

# QUTE BOY Documentation

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# DinoQute

## Introduction

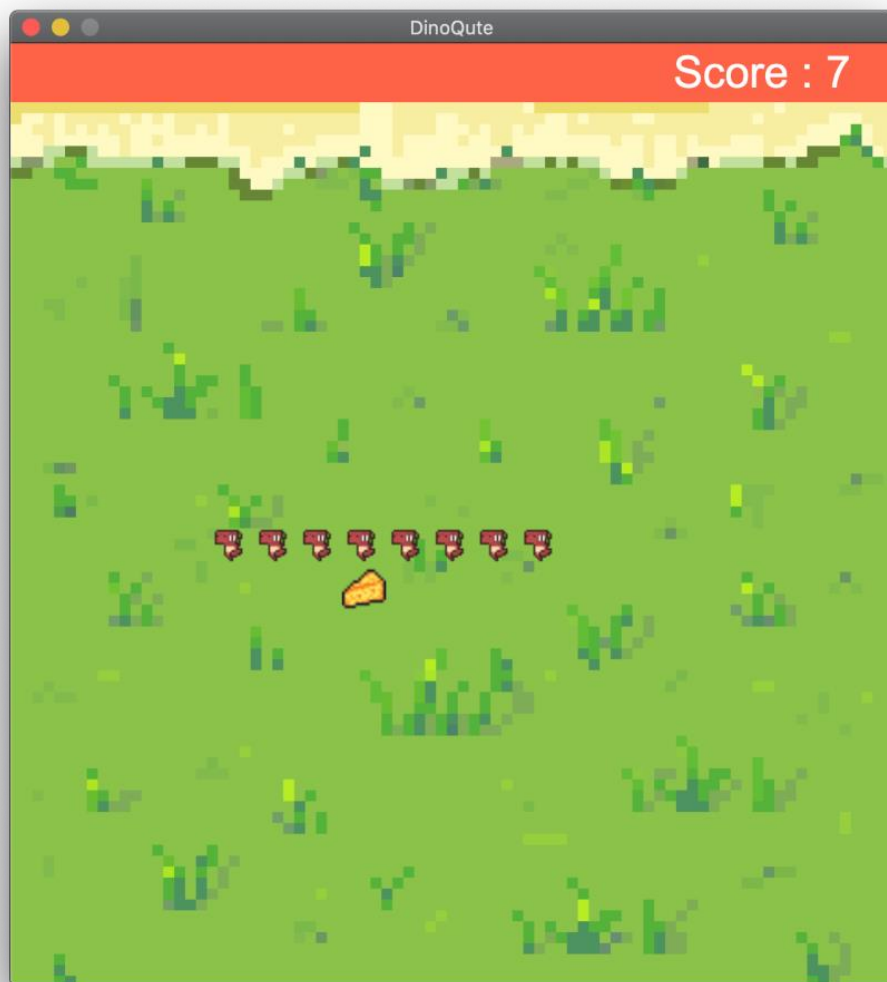
DinoQute is inspired from snake-game. Upgrade graphic to have more cuteness and add more game modes.

