Rambo Stickman Report

Created by

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Programming Methodology

Semester 1 Year 2018

Introduction

Rambo Stickman is a fighting game which you can punch or kick. This game allow you

User guide

Start Scene

Implementation Details

UML

\* Noted that Access Modifier Notations can be listed below

+ (public)

# (protected)

- (private)

static will be underlined.

abstract will be italic

**1. Package application**

**1.1 Class Main extends Application**

1.1.1 Method

|  |  |
| --- | --- |
| + void main(String[] args) | - An entry point of the application |
| + void start(Stage primaryStage) | - The main entry point of the JavaFX application. |

**2. Package buff**

**2.1 Class *Buffs***

2.1.1 Field

|  |  |
| --- | --- |
| - int X ,Y , destination | **?** |
| - int dropSpeed | **?** |

2.1.2 Constructor

|  |  |
| --- | --- |
| + Buffs() | **?** |

2.1.3 Method

|  |  |
| --- | --- |
| + *boolean pickUpBy(StickMan sm, double pickTime)* | **?** |
| + *void draw(GraphicsContext gc)* | ? |
| + void move() | ? |
| + int getX() | ? |
| + int getY() | ? |

**2.2 Class DamageBuff extends Buffs**

2.2.1 Constructor

|  |  |
| --- | --- |
| + DamageBuff() | - Call super class costructor |

2.2.2 Method

|  |  |
| --- | --- |
| + *boolean pickUpBy(StickMan sm, double pickTime)* | **? override** |
| + *void draw(GraphicsContext gc)* | ? override |

**2.3 Class DefenceBuff extends Buffs**

2.3.1 Constructor

|  |  |
| --- | --- |
| + DefenceBuff() | - Call super class costructor |

2.3.2 Method

|  |  |
| --- | --- |
| + *boolean pickUpBy(StickMan sm, double pickTime)* | **? override** |
| + *void draw(GraphicsContext gc)* | ? override |

**2.4 Class HealBuff extends Buffs**

2.4.1 Constructor

|  |  |
| --- | --- |
| + HealBuff() | - Call super class costructor |

2.4.2 Method

|  |  |
| --- | --- |
| + *boolean pickUpBy(StickMan sm, double pickTime)* | **? override** |
| + *void draw(GraphicsContext gc)* | ? override |

**2.5 Class SpeedBuff extends Buffs**

2.5.1 Constructor

|  |  |
| --- | --- |
| + SpeedBuff() | - Call super class costructor |

2.5.2 Method

|  |  |
| --- | --- |
| + *boolean pickUpBy(StickMan sm, double pickTime)* | **? override** |
| + *void draw(GraphicsContext gc)* | ? override |

