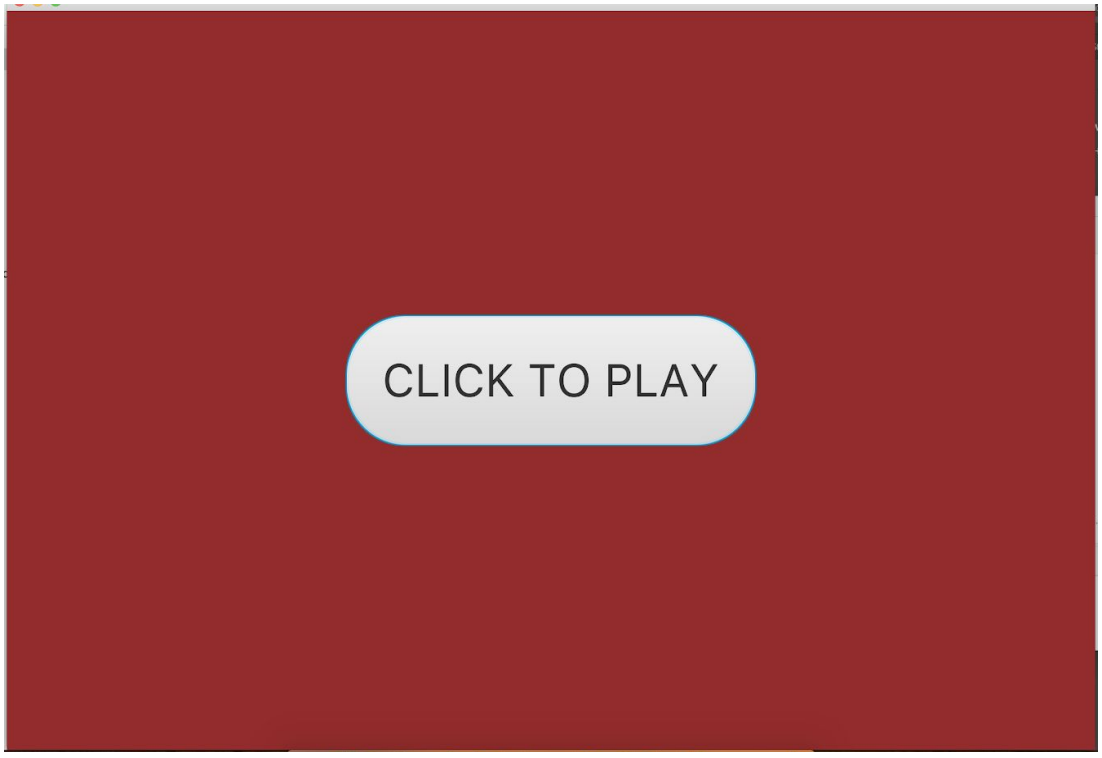
2110215 Programing Methodology
Semester 2 Year 2018
Chulalongkorn University

Introduction

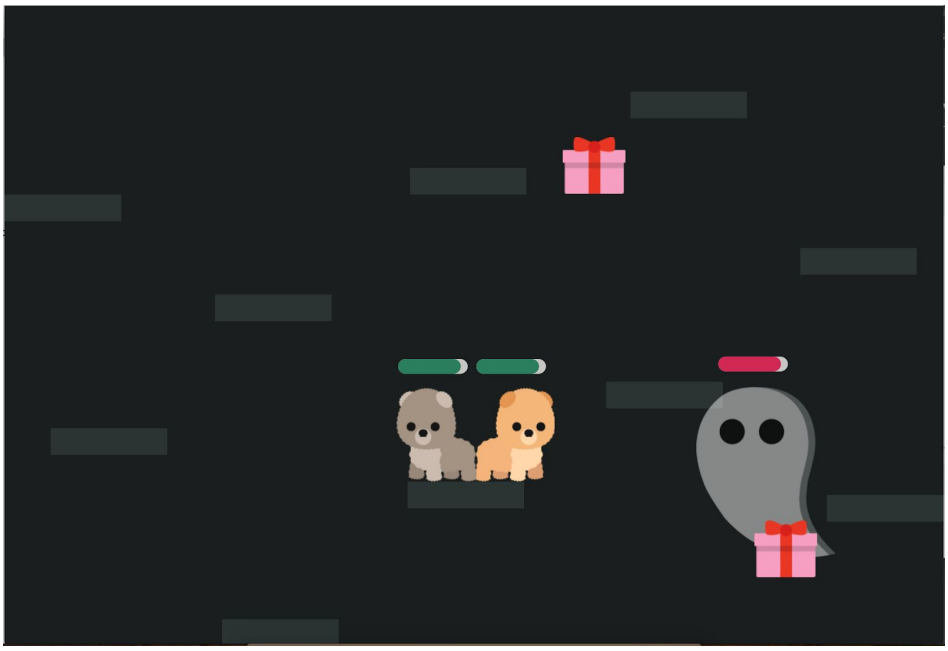
PuppiesProg is a co-op platformer game with one of the cutest concept art and design. You and you friend will be an adorable pompom puppy surviving in haunted mansion with spooky ghost. But don't worry you can pick up a gift box and find special item to fight them. This game is not only good looking and having a cool concept but also contains a bunch of amazing gameplay that you and your friend can't put down.

