Into Dungeon Documentation

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Introduction

Into dungeon is a puzzle game inspired by Knight move moves. You will be a brave who gets trapped in a dungeon and you will have to overcome various obstacles to teleport out of this dungeon.

Main menu

(Figure 1: Main menu)

Main Menu is the first page of the game. This page contains three buttons that are "Start", "Options" and "Quit" buttons. "Start" button will lead you to the next screen. "Options" button will lead you to the sound setting. To Quit the game, click "Quit" button.
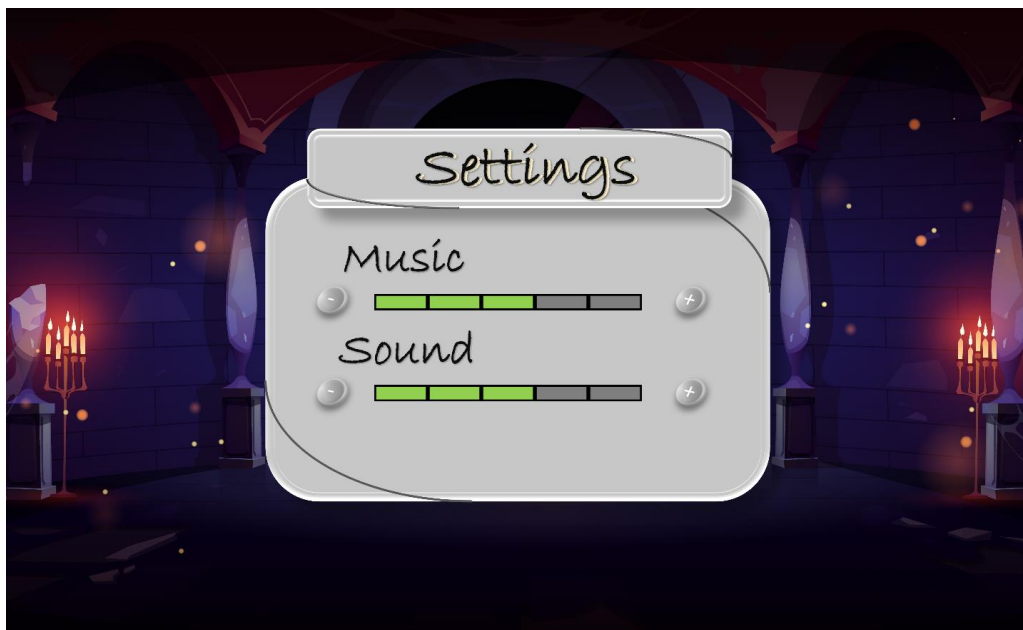
(Figure 2: Sound setting)

On this page you can adjust the volume by pressing plus or minus button.

(Figure 3: Controller)

After clicking the "Start" button, you will learn the buttons used to control the characters in the game and can click next or back.

(Figure 3: Maps)

After clicking the "Next" button, you will access the maps page and can choose to play only the levels that you have already reached.

Gameplay

Control the movement with "w" "a" "s" "d" keys. Press "R" to reset and press "esc" to return to the menu.

Player

 You control the movement of this character.

 Every move you loses 1 hp. If your hp goes to 0 without reaching the teleport you will die.

Objects

- **Box**: When you move in the direction of the box in front of you, You won't move but lose 1 hp to destroy the box.

- **Stone:** When you move in the direction of the rock in front of you. You won't move but lose 1 hp pushing the stone 1 space.

- **Potions:** When you move into the same space as your potion, your hp will increase?