## Rules

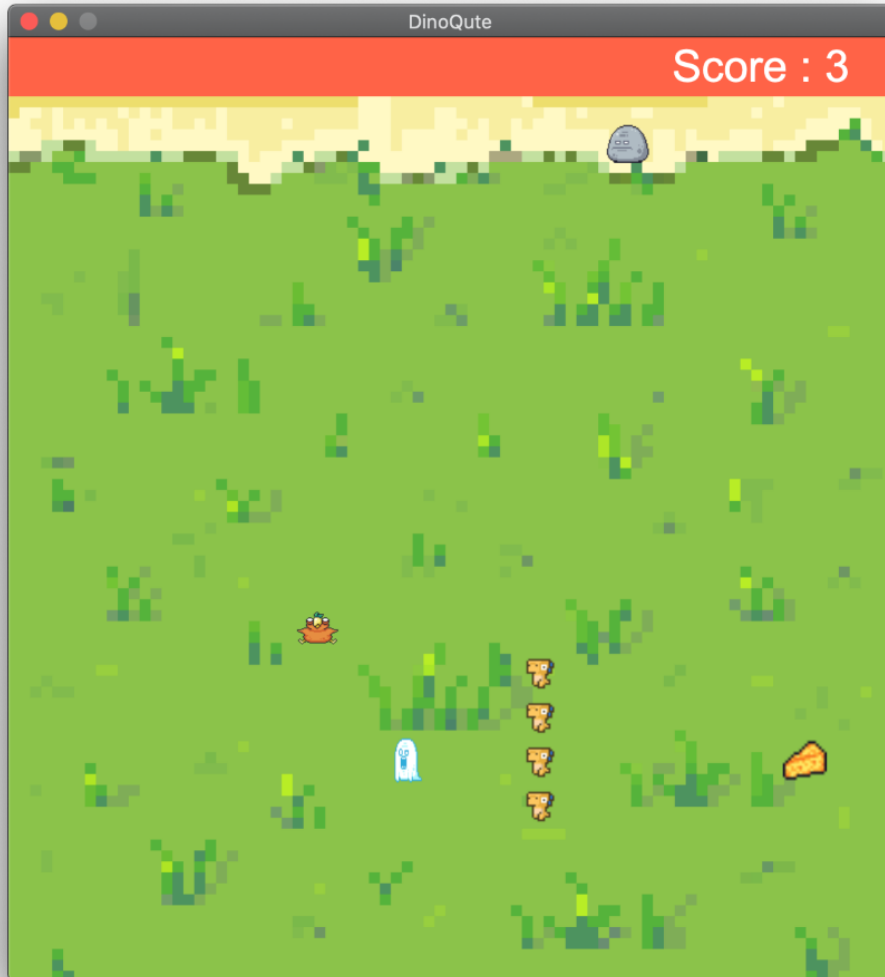
Don't hit your friends, obstacles or border screen

## Example

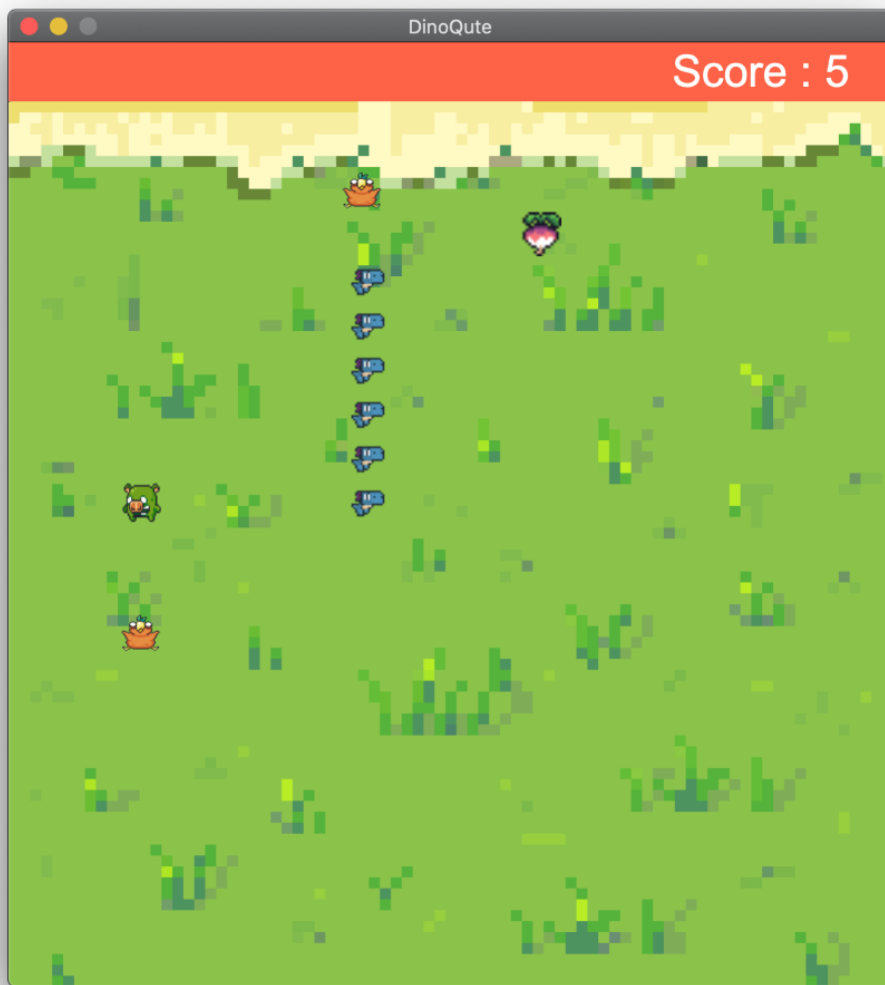
When you choose "Classic" Mode, your game is very peaceful. It does not have obstacle. Pick a food and increment your friends. That you just do is don't hit your friends.