User Manual

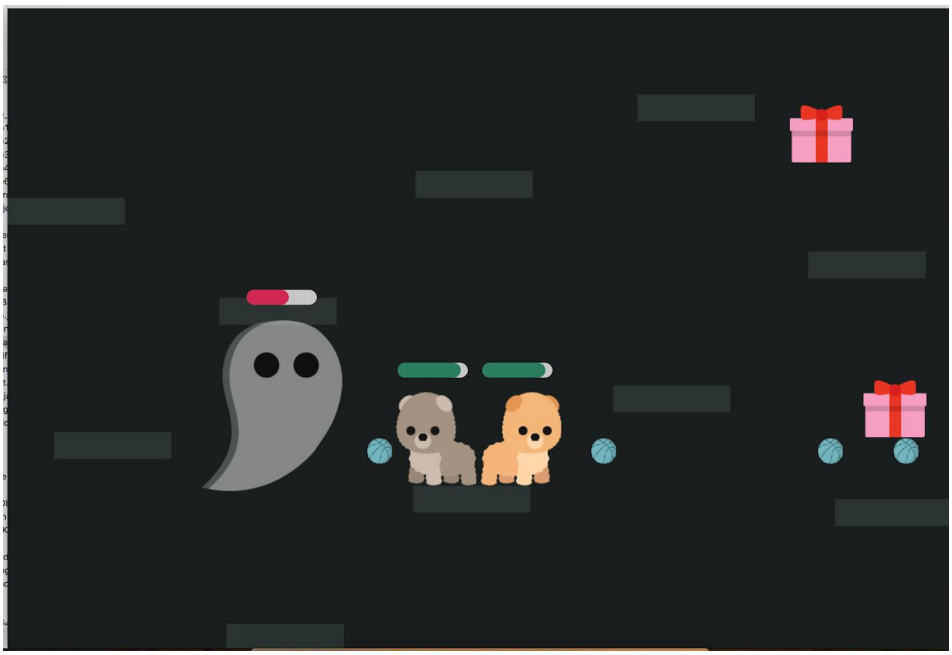
This is the start scene of the game



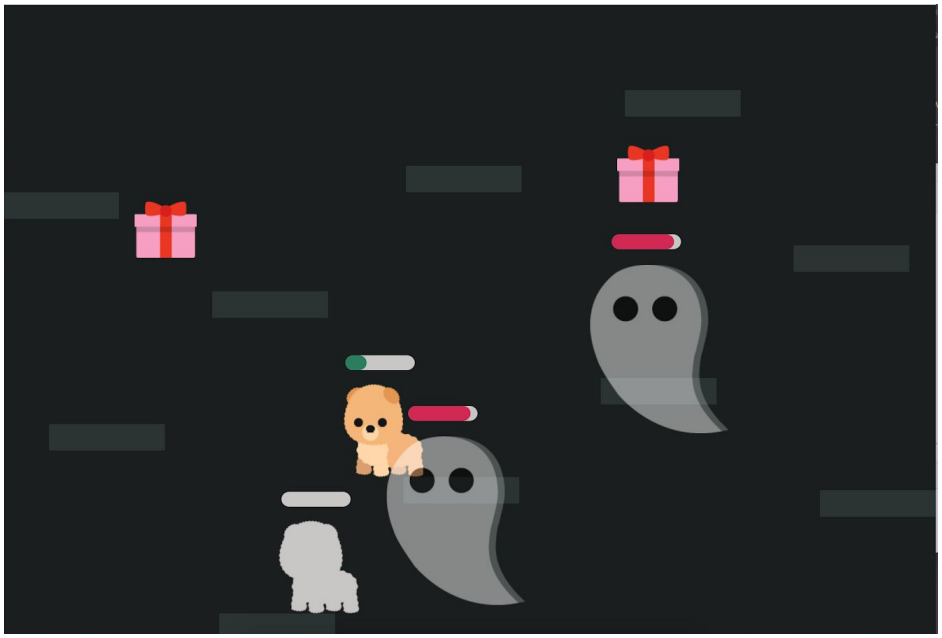
When player click the click to play button the game screen will be appeared with both character on screen