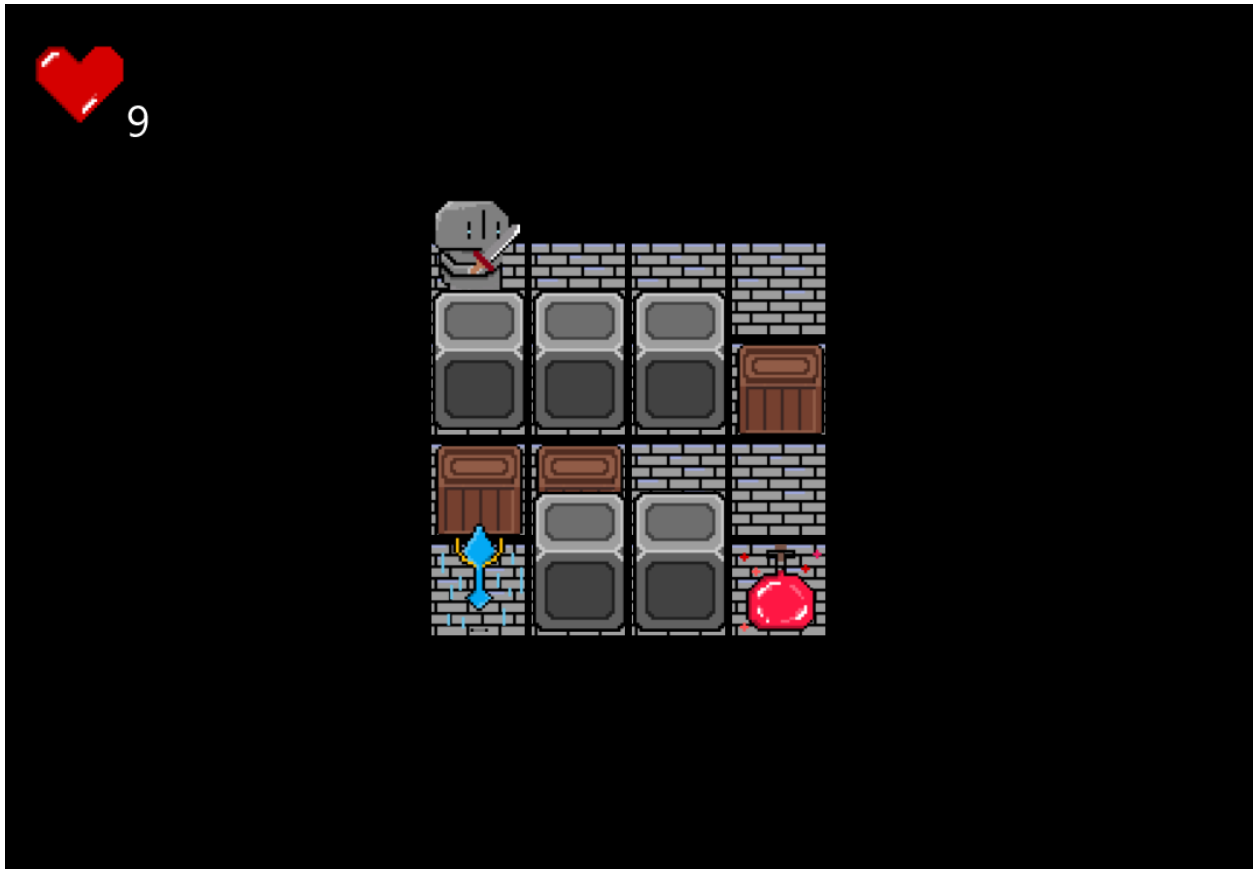- **Teleport:** Reach the teleport to go to the next level.

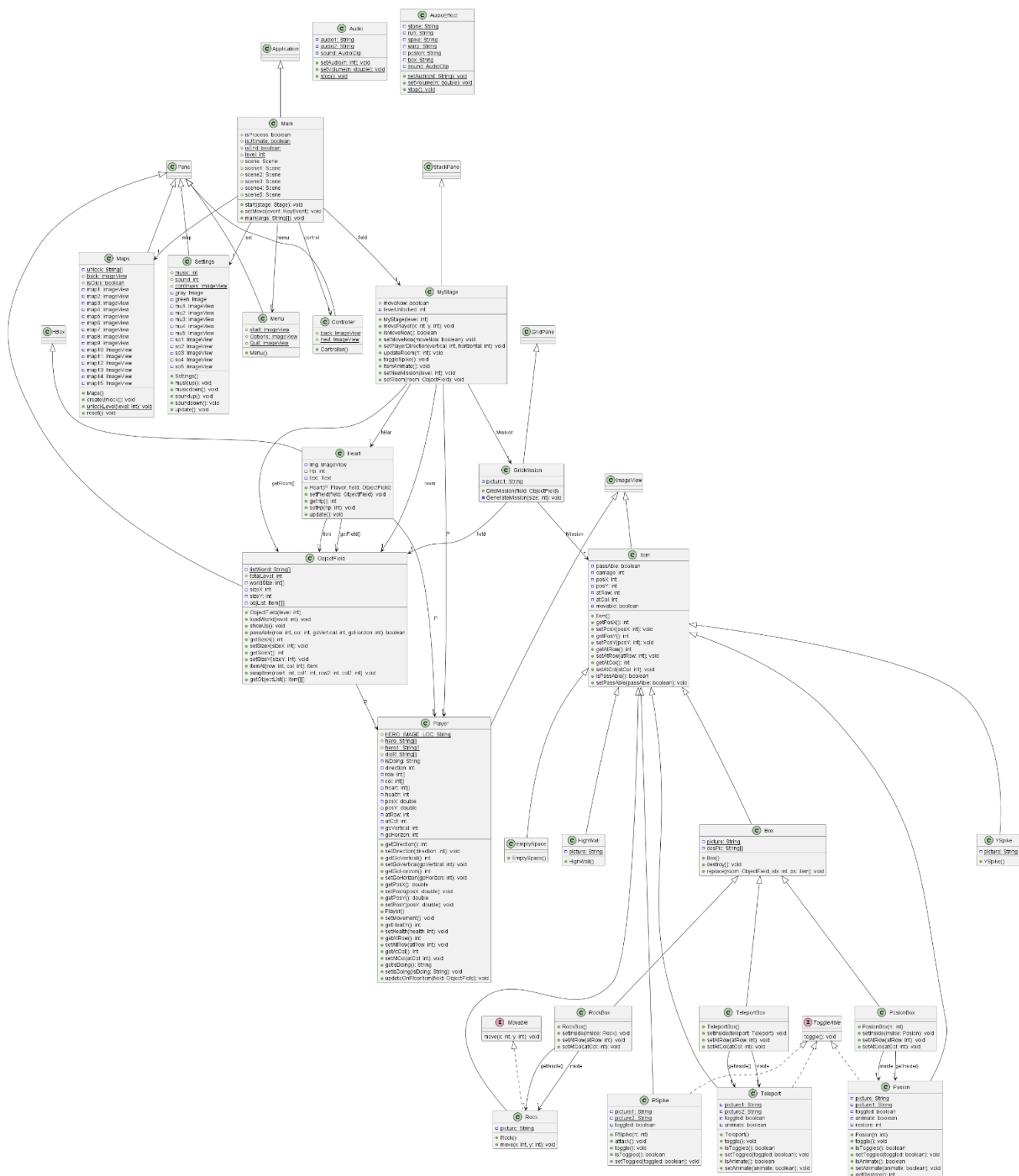- **Permanent spike:** When you move into the same slot as this you will lose 1 hp.