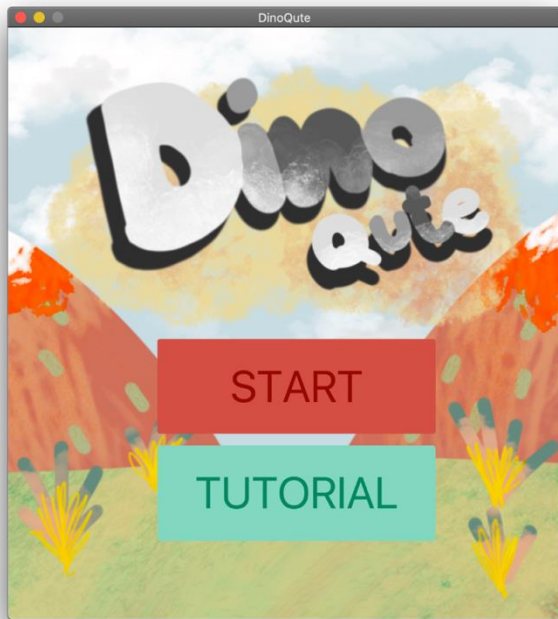
When you choose “Hard” Mode, your game is more dangerous. It will be spawning obstacle. Beware of hitting your friends and obstacles.



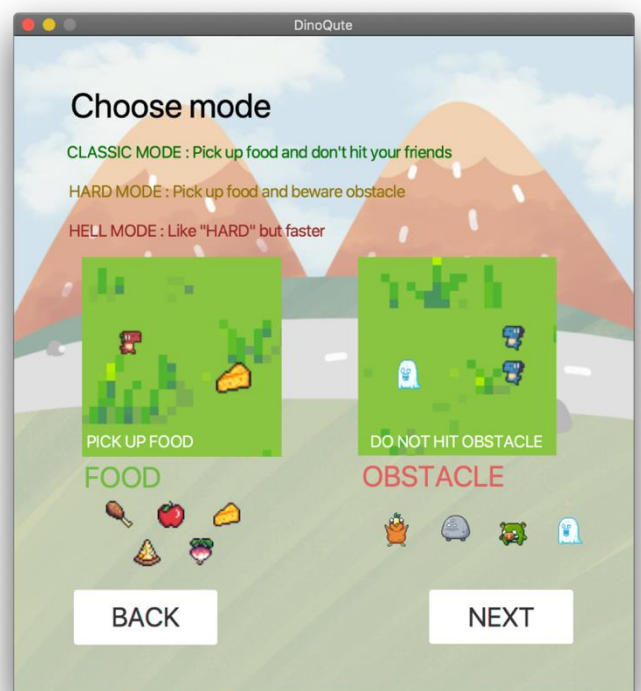
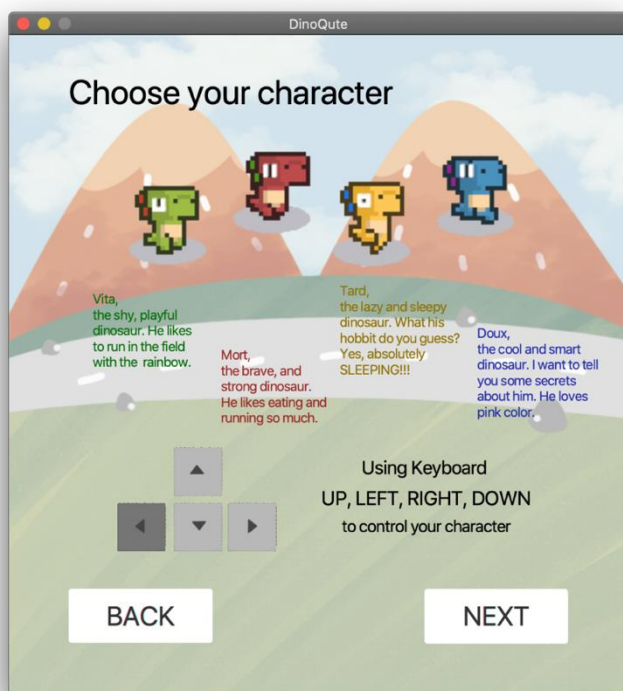
When you choose “Hell” Mode, your dinosaur will run so fast like ninja.  
And the game also spawn obstacle to interrupt you from making a friend.