**3. Package exception**

**3.1 Class AttackFailException extends Exception**

3.1.1 Field

|  |  |
| --- | --- |
| - long serialVersionUID | - 6466107723056783598L |

**4. Package model**

**4.1 Class Character**

4.1.1 Field

|  |  |
| --- | --- |
| + final int WIDTH | ? |
| + final int HEIGHT | ? |
| + final int ATTACK\_RANGE | ? |
| + final int ATTACK\_COOLDOWN | ? |
| + final int[] FLOOR\_LEVEL | ? |
| + final Image SOLID\_GREY | ? |
| + final Image SOLID\_RED | ? |
| + final Image SOLID\_BLUE | ? |
| + final Image SOLID\_YELLOW | ? |
| + final Image MISSILE\_R | ? |
| + final Image MISSILE\_L | ? |
| + final Image RedFist | ? |
| + final Image BlueShield | ? |
| + final Image YellowBoots | ? |
| + final Image GreenCross | ? |
| + final Image IDLE | ? |
| + final Image JUMP | ? |
| + final Image CROUCH | ? |
| + final Image BLOCK | ? |
| + final Image walkR1 | ? |
| + final Image walkR2 | ? |
| + final Image walkR3 | ? |
| + final Image walkL1 | ? |
| + final Image walkL2 | ? |
| + final Image walkL3 | ? |
| + final Image C\_punchL1 | ? |
| + final Image C\_punchL2 | ? |
| + final Image C\_punchL3 | ? |
| + final Image punchL1 | ? |
| + final Image punchL2 | ? |
| + final Image punchR1 | ? |
| + final Image punchR2 | ? |
| + final Image kickL1 | ? |
| + final Image kickL2 | ? |
| + final Image kickR1 | ? |
| + final Image kickR2 | ? |
| + final Image RED\_IDLE | ? |
| + final Image RED\_BLOCK | ? |
| + final Image RED\_walkR1 | ? |
| + final Image RED\_walkR2 | ? |
| + final Image RED\_walkR3 | ? |
| + final Image RED\_walkL1 | ? |
| + final Image RED\_walkL2 | ? |
| + final Image RED\_walkL3 | ? |
| + final Image RED\_punchL1 | ? |
| + final Image RED\_punchL2 | ? |
| + final Image RED\_punchR1 | ? |
| + final Image RED\_punchR2 | ? |
| + final Image RED\_kickL1 | ? |
| + final Image RED\_kickL2 | ? |
| + final Image RED\_kickR1 | ? |
| + final Image RED\_kickR2 | ? |
| + final Image BLUE\_IDLE | ? |
| + final Image BLUE\_BLOCK | ? |
| + final Image BLUE\_walkR1 | ? |
| + final Image BLUE\_walkR2 | ? |
| + final Image BLUE\_walkR3 | ? |
| + final Image BLUE\_walkL1 | ? |
| + final Image BLUE\_walkL2 | ? |
| + final Image BLUE\_walkL3 | ? |
| + final Image BLUE\_punchL1 | ? |
| + final Image BLUE\_punchL2 | ? |
| + final Image BLUE\_punchR1 | ? |
| + final Image BLUE\_punchR2 | ? |
| + final Image BLUE\_kickL1 | ? |
| + final Image BLUE\_kickL2 | ? |
| + final Image BLUE\_kickR1 | ? |
| + final Image BLUE\_kickR2 | ? |
| + final Image GREY\_IDLE | ? |
| + final Image GREY\_BLOCK | ? |
| + final Image GREY\_walkR1 | ? |
| + final Image GREY\_walkR2 | ? |
| + final Image GREY\_walkR3 | ? |
| + final Image GREY\_walkL1 | ? |
| + final Image GREY\_walkL2 | ? |
| + final Image GREY\_walkL3 | ? |
| + final Image GREY\_punchL1 | ? |
| + final Image GREY\_punchL2 | ? |
| + final Image GREY\_punchR1 | ? |
| + final Image GREY\_punchR2 | ? |
| + final Image GREY\_kickL1 | ? |
| + final Image GREY\_kickL2 | ? |
| + final Image GREY\_kickR1 | ? |
| + final Image GREY\_kickR2 | ? |

**4.2 Class EnemyBlue**

4.2.1 Field

|  |  |
| --- | --- |
| + final Image[] toRight | **?** |
| + final Image[] toLeft | **?** |
| - final Image[] punchLeft | **?** |
| - final Image[] punchRight | **?** |
| - final Image[] kickLeft | **?** |
| - final Image[] kickRight | **?** |
| + final int PUNCH\_DAMAGE | **?** |
| + final int KICK\_DAMAGE | **?** |
| + final int MAX\_HP | **?** |
| + final double WALK\_SPEED | **?** |
| + final int ARMOR | **?** |
| - Thread t | **?** |
| - Image state | **?** |
| - boolean alive, idle, walking, jumping, attacking, blocking | **?** |
| - int hp, nextAttackTime | **?** |
| - double hpBar | **?** |
| - int actionCounter | **?** |
| - double X, Y | **?** |
| - String action | **?** |
| - double actionDuration | **?** |
| - double actionEnd | **?** |

4.2.2 Constructor

|  |  |
| --- | --- |
| + EnemyBlue() | **?** |

4.2.3 Method

|  |  |
| --- | --- |
| + void updateHP() | **?** |
| + void kickRight() | ? |
| + void kickLeft() | ? |
| + void punchRight() | ? |
| + void punchLeft() | ? |
| + void walkRight() | ? |
| + void walkLeft() | ? |
| + void getter,setter | state, alive, idle, walking, jumping, attacking, blocking, hp, hpBar, walkCounter, X, Y, action, actionDuration, actionEnd |
| + void draw(GraphicsContext gc) | ? |
| + void randomAttackLeft(StickMan sm, int attackTime) | ? |
| + void randomAttackRight(StickMan sm, int attackTime) | ? |
| + void randomAction(double startTime) | ? |
| + void act() | ? |
| + void takeDamage(int damage) | ? |