- **Alternate spike:** When you're on the same space as this thing when the spike grows, you'll lose 1 hp.

Game Screen

You must try to get your character to teleport before your HP runs out. If you die, you just start again and keep trying. So easy.

Class Diagram

Audio
- audio1: String
- audio2: String
- sound: AudioClip
- setAudio(n: int): void
- setVolume(n: double): void
- stop(): void

AudioEffect
- stone: String
- run: String
- spike: String
- ears: String
- poison: String
- box: String
- sound: AudioClip
- setAudio(n: String): void
- setVolume(n: double): void
- stop(): void

Application

Pane

StackPane

Main
- isProcess: boolean
- isUltimate: boolean
- isEnd: boolean
- level: int
- scene: Scene
- scene1: Scene
- scene2: Scene
- scene3: Scene
- scene4: Scene
- scene5: Scene
- start(stage: Stage): void
- setMove(event: KeyEvent): void
- main(args: String[]): void

Maps
- unlock: String[]
- back: ImageView
- isClick: boolean
- map1: ImageView
- map2: ImageView
- map3: ImageView
- map4: ImageView
- map5: ImageView
- map6: ImageView
- map7: ImageView
- map8: ImageView
- map9: ImageView
- map10: ImageView
- map11: ImageView
- map12: ImageView
- map13: ImageView
- map14: ImageView
- map15: ImageView
- Maps()
- createUnlock(): void
- unlockLevel(level: int): void
- reset(): void

Settings
- music: int
- sound: int
- continue: ImageView
- gray: Image
- green: Image
- mu1: ImageView
- mu2: ImageView
- mu3: ImageView
- mu4: ImageView
- mu5: ImageView
- so1: ImageView
- so2: ImageView
- so3: ImageView
- so4: ImageView
- so5: ImageView
- Settings()
- musicup(): void
- musicdown(): void
- soundup(): void
- sounddown(): void
- update(): void

Menu
- start: ImageView
- options: ImageView
- quit: ImageView
- Menu()

Controller
- back: ImageView
- next: ImageView
- Controller()

HBox

MyStage
- moveNow: boolean
- levelUnlocked: int
- MyStage(level: int)
- movePlayer(x: int, y: int): void
- isMoveNow(): boolean
- setMoveNow(moveNow: boolean): void
- setPlayerDirection(vertical: int, horizontal: int): void
- updateRoom(n: int): void
- toggleSpike(): void
- itemAnimate(): void
- setNewMission(level: int): void
- setRoom(room: ObjectField): void

GridPane

Heart
- img: ImageView
- hp: int
- text: Text
- Heart(P: Player, field: ObjectField)
- setField(field: ObjectField): void
- getHp(): int
- setHp(hp: int): void
- update(): void