## HomePage



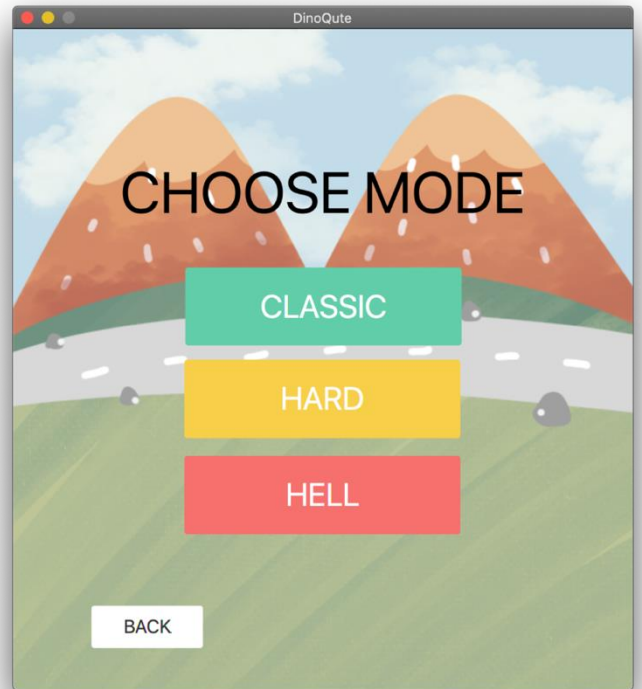
## Tutorial



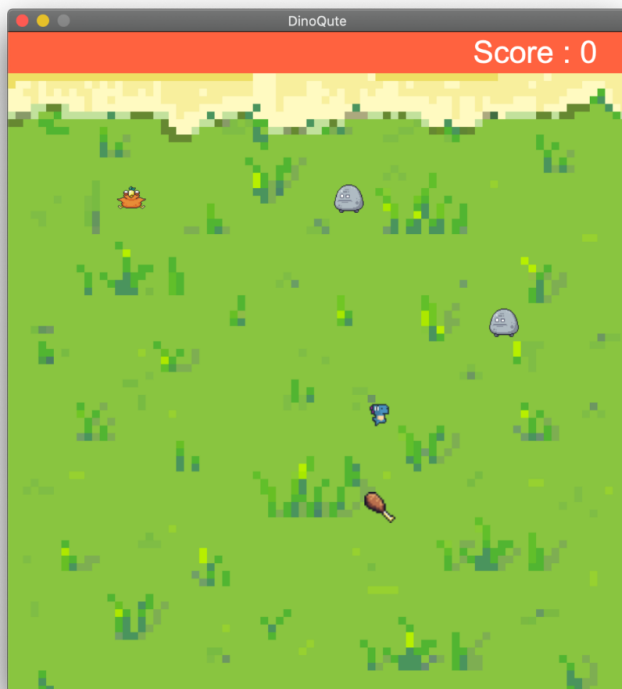
Choose Character Screen



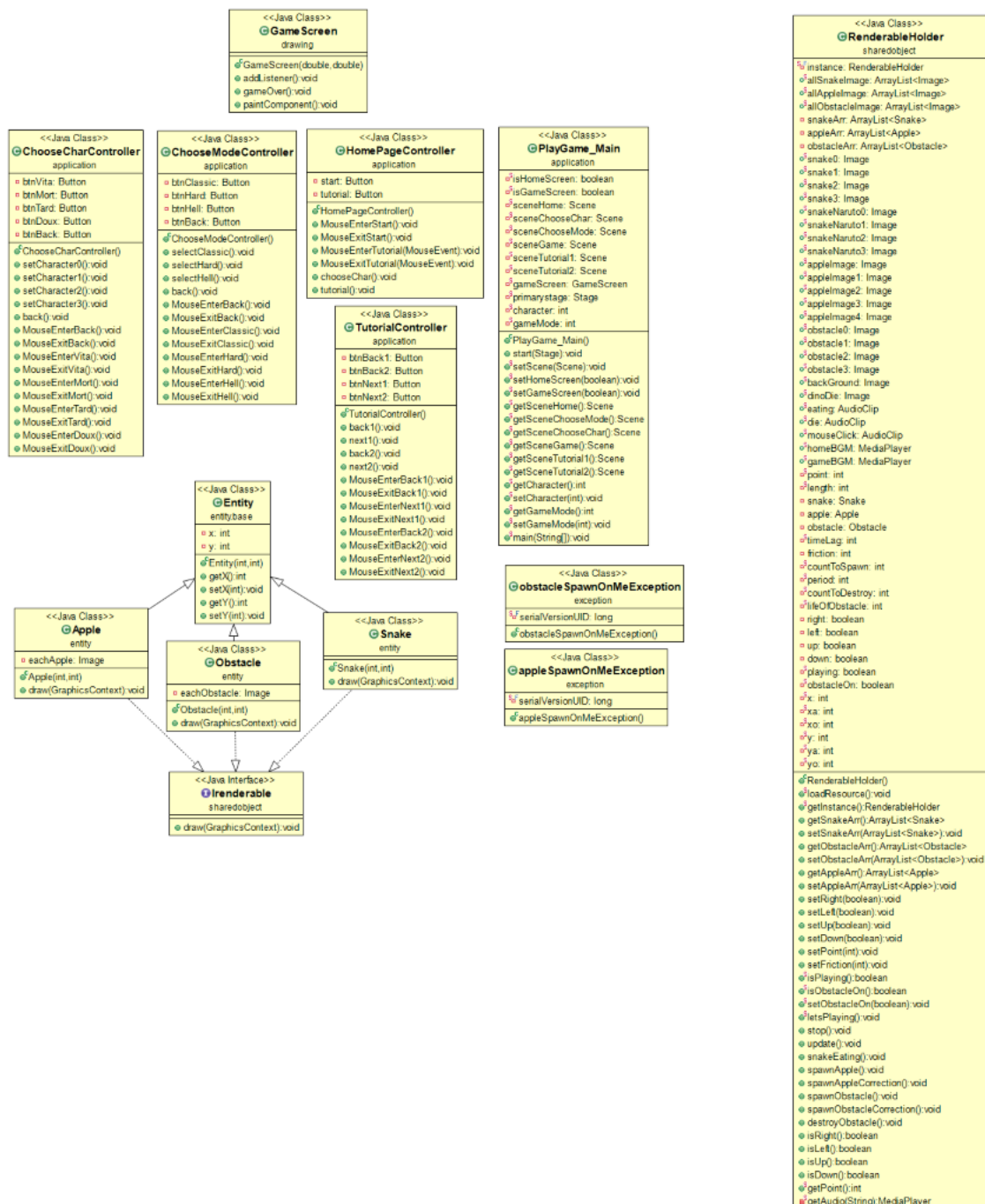
Choose Mode Screen



Game Screen



# Class diagram



\* Noted that Access Modifier Notations are listed below

+ (public)

# (protected)

- (private)

Underline (static)

*Italic* (abstract)

# 1.Package application

## 1.1 Class ChooseCharController

### 1.1.1 Fields

- Button btnVita	Button, selected Vita character
- Button btnMort	Button, selected Mort character
- Button btnTard	Button, selected Tard character
- Button btnDoux	Button, selected Doux character
- Button btnBack	Button back to Homepage

### 1.1.2 Methode

+ void setCharacter0()	Set character in array index 0 ,set Scene ChooseMode, and play audio mouseClicked
+ void setCharacter1()	Set character in array index 1 ,set Scene ChooseMode, and play audio mouseClicked
+ void setCharacter2()	Set character in array index 2 ,set Scene ChooseMode, and play audio mouseClicked
+ void setCharacter3()	Set character in array index 3 ,set Scene ChooseMode, and play audio mouseClicked
+ void back()	Set Scene to SceneHome and play Audio mouseClicked
+ void MouseEnterBack()	Change the color of btnBack Button to #C1C1C1
+ void MouseExitBack()	Change the color of btnBack Button to #FFFFFF
+ void MouseEnterVita()	Change the color of btnVita Button to #9BDB91
+ void MouseExitVita()	Change the color of btnVita Button to #64C155
+ void MouseEnterMort()	Change the color of btnMort Button to #F27474
+ void MouseExitMort()	Change the color of btnMort Button to #CC5A5A
+ void MouseEnterTard()	Change the color of btnTard Button to #FFE18A
+ void MouseExitTard()	Change the color of btnTard Button to #EEC038



+ void MouseEnterDoux()	Change the color of btnDoux Button to #8EAFED
+ void MouseExitDoux()	Change the color of btnDoux Button to #5671A4

## 1.2 Class ChooseModeController

### 1.2.1 Fields

- Button btnClassic	Button selected Classic Mode
- Button btnHard	Button selected Hard Mode
- Button btnHell	Button selected Hell Mode
- Button btnBack	Button back to ChooseCharacterscene