**4.3 Class EnemyGrey**

4.3.1 Field

|  |  |
| --- | --- |
| + final Image[] toRight | **?** |
| + final Image[] toLeft | **?** |
| - final Image[] punchLeft | **?** |
| - final Image[] punchRight | **?** |
| - final Image[] kickLeft | **?** |
| - final Image[] kickRight | **?** |
| + final int PUNCH\_DAMAGE | **?** |
| + final int KICK\_DAMAGE | **?** |
| + final int MAX\_HP | **?** |
| + final double WALK\_SPEED | **?** |
| - Thread t | **?** |
| - Image state | **?** |
| - boolean alive, idle, walking, jumping, attacking, blocking | **?** |
| - int hp, nextAttackTime | **?** |
| - double hpBar | **?** |
| - int actionCounter | **?** |
| - double X, Y | **?** |
| - String action | **?** |
| - double actionDuration | **?** |
| - double actionEnd | **?** |

4.3.2 Constructor

|  |  |
| --- | --- |
| + EnemyGrey() | **?** |

4.3.3 Method

|  |  |
| --- | --- |
| + void updateHP() | **?** |
| + void kickRight() | ? |
| + void kickLeft() | ? |
| + void punchRight() | ? |
| + void punchLeft() | ? |
| + void walkRight() | ? |
| + void walkLeft() | ? |
| + void getter,setter | state, alive, idle, walking, jumping, attacking, blocking, hp, hpBar, walkCounter, X, Y, action, actionDuration, actionEnd |
| + void draw(GraphicsContext gc) | ? |
| + void randomAttackLeft(StickMan sm, int attackTime) | ? |
| + void randomAttackRight(StickMan sm, int attackTime) | ? |
| + void randomAction(double startTime) | ? |
| + void act() | ? |
| + void takeDamage(int damage) | ? |

**4.4 Class EnemyRed**

4.4.1 Field

|  |  |
| --- | --- |
| + final Image[] toRight | **?** |
| + final Image[] toLeft | **?** |
| - final Image[] punchLeft | **?** |
| - final Image[] punchRight | **?** |
| - final Image[] kickLeft | **?** |
| - final Image[] kickRight | **?** |
| + final int PUNCH\_DAMAGE | **?** |
| + final int KICK\_DAMAGE | **?** |
| + final int MAX\_HP | **?** |
| + final double WALK\_SPEED | **?** |
| - Thread t | **?** |
| - Image state | **?** |
| - boolean alive, idle, walking, jumping, attacking, blocking | **?** |
| - int hp, nextAttackTime | **?** |
| - double hpBar | **?** |
| - int actionCounter | **?** |
| - double X, Y | **?** |
| - String action | **?** |
| - double actionDuration | **?** |
| - double actionEnd | **?** |

4.4.2 Constructor

|  |  |
| --- | --- |
| + EnemyBlue() | **?** |

4.4.3 Method

|  |  |
| --- | --- |
| + void updateHP() | **?** |
| + void kickRight() | ? |
| + void kickLeft() | ? |
| + void punchRight() | ? |
| + void punchLeft() | ? |
| + void walkRight() | ? |
| + void walkLeft() | ? |
| + getter,setter | state, alive, idle, walking, jumping, attacking, blocking, hp, hpBar, walkCounter, X, Y, action, actionDuration, actionEnd |
| + void draw(GraphicsContext gc) | ? |
| + void randomAttackLeft(StickMan sm, int attackTime) | ? |
| + void randomAttackRight(StickMan sm, int attackTime) | ? |
| + void randomAction(double startTime) | ? |
| + void act() | ? |
| + void takeDamage(int damage) | ? |

**4.5 Class GameButton extends Button**

4.5.1 Field

|  |  |
| --- | --- |
| - final String BUTTON\_PRESSED | **?** |
| - final String BUTTON\_FREE | **?** |
| - final String BUTTON\_ENTER | **?** |