GridMission
- picture: String
- GridMission(field: ObjectField)
- GenerateMission(size: int): void

ImageView

ObjectField
- listWorld: String[]
- totalLevel: int
- worldSize: int[]
- sizeX: int
- sizeY: int
- objList: Item[][]
- ObjectField(level: int)
- loadWorld(level: int): void
- showUp(): void
- passAble(row: int, col: int, goVertical: int, goHorizon: int): boolean
- getSizeX(): int
- setSizeX(sizeX: int): void
- getSizeY(): int
- setSizeY(sizeY: int): void
- itemAt(row: int, col: int): Item
- swapItem(row1: int, col1: int, row2: int, col2: int): void
- getObjectList(): Item[][]

Item
- passAble: boolean
- damage: int
- posX: int
- posY: int
- atRow: int
- atCol: int
- movable: boolean
- Item()
- getPosX(): int
- setPosX(posX: int): void
- getPosY(): int
- setPosY(posY: int): void
- getAtRow(): int
- setAtRow(atRow: int): void
- getAtCol(): int
- setAtCol(atCol: int): void
- isPassAble(): boolean
- setPassAble(passAble: boolean): void

Player
- HERO_IMAGE_LOC: String
- hero: String[]
- hero1: String[]
- doP: String[]
- isDoing: String
- direction: int
- row: int[]
- col: int[]
- hcar: int[]
- hcath: int
- posX: double
- posY: double
- atRow: int
- atCol: int
- goVertical: int
- goHorizon: int
- getDirection(): int
- setDirection(direction: int): void
- getGoVertical(): int
- setGoVertical(goVertical: int): void
- getGoHorizon(): int
- setGoHorizon(goHorizon: int): void
- getPosX(): double
- setPosX(posX: double): void
- getPosY(): double
- setPosY(posY: double): void
- Player()
- setMovement(): void
- getHealth(): int
- setHealth(health: int): void
- getAtRow(): int
- setAtRow(atRow: int): void
- getAtCol(): int
- setAtCol(atCol: int): void
- getIsDoing(): String
- setIsDoing(isDoing: String): void
- updateOnFloor(tar(field: ObjectField): void

EmptySpace
- EmptySpace()

HighWall
- picture: String
- HighWall()

Box
- picture: String
- destroy(): void
- replace(room: ObjectField, idx: int, ps: Item): void

YSpike
- picture: String
- YSpike()

Movable
- move(x: int, y: int): void

RockBox
- RockBox()
- setInside(inside: Rock): void
- setAtRow(atRow: int): void
- setAtCol(atCol: int): void

TeleportBox
- TeleportBox()
- setInside(teleport: Teleport): void
- setAtRow(atRow: int): void
- setAtCol(atCol: int): void

ToggleAble
- toggle(): void

PoisonBox
- PoisonBox()
- setInside(inside: Poison): void
- setAtRow(atRow: int): void
- setAtCol(atCol: int): void

Rock
- picture: String
- Rock()
- move(x: int, y: int): void

RSpike
- picture1: String
- picture2: String
- toggled: boolean
- RSpike(n: int)
- attack(): void
- toggle(): void
- isToggled(): boolean
- setToggled(toggled: boolean): void

Teleport
- picture1: String
- picture2: String
- toggled: boolean
- animate: boolean
- Teleport()
- toggle(): void
- isToggled(): boolean
- setToggled(toggled: boolean): void
- isAnimate(): boolean
- setAnimate(animate: boolean): void

Poison
- picture1: String
- picture2: String
- toggled: boolean
- animate: boolean
- restore: int
- Poison(n: int)
- toggle(): void
- isToggled(): boolean
- setToggled(toggled: boolean): void
- isAnimate(): boolean
- setAnimate(animate: boolean): void
- getRestore(): int

Class Details

1.Package application

1.1 Class Main extends Application

This class is used to setup every scene in this game.

1.1.1 field

Name	Description
+ Boolean isProcess	Is used to check if this game is on process W A S D.
+ static Boolean isUltimate	Is used to check if player is dead.
+ static Boolean isEnd	Is used to check if player can beat in any mission.
+ static int level	Is used to record what Mission player is playing.
+ MyStage field	To run process on Mission
+ Menu menu	This is the menu page.
+ Settings set	This is the setting page;
+ Controller control	This is the screen that describe how to play this game.
+ Maps map	This is the screen for player to select mission.
+ Scene scene	Set field.
+ Scene scene1	Set menu.
+ Scene scene2	Set settings
+ Scene scene3	Set control.
+ Scene scene4	Set map.
+ Scene scene5	Set end game video.