### 1.2.2 Methods

+ void selectClassic()	Set ObstacleOn is false, set friction is 15, set scene is GameScene, set HomeScreen is false, set GameScreen is True, set playing is true by letsPlaying(), and play audio mouseClicked
+ void selectHard	Like selectClassic() but set obstacleOn is true
+ void selectHell()	Like selectHard() but set friction is 7
+ void back()	Set Scene to homepage
+ void MouseEnterBack()	Change the color of btnBack Button to #C1C1C1
+ void MouseExitBack()	Change the color of btnBack Button to #FFFFFF
+ void MouseEnterClassic()	Change the color of btnBack Button to #98E3CA
+ void MouseExitClassic()	Change the color of btnBack Button to #66CDAA
+ void MouseEnterHard()	Change the color of btnBack Button to #FAE198
+ void MouseExitHard()	Change the color of btnBack Button to #F7CE55
+ void MouseEnterHell()	Change the color of btnBack Button to #F7A8A8
+ void MouseExitHell()	Change the color of btnBack Button to #F47171

## 1.3 Class HomePageController

### 1.3.1 Fields

- Button start	Button start the game
- Button tutorial	Button show tutorial

### 1.3.2 Methods

+ void MouseEnterStartl()	Change the color of btnStart Button to #FFD864
+ void MouseExitStart()	Change the color of btnStart Button to #D34F47
+ void MouseEnterTutorial()	Change the color of btnTutorial Button to #FD864
+ void MouseExitTutorial()	Change the color of btnTutorial Button to #85D6C0
+ void chooseChar()	Set Scene ChooseCharScene, and play Audio mouseClicked
+ void tutorial()	Set Scene Tutorial1, and play Audio mouseClicked

## 1.4 Class PlayGame\_Main extends Application

### 1.4.1 Fields

- <u>boolean isHomeScreen = true</u>	Check HomeScreen is showing now
- <u>boolean isGameScreen = false</u>	Check GameScreen is showing now
- <u>Scene sceneHome</u>	Scene of HomePage
- <u>Scene sceneChooseChar</u>	Scene of ChooseCharacter
- <u>Scene sceneChooseMode</u>	Scene of ChooseMode
- <u>Scene sceneGame</u>	Scene of Game
- <u>Scene sceneTutorial1</u>	Scene of Tutorial1
- <u>Scene sceneTutorial2</u>	Scene of Tutorial2
- <u>GameScreen gameScreen</u>	Game screen
- <u>Stage primarystage</u>	Stage
- <u>int character = 0</u>	Index of character that you select
- <u>int gameMode = 0</u>	Index of mode that you select

### 1.4.2 Methods

+ void start(Stage primarystage)	Download FXML file from scenebuilder and initialize scene each of parent (HomePage.fxml, ChooseChar.fxml, ChooseMode.fxml, Tutorial1.fxml, Tutorial2.fxml) Set stage cannot resize
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	Set title "DinoQute" Initialize StackPane names rootGame Initialize sceneGame with scene of rootGame Initialize gameScreen with GameScreen with p refwidth 600 and prefheight 640 Add gameScreen to rootGame Request focus on gameScreen Add Listener to gameScreen Set scene with sceneHome if HomeScreen is showing now Show the stage Use AnimationTimer to change frames If HomeScreen is showing now, looping the Audio homeBGM (using setOnEndOfMedia), play audio homeBGM and stop audio gameBG M Else if GameScreen is showing, stop the audio homeBGM looping the audio homeBGM (using setOnEndOfMedia), a nd play audio gameBGM and if the game is playing, paint the Component and update the game screen else set gameOver Start the AnimationTimer
+ void <u>setScene(Scene sc)</u>	Set scene with sc
+ void <u>setHomeScreen(boolean isH omeScreen)</u>	Set boolean of isHomeScene
+ void <u>setGameScreen(boolean isG ameScreen)</u>	Set boolean of isGameScene
+ Scene <u>getSceneHome()</u>	Get home scene
+ Scene <u>getSceneChooseMode ()</u>	Get ChooseMode scene
+ Scene <u>getSceneChooseChar()</u>	Get ChooseCharacter scene
+ Scene <u>getSceneGame()</u>	Get Game scene
+ Scene <u>getSceneTutorial1()</u>	Get Tutorial1 scene
+ Scene <u>getSceneTutorial2()</u>	Get Tutorial2 scene
+ int <u>getCharacter()</u>	Get index of character
+ void <u>setCharacter(int character)</u>	Set index of character

