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| **DinoCharacter** | | |
| + score  + LAND\_POSY  + **GRAVITY**  - **NORMAL\_RUN**  - **JUMPING**  - **DOWN\_RUN**  - **DEATH**  - posY  - posX  - speedX  - speedY  - rectBound  - countJump  - hp  - state  - normalRunAnim  - jumping  - downRunAnim  - deathImage  - jumpSound  - deadSound  - scoreUpSound  - normalState  - downState | | : int  : int  : float  : int  : int  : int  : int  : float  : float  : double  : float  : Rectangle  : int  : int  : NORMAL\_RUN  : Animation  : BufferedImage  : Animation  : BufferedImage  : AudioClip  : AudioClip  : AudioClip  : BufferedImage  : BufferedImage |
| + DinoCharacter ()  + getSpeedX ()  + setSpeedX (double speedX)  + draw (Graphics g)  + update ()  + jump ()  + down (boolean isDown)  + getBound ()  + dead (boolean isDeath)  + reset ()  + playDeadSound ()  + playScoreSound ()  + setLAND\_POSY (int g)  + getLAND\_POSY ()  + getPosX  + getDinoWidth  + getPosY ()  + getHp  + setHP |  | : double  : void  : void  : void  : void  : void  : Rectangle  : void  : void  : void  : void  : void  : int  : float  : float  : float  : int  : void |

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| **RunnerScore** | |
| + upSpeedGame | : int |
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| **GroundEnemy** | |
| + **Y\_LAND**  **-** posX  - width  - height  - image  - mainCharacter  - enemyCounts  - rectBound  - listCactus [] | : int  : double  : int  : int  : BufferedImage  : DinoCharacter  : int  : Rectangle  : BufferedImage |
| + groundEnemy (DinoCharacter  mainCharacter, int posX)  +update (double posX)  + draw (Graphics g)  + getBound ()  + getPosX ()  + setPosX ()  - getImageNum () | : void  : void  : Rectangle  : double  : void  : int |

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| **AirEnemy** | |
| + Y\_LAND  - posX  - width  - height  - image  - mainCharacter  - enemyCounts  - rectBound  - listMons[][]  - flyAnim | : int  : double  : int  : int  : BuffereredImage  : DinoCharacter  : int  : Rectangle  : bufferedImage  : Animation |
| + AirEnemy (DinoCharacter  mainCharacter, int posX)  + update (double posX)  + draw (Graphics g)  + getBound  + getPosX  + setPosX((int x)  - randomLandY ()  + isOutOfScreen | : void  : void  : Rectangle  : double  : void  : int  : boolean |

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| **GameScreen** | |
| + enemyAndLandCount  + blankBox  - countStage\*\*  - name  - namsHs  - hightscore  - jumpcount  - bg  - backgroundPoint  - **START\_GAME\_STATE**  - **GAME\_PLAYING\_STATE**  - **GAME\_OVER\_STATE**  - manager  - mainCharacter  - clouds  - thread  - score  - runScore  - isKeyPressed  + enemyAndLandCount  - gameState  - replayButtonImage  - gameOverButtonImage  - speedGameM  - speedGameN | : int  : boolean  : int  : String  : String  : int  : int  : BufferedImage  : double  : int  : int  : int  : ObjectGameManager  : DinoCharacter  : Clouds  : Thread  : RunnerScore  : Thread  : Boolean  : int  : int  : BufferedImage  : BufferedImage  : int  : int |
| + GameScreen ()  + getNameFirst (String n)  + startGame ()  + gameUpdate ()  + paint (Graphics g)  + run()  + getCountStage ()  + keyPressed(KeyEvent e)  + keyReleased(KeyEvent e)  + keyTyped(KeyEvent e)  - resetGame ()  + setSpeed(int d) | : void  : void  : void  : void  : void  : int  : void  : void  : void  : void  : void |

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| **GameWindow** | |
| + **SCREEN\_WIDTH**  - gameScreen  screenSize | : int  : GameScreen  : Dimension |
| + GameWindow ()  + startGame (String n) | : void |

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| **HighScoreStorage** | |
| - name  - hightscore | : String  : int |
| + getHighscore ()  + getName ()  + saveHighscore (int hs)  + saveName (String n) | : int  : String  : void  : void |