1.1.2 methods

Name	Description
+ void start(Stage stage) throws Exception	-Initialize field -Set scene Key W A S D to move player

	And R to restart mission while player is not dead. Esc to go back to title screen And when mission is end after move player Set new mission on next level. -Set close request to close project -Set click menu start to load scene3 -set click menu Option to load scene 2 -set click on menu Quit to colse the game -set click settings continues to load scene1 -set click controller next to load scene -set click controller back to load scene1 -set click maps back to load scene3 -when the game is end on last mission. Set to load end game video for 13 second then go back to scene1. -when player is dead .play dead music and reset mission after 8 seconds, -set audio to audio 1 -show Stage
+ static void main(String[] args)	launch(args)
+ void setMove(KeyEvent event)	Set move when pressed W A S D to the correct direction this method will not going to do any thing if character is in moving process. Call method field .setMoveNow(true); To tell that player is in moving process. Call method filed.setPlayerdirection() to tell setMoveplayer which direction player will go then Call method field.setMovePlayer() to moveplayer

2. Package Character

2.1 Class Player extends ImageView

This class is to set player process

2.1.1 Field

Name	Description
- static final String[] hero	Contain character all moving character preset on left.
-static final String[] hero1	Contain character all moving character preset on right.
-static final String[] dieR	Contain character all moving character preset on dead.
- String isDoing	To tell what is Character doing.
- int direction	Go left or go right.
- final int[] row	Contain start row on each Mission.
- final int[] col	Contain start col on each Mission.
- final int[] heart	Contain health on each Mission.
- int health	Health remain.
- int posX	Position pixel.
-int posY	Position pixel.
- int atRow	Position row.
- int atCol	Position column.
- int goVertical	Player direction vertical.
- int goHorizon	Player direction horizontal.

2.1.2 Constructor

Name	Description

+Player()	-set image to "file:res/Hero1Right.png"
	- setAtRow(row[Main.level]);
	setAtCol(col[Main.level]);
	setPosX(getAtCol()*69);
	setPosY(getAtRow()*69-32);
	setX(getPosX());

| | setY(getPosY());
-set movment on new Thread.
- setGoHorizon(0);
setGoVertical(0);
setIsDoing("normal");
setDirection(1);
setHealth(heart[Main.level]); |

2.1.3 Methods

Name	Description
+ void setMovement()	This method work forever until player die. This method is about to set player movement sequence image . If direction =1 use preset hero1. If direction =-1 use preset hero. Move sequence depends on isDoing That will perform different action You can see more detail in code.
+ void updateOnFloorItem(ObjectField field)	This method check if player stands on spike . -set health-2 if on YSpike. -set health-2 if on toggled RSpike -set health-1 if on empty space. If on teleport set Main.isEnd to true Then if health remain 0 setIsDoing("die"); You can see more detail in code
other getter/setter	

3. Package Control

3.1 Class Audio

This is used to setup background music

3.1.1 Field

Name	Description
- static final String audio1	Set to "file:res/SoundChill.mp3"
- static final String audio2	Set to "file:res/DarkSoul.mp3"
- static AudioClip sound	Set to new AudioClip(audio1)

3.1.2 Method

Name	Description
+ static void setAudio(int n)	Stop sound Case n=1 set audioclip to audio1 Case m=2 set audioclip to audio2 Set volume according to Settings.music
+ static void setVolume(double n)	Set sound volume to n
+ static void stop()	Stop sound

3.2 Class Audio

This is used to setup entity sound

3.2.1 Field

Name	Description
- static final String stone	Set to "file:res/stone2.wav"
- static final String run	Set to "file:res/run.wav"
- static final String spike	Set to "file:res/spike.wav"
- static final String warp	Set to "file:res/warp.wav"
- static final String posion	Set to "file:res/posion.wav"
- static final String box	Set to "file:res/box.wav"
- static AudioClip sound	Set to new AudioClip(run)

3.2.2 Method

Name	Description
+ static void setAudio(String st)	Stop sound case "run" set audioclip to run case "stone" set audioclip to run case "spike" set audioclip to spike case "warp" set audioclip to warp case "posion" set audioclip to posion case "box" set audioclip to nox Set volume according to Settings.sound
+ static void setVolume(double n)	Set sound volume to n
+ static void stop()	Stop sound

4. Package Entity

4.1 Class Item extends ImageView

4.1.1 Field

Name	Description
- int posX	Position pixel
- int posY	Position pixel
- int atRow	Position row
- int atCol	Position column

4.1.2 Constructor

Name	Description
+Item()	

4.1.3 Method

Name	Description
Other getter/setter	

4.2 Class Box extends Item

This is used to setup Box entity.