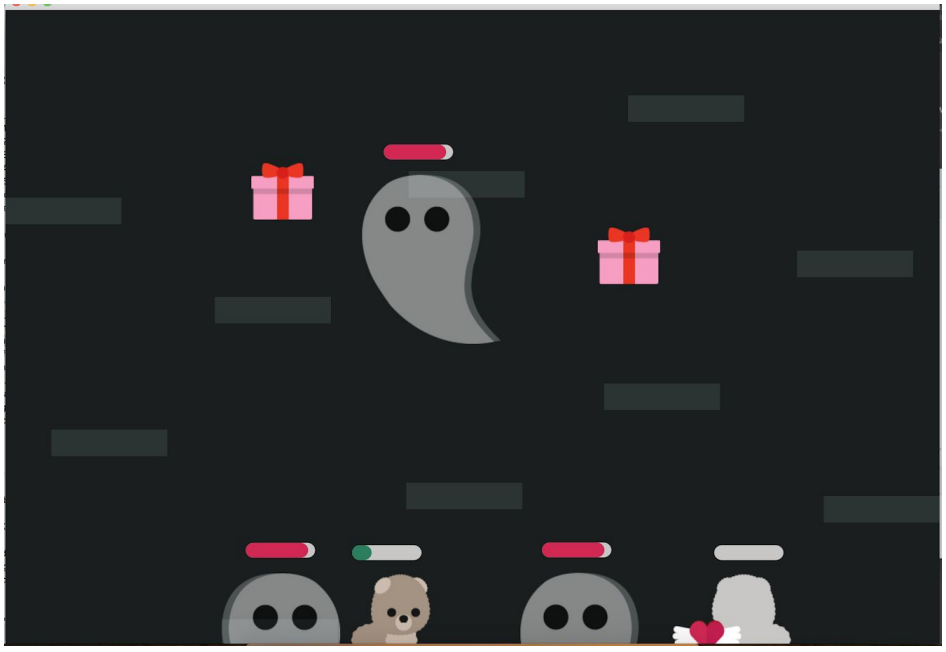
Ghost will be appear randomly and trying to chase player down. Both player need to defend themselves by throwing your item onto the ghost. Which can be pick up from the gift box that floating around the map. (each box have a poins)



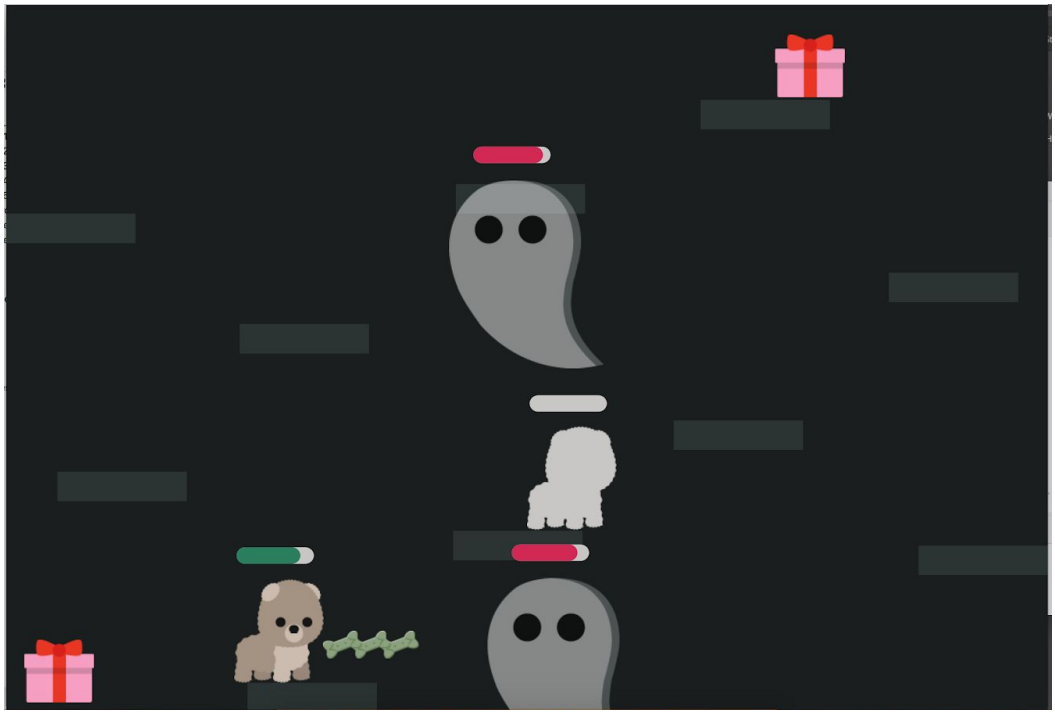
When the ghost can catch up with the player. It's gonna attack players and decrease their hp. If hp bar reach to zero the player will die.



