**QUTE BOY Documentation**

**Created by**

 Wattanatorn Rujirojsakul 6230484421

Supakorn Kaewjaeng 6230514621

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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

Graphical user interface, application

Description automatically generatedWhen 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.

Graphical user interface, application

Description automatically generated

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.

Graphical user interface, application

Description automatically generated

Graphical user interface, application

Description automatically generatedHomePage

Tutorial

Graphical user interface, application

Description automatically generatedA screenshot of a computer

Description automatically generated with medium confidence

A picture containing text, electronics, screenshot

Description automatically generatedChoose Character Screen  Choose Mode Screen

Graphical user interface, application

Description automatically generatedGame Screen

Graphical user interface, application

Description automatically generated with medium confidence

Class diagram

Timeline

Description automatically generated with medium confidence

\* 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 mouseClick |
| + void setCharacter1() | Set character in array index 1  ,set Scene ChooseMode, and play audio mouseClick |
| + void setCharacter2() | Set character in array index 2  ,set Scene ChooseMode, and play audio mouseClick |
| + void setCharacter3() | Set character in array index 3  ,set Scene ChooseMode, and play audio mouseClick |
| + void back() | Set Scene to SceneHome and play Audio mouseClick |
| + 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 mouseClick |
| + 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 mouseClick |
| + void tutorial() | Set Scene Tutorial1, and play Audio mouseClick |

**1.4 Class PlayGame\_Main extends Application**

1.4.1 Fields

|  |  |
| --- | --- |
| - boolean isHomeScreen = true | Check HomeScreen is showing now |
| - boolean isGameScreen = false | Check GameScreen is showing now |
| - Scene sceneHome | Scene of HomePage |
| - Scene sceneChooseChar | Scene of ChooseCharacter |
| - Scene sceneChooseMode | Scene of ChooseMode |
| - Scene sceneGame | Scene of Game |
| - Scene sceneTutorial1 | Scene of Tutorial1 |
| - Scene sceneTutorial2 | Scene of Tutorial2 |
| - GameScreen gameScreen | Game screen |
| - Stage primarystage | Stage |
| - int character = 0 | Index of character that you select |
| - int gameMode = 0 | 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  Set title “DinoQute”  Initialize StackPane names rootGame  Initialize sceneGame with scene of rootGame  Initialize gameScreen with GameScreen with prefwidth 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 gameBGM  Else if GameScreen is showing, stop the audio homeBGM looping the audio homeBGM (using setOnEndOfMedia), and play audio gameBGM and if the game is playing, paint the Component and update the game screen else set gameOver  Start the AnimationTimer |
| + void setScene(Scene sc) | Set scene with sc |
| + void setHomeScreen(boolean isHomeScreen) | Set boolean of isHomeScene |
| + void setGameScreen(boolean isGameScreen) | Set boolean of isGameScene |
| + Scene getSceneHome() | Get home scene |
| + Scene getSceneChooseMode () | Get ChooseMode scene |
| + Scene getSceneChooseChar() | Get ChooseCharacter scene |
| + Scene getSceneGame() | Get Game scene |
| + Scene getSceneTutorial1() | Get Tutorial1 scene |
| + Scene getSceneTutorial2() | Get Tutorial2 scene |
| + int getCharacter() | Get index of character |
| + void setCharacter(int character) | Set index of character |
| + int getGameMode() | Get index of mode |
| + void setGameMode(int gameMode) | 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 |

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 |

3.1.2 Constructor

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

3.1.3 Methods

|  |  |
| --- | --- |
| + void draw(GraphicsContext gc) | Draw image of apple at (x,y) coordinates |

**3.2 Class Obstacle extends Entity implement Irenderable**

3.2.1 Fields

|  |  |
| --- | --- |
| - Image eachObstacle | Image of obstacle |

3.2.2 Constructor

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

3.2.3 Methods

|  |  |
| --- | --- |
| + draw(GraphicsContext gc) | Draw image of obstacle at (x,y) coordinates |

3.3 Class Snake extends Entity implement Irenderable

3.3.1 Constructor

|  |  |
| --- | --- |
| + Snake(int x, int y) | Set X-axis, Y-axis |

3.3.2 Methods

|  |  |
| --- | --- |
| + draw(GraphicsContext gc) | Draw random image of snake at (x,y) coordinates |

**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 |

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() |  |

6.2 Class RenderableHolder

6.2.1 Fields

|  |  |
| --- | --- |
| - instance = new RenderableHolder() | Instance of RenderableHolder  (Singleton) |
| + ArrayList<Snake> allSnakeImage | Array of snake image |
| + ArrayList<Apple> allAppleImage | Array of apple image |
| + ArrayList<Obstacle> allObstacleImage | Array of obstacle image |
| - ArrayList<Snake> snakeArr | Array of snake |
| - ArrayList<Apple> appleArr | Array of apple |
| - ArrayList<Obstacle> obstacleArr | Array of obstacle |
| + Image snake0 | Image of res “snake0.gif” |
| + Image snake1 | Image of res “snake1.gif” |
| + Image snake2 | 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 mouseClick | 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? |
| *- boolean playing* | Is game running ? |
| *- boolean obstacleOn* | 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() |  |

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 getAudio(String directory) | Get music and return to mediaPlayer |