4.2.1 Field

Name	Description
- static final String picture	Set to "file:res/box.png"
- static final String[] desPic	Box destroy sequence image you can see in code.

4.2.2 Constructor

Name	Description
+ Player()	-set image to picture

4.2.3 Method

Name	Description
+ void destroy()	Destroy image using desPic youcan see more detail in code
+ void replace(ObjectField room,int idx,Item ps)	This method use to replace item in a room if there is item in a box You can see more detail in code.

4.3 Class EmptySpace extends Item

This is used to setup empty space

4.3.1 Constructor

Name	Description
+EmptySpace()	-set image to null

4.4 Class HighWall extends Item

This is used to setup High wall

4.4.1 Field

Name	Description
- static final String picture	Set to "file:res/highWall.png"

4.4.2 Constructor

Name	Description
+HighWall()	-set image to picture

4.5 Class YSpike extends Item

This is used to setup YSpike

4.5.1 Field

Name	Description
- static final String picture	Set to "file:res/YSpike.png"

4.5.2 Constructor

Name	Description
+YSpike()	-set image to picture

4.6 Class RSpike extends Item implements ToggleAble

This is used to setup RSpike

4.6.1 Field

Name	Description
- static final String picture1	Set to "file:res/RSpike1.png"
- static final String picture2	Set to "file:res/RSpike2.png"
- boolean isToggled	Is Spike toggled

4.6.2 Constructor

Name	Description
+RSpike(int n)	Case 1 -set image to picture2 Set isToggled to false Case 2 -set image to picture1 Set isToggled to true

4.6.3 Method

Name	Description
+void toggle()	-if Toggled set image to picture2 Set isToggled to false. -Else set image to picture1 Set isToggled to true.
Other getter/setter	

4.7 Class Posion extends Item implements ToggleAble

This is used to setup Posion

4.7.1 Field

Name	Description
- static final String picture	Set to "file:res/Posion.png"
- static final String picture1	Set to "file:res/Posion2.png"
- boolean isToggled	Is Spike toggled
- boolean isAnimate	Is Posion animate

4.7.2 Constructor

Name	Description
+Posion(int n)	Set restore to n Set image to picture Set isAnimate to true

4.7.3 Method

Name	Description
+void toggle()	-if isAnimate=false donothing -if Toggled set image to picture Set isToggled to false. -Else set image to picture1 Set isToggled to true.
Other getter/setter	

4.8 Class PosionBox extends Box

This is used to setup PosionBox.

4.8.1 Field

Name	Description
- Posion inside	Posion in box

4.8.2 Constructor

Name	Description
+PosionBox(int n)	Set inside to Posion(n)

4.8.3 Method

Name	Description
+ void setAtRow(int atRow)	Set PosionBox at row to atRow Set inside atRow Set insideY to 69*inside.getAtRow()+4 Set insidePosY to 69*inside.getAtRow()+4
+ void setAtCol(int atCol)	Set PosionBox at col to atCol Set inside atCol Set insideY to 69*inside.getAtCol()+4 Set insidePosY to 69*inside.getAtCol()+4
Other getter/setter	

4.9 Class Rock extends Item implements Movable

This is used to setup Rock .

4.9.1 Field

Name	Description
- static final String picture	Set to "file:res/stone.png"

4.9.2 Constructor

Name	Description
+Rock()	Set image to picture.

4.9.3 Method

Name	Description
+void void move(int x,int y)	AudioEffect.setAudio("stone") Implement move animation Move X stone 69*x pixels Move Y stone 69*y pixels You can see more detail in code
Other getter/setter	

4.10 Class RockBox extends Box

This is used to setup RockBox.

4.10.1 Field

Name	Description
- Rock inside	Rock in box

4.10.2 Constructor

Name	Description
+RockBox()	Set inside to Rock()

4.10.3 Method

Name	Description
+ void setAtRow(int atRow)	Set RockBox at row to atRow Set inside atRow Set insideY to 69*inside.getAtRow()+4 Set insidePosY to 69*inside.getAtRow()+4
+ void setAtCol(int atCol)	Set RockBox at col to atCol Set inside atCol Set insideY to 69*inside.getAtCol()+4 Set insidePosY to 69*inside.getAtCol()+4
Other getter/setter	

4.11 Class Teleport extends Item implements ToggleAble

This is used to setup Teleport.