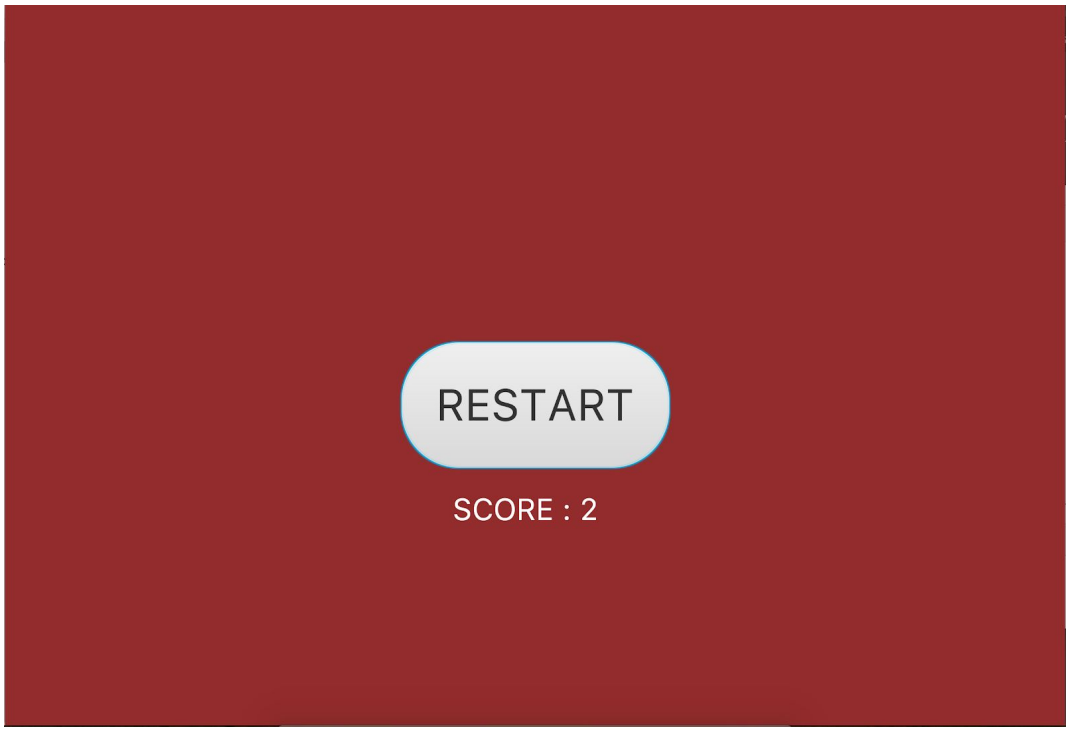
But don't worry this is not the end of the game yet another player can try to pick up gift box and hope to find a heart. The player can shoot a heart to their dead friend and revive him/her



Try not to died and help each other as you can do !



The game ends with scoring and if you and your friend haven't get done with it yet. Feel free to gently click into a restart button and give it a another try.



Game Control

Player 1 :

Move left : ←

Move right : →

Jump : ↑

Shooting : enter

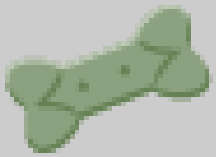
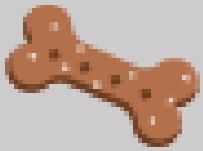
Player 2 :

Move left : A

Move right : D

Jump : W

Shooting : Spacebar

ITEM	picture	SPECIFICATION
Green Bone		take damage to ghost -5hp
Brown Bone		take damage to ghost -10hp
Blue Ball		take damage to ghost -10hp let ghost speed slower
Orange Ball		take damage to ghost -10hp let ghost speed faster
Heart		increasing another puppy hp

- private # protected + public
underline static italic abstract **bold final**

1. Package main

1.1. Class Main extends Application

1.1.1. Field

- GameScreen gameScreen	GameScreen variable
- GameManager gameManager	GameManager variable
- MainMenuScreen mainMenu	MainMenu Variable
- Thread thread	Thread variable

1.1.2 Method

+ void main(String[] args)	Main method that run application
+ void init()	Initialize and load resource
- void update()	Update resource
- void render()	Draw resource

2. Package gameManager

2.1. Class GameManager

2.1.1. Field

- LogicLoop logicLoop	Logicloop variable

2.1.2. Constructor

+ GameManager(GameScreen gameScreen)	Constructor for GameManager class ● Initialize new LogicLoop with given gameScreen

2.2. Class GameOverScreen

2.2.1. Field

- double W	Set width to 1200
- double H	Set height to 900
- Scene scene	Scene variable
- GraphicsContext gc	GraphicsContext variable
- KeyPress keyPress	KeyPress variable