4.5.2 Constructor

|  |  |
| --- | --- |
| + GameButton(String text) | **?** |

4.5.3 Method

|  |  |
| --- | --- |
| + void setFontSize(int size) | **?** |
| - void setButton(String style) | ? |
| - void setButtonPressed() | ? |
| - void setButtonFree() | ? |
| - void setButtonEnter() | ? |
| - void initializeButtonListeners() | ? |

**4.6 Class InfoLabel extends Label**

4.6.1 Constructor

|  |  |
| --- | --- |
| + InfoLabel(String text) | **?** |
| + InfoLabel(String text, int width, int height) | **?** |

**4.7 Class InputField extends VBox**

4.7.1 Field

|  |  |
| --- | --- |
| - TextField textField | **?** |

4.7.2 Constructor

|  |  |
| --- | --- |
| + InputField(String prompText) | **?** |

4.7.3 Method

|  |  |
| --- | --- |
| + String getText() | **?** |

**4.8 Class MySubScene extends SubScene**

4.8.1 Field

|  |  |
| --- | --- |
| - AnchorPane rootSubScene | **?** |
| - *boolean subSceneIsHidden* | **?** |

4.8.2 Constructor

|  |  |
| --- | --- |
| + MySubScene() | **?** |

4.8.3 Method

|  |  |
| --- | --- |
| + void moveSubScene() | **?** |
| - AnchorPane getRootSubScene() | ? |

**\*\*\*4.9 Class ScoreBoard**

4.9.1 Field

|  |  |
| --- | --- |
|  | **?** |

4.9.2 Constructor

|  |  |
| --- | --- |
|  | **?** |

4.9.3 Method

|  |  |
| --- | --- |
|  | **?** |

**4.10 Class Sound**

4.10.1 Field

|  |  |
| --- | --- |
| + AudioClip enterSound | **?** |
| + AudioClip pressSound | **?** |
| + AudioClip punchSound | **?** |
| + AudioClip kickSound | **?** |
| + AudioClip blockSound | **?** |
| + AudioClip missSound | **?** |
| + AudioClip explosionSound | **?** |

**4.11 Class StickMan**

4.11.1 Field

|  |  |
| --- | --- |
| + final Image[] toRight | **?** |
| + final Image[] toLeft | **?** |
| - final Image[] punchLeft | **?** |
| - final Image[] punchRight | **?** |
| - final Image[] kickLeft | **?** |
| - final Image[] kickRight | **?** |
| + int PUNCH\_DAMAGE | **?** |
| + int KICK\_DAMAGE | **?** |
| + final int MAX\_HP | **?** |
| + double WALK\_SPEED | **?** |
| + int DEFENCE | **?** |
| - String name | **?** |
| - Image state | **?** |
| - boolean alive, idle, walking, jumping, attacking, blocking, crouching | **?** |
| - boolean buffedDamage, buffedDefence, speedBuffDuration | **?** |
| - int hp | **?** |
| - double hpBar, damageBuffExpire, defenceBuffExpire, speedBuffExpire | **?** |
| - double damageBuffDuration, defenceBuffDuration, speedBuffDuration | **?** |
| - int actionCounter | **?** |
| - double X, Y | **?** |
| - boolean jump, down | **?** |
| - int n, dv | **?** |
| - Thread t | **?** |

4.11.2 Constructor

|  |  |
| --- | --- |
| + StickMan(String name) | **?** |

4.11.3 Method

|  |  |
| --- | --- |
| + void punch(EnemyGrey target) | **?** |
| + void punch(EnemyRed target) | **?** |
| + void punch(EnemyBlue target) | **?** |
| + void kick(EnemyGrey target) | **?** |
| + void kick(EnemyRed target) | **?** |
| + void kick(EnemyBlue target) | **?** |
| + void takeDamage(int hp) | ? |
| + void updateHp() | ? |
| + void block() | ? |
| + void walkRight() | ? |
| + void walkLeft() | ? |
| + void punchRight() | ? |
| + void punchLeft() | ? |
| + void kickRight() | ? |
| + void kickLeft() | ? |
| + void jump() | ? |
| + void crouch() | ? |
| + void down() | ? |
| + void draw(GraphicsContext gc) | ? |
| + void increaseDamage() | ? |
| + void decreaseDamage() | ? |
| + void increaseDefence() | ? |
| + void decreaseDefence() | ? |
| + void increaseSpeed() | ? |
| + void decreaseSpeed() | ? |
| + void manageBuff(double time) | ? |
| + getter,setter | state, alive, idle, walking, jumping, down, attacking, blocking, crouching, hp, hpBar, X, Y, name, buffedDamage, buffedDefence, buffedSpeed, damageBuffExpire, defenceBuffExpire, speedBuffExpire |