4.11.1 Field

Name	Description
- static final String picture1	Set to "file:res/Tp1.png"
- static final String picture2	Set to "file:res/Tp1.png"
- boolean isToggled	Is Telelport Toggled
- boolean isAnimate	Id Teleport Animated

4.11.2 Constructor

Name	Description
+Teleport()	Set image to picture1 Set is Animate to true

4.11.3 Method

Name	Description
+void toggle()	-if isAnimate=false donothing

	-if Toggled set image to picture1
	Set isToggled to false.
	-Else set image to picture2
	Set isToggled to true.
Other getter/setter	

4.12 Class TeleportBox extends Box

This is used to setup Teleport Box

4.12.1 Field

Name	Description
- Teleport inside	Teleport in box

4.12.2 Constructor

Name	Description
+ Teleport Box()	Set inside to Teleport()

4.12.3 Method

Name	Description
+ void setAtRow(int atRow)	Set **Teleport** Box at row to atRow
	Set inside atRow
	Set insideY to 69*inside.getAtRow()+4
	Set insidePosY to
	69*inside.getAtRow()+4
+ void setAtCol(int atCol)	Set **Teleport**Box at col to atCol
	Set inside atCol
	Set insideY to 69*inside.getAtCol()+4
	Set insidePosY to
	69*inside.getAtCol()+4
Other getter/setter	

4.13 Interface Movable

4.13.1 Method

Name	Description
+ void move(int x,int y)	Move object from present x,y

4.14 Interface ToggleAble

4.14.1 Method

Name	Description
+ void toggle()	Change Item image depends on sequence images.

5. Package Field

5.1 Class Controller extends Pane

This class is the scene to show about controller.

5.1.1 Field

Name	Description
+ static ImageView back	Contains "Back" button and use to setOnMouse in Main
+ static ImageView next	Contains "Next" button and Use to setOnMouse in Main

5.1.2 Constructor

Name	Description
+ Controller()	- Sets Background image. - Sets Controller window. - Sets "Next" and "Back" buttons.

5.2 Class GridMission extends GridPane

This class is the pane that used to generate maps according to the size of each stage.

5.2.1 Field

Name	Description
- static final String picture1	Set as the location of the floor image.
- ObjectField field	The obstacle of this stage.

5.2.2 Constructor

Name	Description
+ GridMission(ObjectField field)	- Initialize field. - generate Mission according to the field size. - set Padding to 5. - set Hgap and Vgap to 5. - set height and width to 690.

5.2.3 Method

Name	Description
- void generateMission(int size)	- Initialize Vbox with picture1 image, set size as 64*64 and amount accord to size. - Add them to this GridPane.

5.3 Class Heart extends Hbox

This class is Hbox to show your remaining Hp.

5.3.1 Field

Name	Description
- ImageView img	Contains heart image.
- Player P	Contains Player character.
- Text text	Displays the remaining hp as text.

5.3.2 Constructor

Name	Description
+ Heart(Player P,ObjectField field)	- Initialize Player P as P. - Set alignment as topleft. - Set imp as Heart image. - Set text alignment as center color white fontsize 30. - Add text and imp to this Hbox.

5.3.3 Method

Name	Description
- void update()	Set text as Player current hp.

5.4 Class Maps extends Pane

This class is Pane to show Maps scene.

5.4.1 Field

Name	Description
- unlock	Contains stage that unlock.
+ static ImageView back	Contains "Back" button and use to setOnMouse in Main.
+ static boolean isClick	Set default as false.
- ImageView map1	Contain the map image in box 1.
- ImageView map2	Contain the map image in box 2.
- ImageView map3	Contain the map image in box 3.
- ImageView map4	Contain the map image in box 4.
- ImageView map5	Contain the map image in box 5.
- ImageView map6	Contain the map image in box 6.
- ImageView map7	Contain the map image in box 7.
- ImageView map8	Contain the map image in box 8.
- ImageView map9	Contain the map image in box 9.
- ImageView map10	Contain the map image in box 10.

- ImageView map11	Contain the map image in box 11.
- ImageView map12	Contain the map image in box 12.
- ImageView map13	Contain the map image in box 13.
- ImageView map14	Contain the map image in box 14.
- ImageView map15	Contain the map image in box 15.

5.4.2 Constructor

Name	Description
+ Maps()	- Set background image. - Set Maps window. - Set position map1 – 15 button. - Set Event map1 – 15.

5.4.3 Method

Name	Description
+ void createUnlock()	Read textfile to initialize unlock.
+ static void unlockLevel(int level)	Use to write textfile unlocked levels.
+ void reset()	Displays images of each map button according to unlock.

5.5 Class Menu extends Pane

This class is Pane to show Menu scene.