2.2.2. Constructor

+ GameOverScreen()	Create new Scene that contains ● Canvas with width and height ● Scene and KeyPress

2.2.3. Method

Getters of scene, keyPress, gc	Getter and setter

2.3. Class GameScreen

2.3.1. Field

- double W	Set width to 1200
- double H	Set height to 900
- Scene scene	Scene variable
- GraphicsContext gc	GraphicsContext variable
- KeyPress keyPress	KeyPress variable

2.3.2. Constructor

+ GameScreen()	Create new Scene that contains ● Canvas with width and height ● Scene and KeyPress

2.3.3. Method

Getters of scene, keyPress, gc	Getter and setter

2.4. Class KeyPress

2.4.1. Field

- Scene scene	Scene variable
- boolean goUp1	Whether UP is pressed
- boolean goRight1	Whether RIGHT is pressed
- boolean goLeft1	Whether LEFT is pressed
- boolean attacking1	Whether ENTER is pressed
- boolean goUp2	Whether W is pressed
- boolean goRight2	Whether D is pressed
- boolean goLeft2	Whether A is pressed
- boolean attacking2	Whether SPACE is pressed

2.4.2. Constructor

+ KeyPress(Scene scene)	Check on key press and release

2.4.3. Method

+ void setKeyStatus()	Set all key to their match

2.5. Class LogicLoop

2.5.1. Field

- Timeline timeline	Timeline variable
- GameScreen gameScreen	GameScreen variable
- KeyPress keyPress	KeyPress variable
- int ghostCount	count to generate ghost

- int giftCount	count to generate gift
- boolean hasGiftOnScreen	check if has gift on screen

2.5.2. Constructor

+ LogicLoop(GameScreen gameScreen)	Constructor

2.5.3. Method

- void createGhost()	create new ghost to screen
- void createGift()	create new gift to screen

2.6. Class Score implements Renderable

2.6.1. Field

- double x	location x
- double y	location y

2.6.2. Constructor

+ Score()	constructor

2.6.3. Method

+ void increasing()	increasing score by 1
+ void draw()	draw score on screen
+ boolean isDestroyed()	no implement
+ boolean isVisible()	no implement

3. Package sharedObject

3.1. AllObj

3.1.1. Field

+ AllObj ALL	SharedObject instance
- double W	screen width
- double H	screen height
- Puppy1 player1	Puppy1 variable
- Puppy2 player2	Puppy2 variable
- boolean goUp1	check if player1 goUp
- boolean goRight1	check if player1 goRight
- boolean goLeft1	check if player1 goLeft
- boolean attacking1	check if player1 is attacking
- boolean goUp2	check if player2 goUp
- boolean goRight2	check if player2 goRight
- boolean goLeft2	check if player2 goLeft
- boolean attacking2	check if player2 is attacking
- ArrayList<HitBox> blocks	Platform array
- Block allBlocks	All block
- Score scored	score

3.1.2. Constructor

- AllObj()	constructor

3.1.3. Method

+ void update()	Update share object
- void giftUpdate()	Update gift
- void playerUpdate()	Update player
- void ghostUpdate()	Update ghost
+ void draw()	Draw object

+ void drawHitbox()	Draw hitbox
+ void drawRecHitBox()	Draw hitbox
+ boolean isDestroy()	No implement
+ boolean isVisible()	No implement
+ setKeyStatus(boolean goUp1, boolean goLeft1,boolean goRight1, boolean attacking1, boolean goUp2, boolean goLeft2,boolean goRight2, boolean attacking2)	Set key what direction or what action the puppy do

3.2. AllObjList

3.2.1. Field

# ArrayList<Ghost> ghostsList	Ghost list
# ArrayList<Puppy> puppiesList	Puppy list
# ArrayList<Item> itemsList	Item list
# ArrayList<Gift> giftList	Gift list

3.2.2. Constructor

+ AllObjList()	constructor

3.2.3. Method

+ void update()	Update all Object
+ ArrayList<Ghost> getGhostsList	Return ghostList
+ ArrayList<Puppy> getPuppiesList	Return PuppiesList
+ ArrayList<Item> getItemsList	Return itemList
+ ArrayList<Gift> getGiftList	Return giftList
+ void addToGhostsList(Ghost ghost)	Add item to ghostList
+ void addToPuppiesList(Puppy puppy)	Add item to puppiesList

+ void addToItemsList(Item item)	Add item to itemList
+ void addToGiftList(Gift gift)	Add item to giftList
+ void updateGhostsList()	Update ghostList
+ void updatePuppiesList()	Update puppiesList
+ void updateItemsList()	Update itemList
+ void updateGiftList()	