**5. Package obstacle**

**5.1 Class Missile**

5.1.1 Field

|  |  |
| --- | --- |
| + int width | **?** |
| +int height | **?** |
| - double X, Y | **?** |
| - int vX | **?** |
| - Image ms | **?** |
| + boolean isExplode | **?** |

5.1.2 Constructor

|  |  |
| --- | --- |
| + Missile() | **?** |

5.1.3 Method

|  |  |
| --- | --- |
| + void draw(GraphicsContext gc) | ? |
| + void move() | ? |
| + boolean checkHit(Stickman sm) | ? |
| + setImage(Image image) | ? |
| + void setSize(int width, int height) | ? |
| + int getVX() | ? |
| + void setBomb(double X, double Y) | ? |

**6. Package view**

**6.1 Class GameViewManager extends ViewManager**

6.1.1 Field

|  |  |
| --- | --- |
| + final int width = 960 | **?** |
| + final int height = 600 | **?** |
| + final int GroundThickness = 20 | **?** |
| - AnchorPane gamePane | **?** |
| - Scene gameScene | **?** |
| - Stage gameStage | **?** |
| - Stage hideStage | **?** |
| - Thread t, g | **?** |
| - GraphicsContext gc | **?** |
| - StickMan PlayerCharacter | **?** |
| - ArrayList<EnemyRed> RedBot | **?** |
| - ArrayList<EnemyRed> BlueBot | **?** |
| - ArrayList<EnemyRed> GreyBot | **?** |
| - ArrayList<Buffs> buffs | **?** |
| - CopyOnWriteArrayList<Missile> missiles | **?** |
| - int lastAddRed, lastAddBlue, lastAddGrey, lastAddMissile, lastAddBuff, score | **?** |
| - boolean redWasFilled, blueWasFilled, greyWasFilled | **?** |
| - ArrayList<String> input | **?** |
| - boolean attacked | **?** |
| - GameButton button | **?** |
| + AnimationTimer TIMER | **?** |
| - boolean gamePaused | **?** |

6.1.2 Constructor

|  |  |
| --- | --- |
| + GameViewManager(String playerName) | **?** |

6.1.3 Method

|  |  |
| --- | --- |
| - createButton() | ? |
| - void createKeyListener() | ? |
| - void InitializeStage() | ? |
| + void hideMenuScene(Stage menuStage) | ? |
| - void start(Stage gameStage) | ? |
| - void hideGameScene() | ? |
| + AnchorPane getGamePane() | ? |
| + getter, setter | gameScene, gameStage, gamePane, gc |

**6.2 Class ViewManager**

6.2.1 Field

|  |  |
| --- | --- |
| - final int width = 950 | **?** |
| - final int height = 580 | **?** |
| - AnchorPane mainPane | **?** |
| - Scene mainScene | **?** |
| - Stage mainStage | **?** |
| - final int button\_x = 100 | **?** |
| - final int button\_y = 80 | **?** |
| - List<GameButton> menuButtons; | **?** |
| - GameButton resumeButton | **?** |
| + String playerName | **?** |
| - MySubScene playSubScene | **?** |
| - MySubScene howToPlaySubScene | **?** |
| - MySubScene scoreSubScene | **?** |
| - MySubScene showSubScene | **?** |
| - GameViewManager gameViewManager | **?** |

6.2.2 Constructor

|  |  |
| --- | --- |
| + ViewManager() | **?** |

6.2.3 Method

|  |  |
| --- | --- |
| - void createSubScene() | ? |
| - void createPlaySubScene() | ? |
| - void createScoreSubScene() | ? |
| - void addMenuButton(GameButton button) | ? |
| - void createButton() | ? |
| - void createResumeButton() | ? |
| - void createNewGameButton() | ? |
| - void createHowToPlayButton() | ? |
| - void createScoreButton() | ? |
| - void createExitButton() | ? |
| - void checkSubScene() | ? |
| - void createBackground() | ? |
| + getter, setter | List<GameButton> |