5.5.1 Field

Name	Description
+ static ImageView start	Contains "Start" image use to setOnMouse in Main
+ static ImageView Options	Contains "Option" image use to setOnMouse in Main
+ static ImageView Quit	Contains "Quit" image use to setOnMouse in Main

5.5.2 Constructor

Name	Description
+ Menu()	- Set background image. - Set Menu window. - Set position "Start", "Options" and "Quit" button.

5.6 Class MyStage extends StackPane

This class is StackPane to show you overall of game stage.

5.6.1 Field

Name	Description
+ boolean isMovenow;	Contains is player character move now.
- GridMission mission	Contains GridMission of this stage.
- Player p	Contains Player character.
- int levelUnlocked	Level of this stage.
- ObjectField room	The obstacle of this stage.
- Heart hBar	Heart with cerrent hp.

5.6.2 Constructor

Name	Description
MyStage(int level)	- Set background color. - Initialize room with level. - Initialize mission with room - Initialize Player p. - Initialize hBar with p. - Add p to room - Add mission , room and hBar t o this StackPane - setMovenow as false - create new thread to respond command

5.6.3 Method

Name	Description
+ void movePlayer(int x,int y)	Calculate position that move player to the right x colum to the top y row. - If the player's position after move is not in the mission, nothing will happen. - else if in front of player has entity respond to it according to its type and update item in map. - Otherwise move player to that position. Update hBar and setMovenow to false.
+ boolean isMoveNow()	isMovenow getter
+ void setMoveNow(boolean moveNow)	IsMovenow setter
+ void setPlayerDirection(int vertical,int horizontal)	SetGoVertical of p with vertical and setGoHorizon of p with horizontal.
+ void updateRoom(int n)	Move player to current position.
+ ObjectField getRoom()	room getter
+ void toggleSpike()	Toggle every RSpike in room.
+ void ItemAnimate()	Swap the image of the item to make it animation.
+ void setNewMission(int level)	Set this StackPane as newmission according to level.
+ void setRoom(ObjectField room)	room setter

5.7 Class ObjectField extends Pane

This class is Pane use to setup ObjectField.

5.7.1 Field

Name	Description
- static final String[] listWorld	Contains list of all missions.
- final int[] worldSize= {4,4,4,5,5,5,5,5,5,6,6,7,8,6,8}	Contains list of all mission's size.
- int sizeX;	This mission total column.

- int sizeY;	This mission total row.
- Item[][] objList	Contains list of item in each row and column.

5.7.2 Constructor

Name	Description
+ ObjectField(int level)	- Set sizeX and Y according to level - loadWorld as level. - showup object.

5.7.3 Method

Name	Description
+ void loadWorld(int level)	Read textfile to initialize object in each row and column.
+ void showUp()	Use to add objects of this mission to field sort by priority.
+ boolean passAble(int row,int col,int goVertical,int goHorizon)	Use to check that if player can move to row and col without obstruction return true, Otherwise return false.
+ Item itemAt(int row,int col)	Return the item in this row and column.
+ swapItem(int row1,int col1,int row2,int col2)	Swap item between row1,col1 and row2,col2.
othergetter/setter	

5.8 Class Settings extends Pane

This class is Pane to show Settings scene.

5.8.1 Field

Name	Description
+ static int music	Contains volume of music.
+ static int sound	Contains volume of sound.

+ static ImageView continues	Contains continues button to back to Menu.
- Image gray	Contains gray image.
- Image green	Contains green image.
- ImageView mu1	Contains volume music 1.
- ImageView mu2	Contains volume music 2.
- ImageView mu3	Contains volume music 3.
- ImageView mu4	Contains volume music 4.
- ImageView mu5	Contains volume music 5.
- ImageView so1	Contains volume sound 1.
- ImageView so2	Contains volume sound 2.
- ImageView so3	Contains volume sound 3.
- ImageView so4	Contains volume sound 4.
- ImageView so5	Contains volume sound 5.

5.8.2 Constructor

Name	Description
+ Settings()	- Set backgound image. - Set Setting window. - Initialize musicplus / minus and soundplus / minus button. - setOnMouseReleased by use musicup /down and soundup /down. - update UI.

5.8.3 Method

Name	Description
+ void musicup()	If music+1 not more than 5 set music+=1, otherwise do nothing.
+ void musicdown()	If music-1 not less than 0 set music-=1, otherwise do nothing.
+ void sounndup()	If sound+1 not more than 5 set sound+=1, otherwise do nothing.

+ void sounddown()	If sound-1 not less than 0 set sound-=1, otherwise do nothing.
+ void update()	Change image of mu1 – mu5 and so1 – so5 by music and sound.