3.3. Renderable (Interface)

3.3.1. Method

+ void draw(GraphicsContext gc)	Draw object with given gc
+ boolean isDestroyed()	
+ boolean isVisible()	

4. Package logic

4.1. Hitbox

4.1.1. Field

- Point topLeft	Top left point of hitbox
- Point bottomRight	Bottom right point of hitbox

4.1.2. Constructor

+ Hitbox()	constructor
+ Hitbox(double x, double y, double width, double height)	Constructor : generate hit box start at point (0,0) with width and height

4.1.3. Method

+ void setRectangle(double x, double y, double width, double height)	Set rectangle start at position x,y with given width and height
+ double getX()	Return position x

+ double getY()	Return position y
Getters and setters of topLeft, bottomRight	Getter and setter

4.2. Point

4.2.1. Field

- double x, y	Point position

4.2.2. Constructor

+ Point(double x, double y)	constructor

4.2.3. Method

Getters and setters of x, y	x and y are Point position

5. Package others

5.1. Block implements Renderable

5.1.1. Field

- double z	Object position
- boolean is_visible	No implement
- boolean is_destroyed	No implement
- Block instance	Block instance
- double WIDTH	Width constance
- double HEIGHT	Height constance
- ArrayList<Hitbox> blocks	Blocks array list

5.1.2. Constructor

- Block()	constructor

5.1.3. Method

- void addBlock(double x,double y)	Add new block to array
+ Block getBlockInstance()	Return block instance
+ ArrayList<Hitbox> getBlocks()	Return all platform
+ void draw(GraphicsContext gc)	draw
+ boolean isDestroyed()	no implement
+ boolean isVisible()	no implement

5.2. Obj (Abstract)

5.2.1. Field

# double x, y, z	object position
# boolean is_visible, is_destroyed	no implement

5.2.2. Constructor

+ Obj(double x, double y, double z)	constructor

5.2.3. Method

+ boolean isDestroyed()	no implement
+ boolean isVisible()	no implement
+ double distanceTo(Obj other)	return the distance to object

6. Package item extends Obj (Abstract)

6.1. Item

6.1.1. Field

- Hitbox hitbox;	Item hitbox
- Image itemIMG	Item image
- double damage	Item damage
- boolean goLeft	Check if facing left

6.1.2. Constructor

+ Item(double x, double y, double z, Image itemImage, double damage, boolean is_visible, boolean is_destroy, boolean goLeft)	Set x to x Set y to y Set z to z Set damage to damage Set itemIMG to itemImage Create new hitbox Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft

6.1.3. Method

+ void draw(GraphicsContext gc)	Draw item image at item position
+ boolean isVisible()	Return true if item is visible
+ void update()	Update item position and draw image
+ void updateHitbox()	Update item hitbox
Getters and setters of hitbox, damage	

6.2. Ball extends Item (Abstract)

6.2.1. Field

- double DAMAGE	Ball damage

6.2.2. Constructor

+ Ball(double x, double y, double z, Image itemImage,boolean is_visible, boolean is_destroy, boolean goLeft)	Set x to x Set y to y Set z to z Set damage to DAMAGE Set itemIMG to itemImage Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft

6.3. BlueBall extends Ball

6.3.1. Field

+ double CHANGE_SPEED	Blue ball slow effect

6.3.2. Constructor

+ BlueBall(double x, double y, double z, boolean is_visible, boolean is_destroy, boolean goLeft)	Set x to x Set y to y Set z to z Set itemIMG to Image.blueBall Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft

6.4. OrangeBall extends Ball

6.4.1. Field

+ double CHANGE_SPEED	Orange ball slow effect

6.4.2. Constructor

+ OrangeBall(double x, double y, double z, boolean is_visible, boolean is_destroy, boolean goLeft)	Set x to x Set y to y Set z to z Set itemIMG to Image.orangeBall Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft

6.5. Bone extends Item (Abstract)

6.5.1. Constructor

+ Bone(double x, double y, double z, boolean is_visible, boolean is_destroy, boolean goLeft)	Set x to x Set y to y Set z to z Set damage to damage Set itemIMG to itemImage Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft

6.6. GreenBone extends Bone

6.6.1. Field

+ double DAMAGE	Green bone damage

6.6.2. Constructor

+ GreenBone(double x, double y, double z, boolean is_visible, boolean is_destroy, boolean goLeft)	Set x to x Set y to y Set z to z Set damage to DAMAGE Set itemIMG to Img.greenBone Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft

6.7. BrownBone extends Bone

6.7.1. Field

+ double DAMAGE	Brown bone damage

6.7.2. Constructor

+ BrownBone(double x, double y, double z, boolean is_visible, boolean is_destroy, boolean goLeft)	Set x to x Set y to y Set z to z Set damage to DAMAGE Set itemIMG to Img.brownBone Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft

6.8. Gift extends Item implements Randomable

6.8.1. Field

+ double DAMAGE	Set gift damage to 0

6.8.2. Constructor

+ Gift()	Set x to 0

	Set y to 0 Set z to 1 Set itemIMG to Img.gift Set damage to DAMAGE Set is_visible to true Set is_destroyed to false Set goLeft to true

6.8.3. Method

+ void update()	Spawn gift into random position and update hitbox
+ void update(Puppy puppy)	Check if puppy pick up the gift , random item and increase score
+ Point randomPosition()	Position random x between 0-1200 Position random y between 0-900
+ boolean checkPoint(double x,double y)	Make sure gift isn't stuck between the block

6.9. Heart

6.9.1. Field

+ double DAMAGE	Heart healing damage
- Puppy puppy	Heart holder

6.9.2. Constructor

+ Heart(double x, double y, double z, boolean is_visible, boolean is_destroy, boolean goLeft, Puppy puppy)	Set x to x Set y to y Set z to z Set itemIMG to Img.heart Set damage to DAMAGE Set is_visible to is_visble Set is_destroyed to is_destroyed Set goLeft to goLeft Set puppy to puppy

6.9.3. Method

Getter of puppy	

6.10. Randomable (Interface)

6.10.1. Method

+ Point randomPosition()	Return randomed position
+ boolean checkPoint(double x, double y)	Check whether it's overlapping with other point or not

7. Package character

7.1. Class Character extends Obj implements Renderable (Abstract)

7.1.1. Field

# Hp hp	Character health points

7.1.2. Constructor

+ Character(double x, double y, double z)	Set x to x Set y to y Set z to z

7.1.3. Method

+ *void takeDamageBy(Obj obj)*	Check what's hit the character and react

7.2. Class Ghost extends Character

7.2.1. Field

- boolean is_visible, is_destroyed	If ghost is visible If ghost is destroyed
- double W, H	Set width to 178 Set height to 216
- double MAX_SPEED	Ghost maximum speed
- double MIN_SPEED	Ghost minimum speed

+ double DAMAGE	Ghost damage
- Image GHOST_IMAGE_LEFT	Ghost left image
- Image GHOST_IMAGE_Right	Ghost right image
- Image ghostIMG	Image of left or right movement
- Hitbox hitbox	Ghost hitbox
- double speed	Ghost's speed
- boolean isLeft	If ghost facing left side

7.2.2. Constructor

+ Ghost(int z)	Set x to random between 0-1200 Set y to random between 0-900 Set z to z Set speed to 0.5 Set hp above ghost

7.2.3. Method

+ void update(Puppy puppy)	Update puppy position and move toward them
+ void moveToPup(Puppy puppy)	Move to puppy
+ void draw(GraphicsContext gc)	Draw ghostIMG at ghost position
+ boolean isDestroyed()	Return true if ghost is destroyed
+ boolean isVisible()	Return true if ghost is visible
+ void takeDamageBy(Obj obj)	Check what's hit ghost ● If hit by ball Take damage and slowed down ● Else Take damage
+ void changeSpeed(double x)	Chage ghost speed
Getters of hitbox, hpValue, hp	

7.3. Class Hp

7.3.1. Field

- double z	z variable
- double x,y	x, y variable
- double W, H	Set width to 89 and height to 19
- boolean is_visible	If Hp is visible
- Color GHOST_BLOOD	Set ghost hp bar color
- Color PUPPY_BLOOD	Set puppy hp bar color
- Color blood	Color of hp bar
- double hp	Amount of hp

7.3.2. Constructor

+ Hp(double x,double y,double z)	Set x to x Set y to y Set z to z Set hp to 90

7.3.3. Method

+ void draw(GraphicsContext gc)	Draw rounded rectangle to show hp bar
+ void draw(GraphicsContext gc,Renderable renderable)	Check whether a ghost or puppy and match its blood
+ boolean isVisible()	Return true if visible
+ void setPoint(double x,double y)	Set coordinates where hp bar is
+ void decrease	Decrease when damaged
Getters and setters of hp	Getter and setter

7.4. Class Puppy extends Character

7.4.1. Field

# double *WIDTH*	Width of puppy
# double *HEIGHT*	Height of puppy
# double *GRAVITY*	Gravity = 3
# double *FRICTION*	Friction = 0.8
# ArrayList<Hitbox> *blocks*	List of all hitbox
# double speedX	SpeedX = 0
# double speedY	speedY = 0
# Image dogIMG	Image for left or right movement
# Hitbox hitbox	Whole body hitbox
# Hitbox hitboxHead	Head hitbox
# Hitbox hitboxFeet	Feet hitbox
# Hitbox hitboxLeft	Leftside hitbox
# Hitbox hitboxRight	Rightside hitbox
# boolean isJumping, isGoLeft, isCollide, deadLeft, attackPress, attackTrigger;	Check puppy status
# boolean firstDead	Check if puppy dead
# Item item	Item that puppy using