+ int getGameMode()	Get index of mode
+ void setGameMode(int gameMo de)	Set index of mode
+ void main()	Launch a program

## 1.5 Class TutorialController

### 1.5.1 Fields

- Button btnBack1	Button selected back to Homepage
- Button btnBack2	Button selected back to Tutorial1
- Button btnNext1	Button selected next to Tutorial2
- Button btnNext2	Button selected forward to HomePage

### 1.5.2 Methods

+ void back1()	Set Scene to homepage
+ void next1()	Set Scene to Tutorial2
+ void back2()	Set Scene to Tutorial1
+ void next2()	Set Scene to homepage
+ void MouseEnterBack1()	Change the color of btnBack1 Button to #C1C1C1
+ void MouseExitBack1()	Change the color of btnBack1 Button to #FFFFFF
+ void MouseEnterNext1()	Change the color of btnNext1 Button to #C1C1C1
+ void MouseExitNext1()	Change the color of btnNext1 Button to #FFFFFF
+ void MouseEnterBack2()	Change the color of btnBack2 Button to #C1C1C1
+ void MouseExitBack2()	Change the color of btnBack2 Button to #FFFFFF
+ void MouseEnterNext2()	Change the color of btnNext2 Button to #C1C1C1
+ void MouseExitNext2()	Change the color of btnNext2 Button to #FFFFFF

## 2. Package drawing

### 2.1 Class GameScreen extends Canvas

#### 2.1.1 Constructor

+ GameScreen(double width,double height)	Set width and height Set visble is true Add listener
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#### 2.1.2 Methods

+ void addListener()	Set keypress
+ void gameOver()	Draw image dinoDie fullscreen
+ void paintComponent()	Show point and draw gamescreen

## 3.Package entity

### 3.1 Class Apple extends Entity implement Irenderable

#### 3.1.1 Fields

- Image eachApple	Image of apple
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#### 3.1.2 Constructor

+ Apple(int x, int y)	Set X-axis,Y-axis, and apple image
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#### 3.1.3 Methods

+ void draw(GraphicsContext gc)	Draw image of apple at (x,y) coordinates
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### 3.2 Class Obstacle extends Entity implement Irenderable

#### 3.2.1 Fields

- Image eachObstacle	Image of obstacle
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#### 3.2.2 Constructor

+ Obstacle(int x, int y)	Set X-axis,Y-axis, and obstacle image
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#### 3.2.3 Methods

+ draw(GraphicsContext gc)	Draw image of obstacle at (x,y) coordinates
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### 3.3 Class Snake extends Entity implement Irenderable

#### 3.3.1 Constructor

+ Snake(int x, int y)	Set X-axis, Y-axis
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#### 3.3.2 Methods

+ draw(GraphicsContext gc)	Draw random image of snake at (x,y) coordinates
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## 4. Package entity.base

### 4.1 Class *Entity*

#### 4.1.1 Fields

- int x	X-axis
- int y	Y-axis

#### 4.1.2 Constructor

+ Entity(int x, int y)	Set X-axis and Y-axis
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#### 4.1.3 Methods

+ getX()	Get X-axis
+ setX(int x)	Set X-axis
+ getY()	Get Y-axis
+ setY(int y)	Set Y-axis

## 5. Package exception

### 5.1 Class appleSpawnOnMeException

### 5.2 Class obstacleSpawnOnMeException

## 6. Package sharedobject

### 6.1 Interface Irenderable

#### 6.1.1 Methods

+ void draw()	
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### 6.2 Class RenderableHolder

#### 6.2.1 Fields

- instance = <u>new RenderableHolder()</u>	Instance of RenderableHolder (Singleton)
+ ArrayList<Snake> allSnakeIma <u>ge</u>	Array of snake image
+ ArrayList<Apple> allAppleImag <u>e</u>	Array of apple image
+ ArrayList<Obstacle> allObstacl <u>eImage</u>	Array of obstacle image
- ArrayList<Snake> snakeArr	Array of snake
- ArrayList<Apple> appleArr	Array of apple
- ArrayList<Obstacle> obstacleAr <u>r</u>	Array of obstacle
+ Image <u>snake0</u>	Image of res "snake0.gif"
+ Image <u>snake1</u>	Image of res "snake1.gif"
+ Image <u>snake2</u>	Image of res "snake2.gif"