7.4.2. Constructor

+ Puppy(double x, double y, double z, Image dogImage, int dogNum)	Set x to x Set y to y Set z to z Set dogIMG to dogImage Set hp above puppy Update all hitbox

7.4.3. Method

+ void attack()	If attack button was triggered ● Check what's item puppy equipping and use it to attack

+ void takeDamageBy(Obj obj)	Check what's hit puppy ● If hit by ghost Decrease Hp by ghost damage ● If hit by other player heart Heal hp by heart heal
+ void jump()	Set speedY by acceleration
+ void goLeft()	Move puppy to the left check if hit any others Obj
+ void goRight()	Move puppy to the right check if hit any others Obj
+ void onCollideTop()	Puppy can't go any higher
+ void onCollideDown()	Puppy can't go any lower
+ void onCollideSide()	Puppy can't go any further
+ void draw(GraphicsContext gc)	Draw image at hitbox
+ void accelerate(double accelerationX, double accelerationY)	Add speedX by accelerationX and speedY by accelerationY
+ void move()	Move puppy into designate direction
+ void update(boolean goUp, boolean goLeft, boolean goRight, boolean attacking)	Update position and animation
+ void updateAllHitbox(double x, double y)	update hitbox by its position and width and height
+ void checkForUpdate(boolean goUp, boolean goLeft, boolean goRight)	Check if there is any input and collision ● goUp > jump ● goLeft > move left ● goRight > move right
+ boolean isDead()	Return true if hp below 0
+ void setItem(int a)	Set puppy's item
Getters of x, y, hitbox, hitboxHead, hitboxFeet, isCollide	Getter and setter

7.5. Class Puppy1 extends Puppy

7.5.1. Field

- Image DOG_IMAGE_LEFT	Left dog image
- Image DOG_IMAGE_RIGHT	Right dog image

7.5.2. Constructor

+ Puppy1(double x, double y, int z)	Set x to x Set y to y Set dogImage to DOG_IMAGE_LEFT Set dogNum to 1

7.6. Class Puppy2 extends Puppy

7.6.1. Field

- Image DOG_IMAGE_LEFT	Left dog image
- Image DOG_IMAGE_RIGHT	Right dog image

7.6.2. Constructor

+ Puppy2(double x, double y, int z)	Set x to x Set y to y Set dogImage to DOG_IMAGE_RIGHT Set dogNum to 2

8. Package constant

8.1. Class Img

8.1.1. Field

+ double WIDTH_BG, HEIGHT_BG	Store the value of background width, height
+ Image bg	Store the image of background
+ double WIDTH_PUP	Store the value of puppy width
+ Image puppy	Store the image of puppy1
+ Image puppy2	Store the image of puppy2
+ Image pup1L	Store the image of puppy1 left
+ Image pup1R	Store the image of puppy1 right

+ Image pup2L	Store the image of puppy2 left
+ Image pup2R	Store the image of puppy2 right
+ Image pupDeadL	Store the image of puppy dead left
+ Image pupDeadR	Store the image of puppy dead right
+ double WIDTH_GHOST, HEIGHT_GHOST	Store the value of ghost width, height
+ Image ghost	Store the image of ghost
+ Image ghostL	Store the image of ghost left
+ Image ghostR	Store the image of ghost right
+ double WIDTH_GIFT, HEIGHT_GIFT	Store the value of gift width, height
+ Image gift	Store the image of gift
+ double WIDTH_HEART, HEIGHT_HEART	Store the value of heart width, height
+ Image heart	Store the image of heart
+ double WIDTH_BONE	Store the value of bone width
+ Image greenBone	Store the image of green bone
+ Image brownBone	Store the image of brown bone
+ double WIDTH_BALL, HEIGHT_BALL	Store the value of ball width, height
+ Image blueBall	Store the image of blue ball
+ Image orangeBall	Store the image of orange ball

8.1.2. Constructor

+ Img()	constructor

8.2. Class Sound Eff

8.2.1. Field

+ final AudioClip SOUND_GAME	game sound effect

9. Package screens

9.1. Class GameOverScreen

9.1.1. Field

- Canvas cv	Canvas variable
- Timeline timeline	Timeline variable

9.1.2. Constructor

+ GameOverScreen()	constructor

9.1.3. Method

- StackPane getStackPane	Return root

9.2. Class MainMenuScreen

9.2.1. Field

- Canvas cv	Canvas variable

9.2.2. Constructor

+ MainMenuScreen	Constructor

9.2.3. Method

- StackPane getStackPane	Return root