+ Image snake3	Image of res "snake3.gif"
+ Image snakeNaruto0	Image of res "snakeNaruto0.gif"
+ Image snakeNaruto1	Image of res "snakeNaruto1.gif"
+ Image snakeNaruto2	Image of res "snakeNaruto2.gif"
+ Image snakeNaruto3	Image of res "snakeNaruto3.gif"
+ Image appleImage	Image of res "apple.png"
+ Image appleImage1	Image of res "apple1.png"
+ Image appleImage2	Image of res "apple2.png"
+ Image appleImage3	Image of res "apple3.png"
+ Image appleImage4	Image of res "apple4.png"
+ Image obstacle0	Image of res "obstacle0.gif"
+ Image obstacle1	Image of res "obstacle1.gif"
+ Image obstacle2	Image of res "obstacle2.gif"
+ Image obstacle3	Image of res "obstacle3.gif"
+ Image backGround	Image of res "bg.png"
+ Image dinoDie	Image of res "dinoDie.gif"
+ AudioClip eating	Audio of res "eating.wav"
+ AudioClip die	Audio of res "die.wav"
+ AudioClip mouseClicked	Audio of res "mouseClick.wav"
+ MediaPlayer homeBGM	Music of res "HomeBGM.mp3"
+ MediaPlayer gameBGM	Music of res "GameBGM.mp3"
- int point = 0	Score of game set as 0
- int length = 1	Length of snake set as 1
- Snake snake	Snake
- Apple apple	Apple
- Obstacle obstacle	Obstacle
- int timeLag = 0	Time that count to make a move (timeLag == friction then move)
- int friction = 15	Period time to move
- int countToSpawn = 0	Time that count to spawn obstacle (countToSpawn == period then spawn obstacle)
- int period = 100	Period time to spawn obstacle
- int countToDestroy = 0	Time that count to remove obstacle (countToDestroy == lifeOfObstacle then remove obstacle)
- int lifeOfObstacle = 300	Period time to remove obstacle
- boolean right	Does snake move right?
- boolean left	Does snake move left?

- boolean up	Does snake move up?
- boolean down	Does snake move down?
- <i>boolean playing</i>	Is game running ?
- <i>boolean obstacleOn</i>	Does game spawn obstacle ?
- int x	X-axis of snake
- int xa	X-axis of apple
- int xo	X-axis of obstacle
- int y	Y-axis of snake
- int ya	Y-axis of apple
- int yo	Y-axis of obstacle

### 6.2.2 Constructor

+ RenderableHolder()	
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### 6.2.3 Methods

+ void loadResource()	Load image and audio. Add image to array.
+ RenderableHolder getInstance()	Get instance
+ ArrayList<Snake> getSnakeArr()	Get array of snake
+ void setSnakeArr(ArrayList<Snake> snakeArr)	Set array of snake
+ ArrayList<Obstacle> getObstacleArr()	Get array of obstacle
+ void setObstacleArr(ArrayList<Obstacle> obstacleArr)	Set array of obstacle
+ ArrayList<Apple> getAppleArr()	Get array of apple
+ void setAppleArr(ArrayList<Apple> appleArr)	Set array of apple
+ void setRight(Boolean right)	Set right
+ void setLeft(Boolean left)	Set left
+ void setUp(Boolean up)	Set up
+ void setDown(Boolean down)	Set down
+ void setPoint(int point)	Set point
+ void setFriction(int friction)	Set friction
+ boolean isPlaying()	Get playing
+ boolean isObstacleOn()	Get obstacleOn
+ void setObstacleOn(boolean odstacleOn)	Set obstacleOn
+ void letsPlaying()	Set playing as true
+ void stop()	Set length = 1, set snake direction as right, new array of snake, new array of apple, set playing as false, and play die sound



+ void update()	Update every frame (spawn apple, spawn obstacle, make a move of snake)
+ void snakeEating()	Increment length of snake and snake, remove apple in array, play eating sound
+ void spawnApple() throws appleSpawnOnMeException	Spawn apple
+ void spawnAppleCorrection()	Solve error of spawning apple
+ void spawnObstacle()	Spawn obstacle
+ void spawnObstacleCorrection()	Solve error of spawning obstacle
+ void destroyObstacle()	Destroy obstacle
+ boolean isRight()	Get right
+ boolean isLeft()	Get left
+ boolean isUp()	Get up
+ boolean isDown()	Get down
+ int getPoint()	Get point
+ MediaPlayer <u>getAudio(String directory)</u>	Get music and return to mediaPlayer