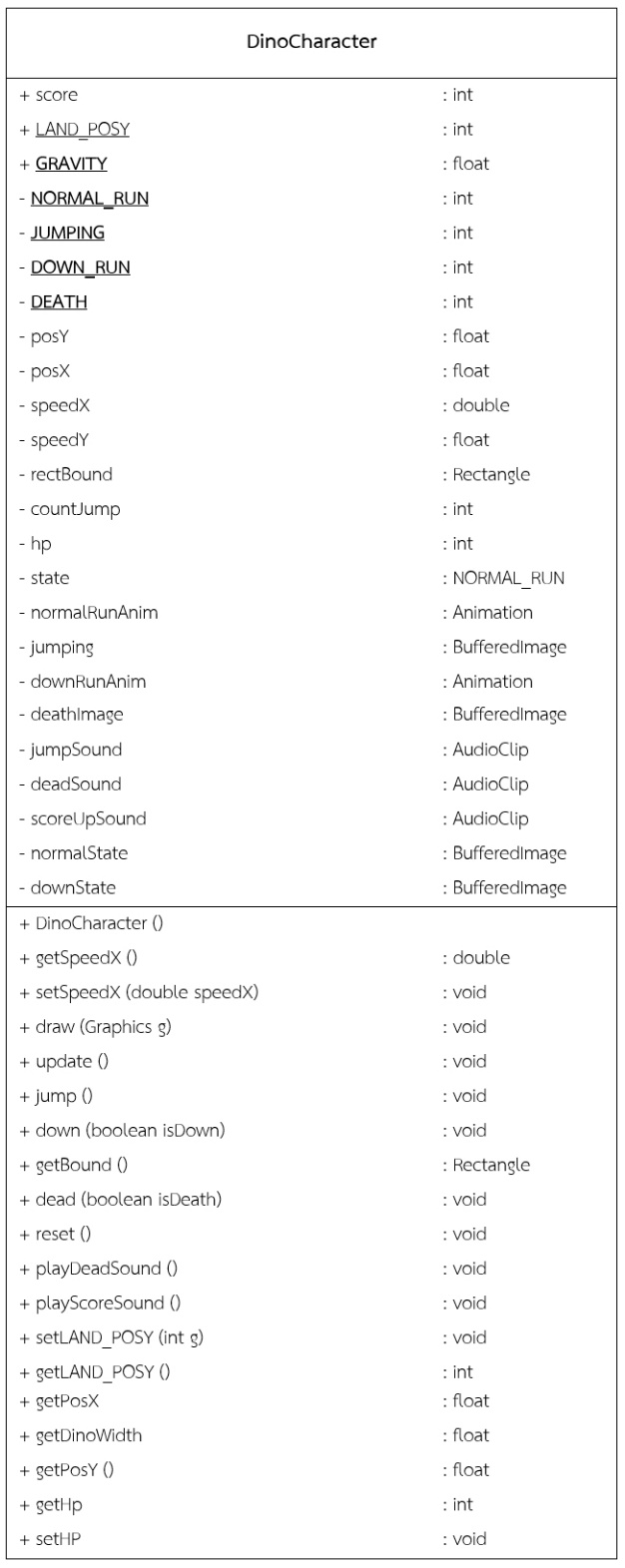
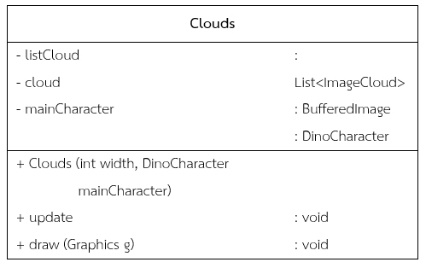
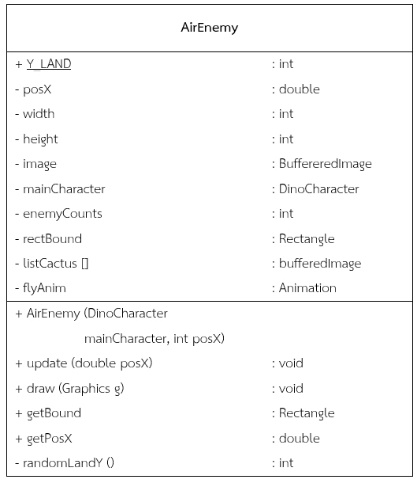
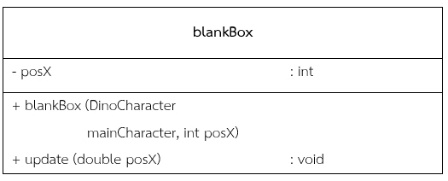
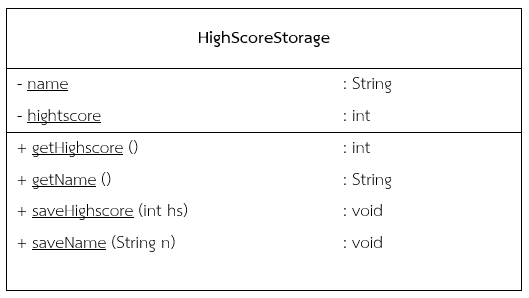
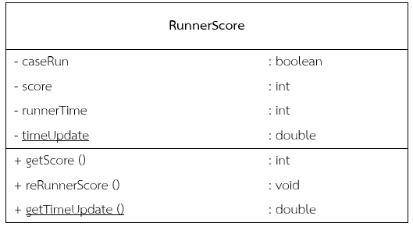
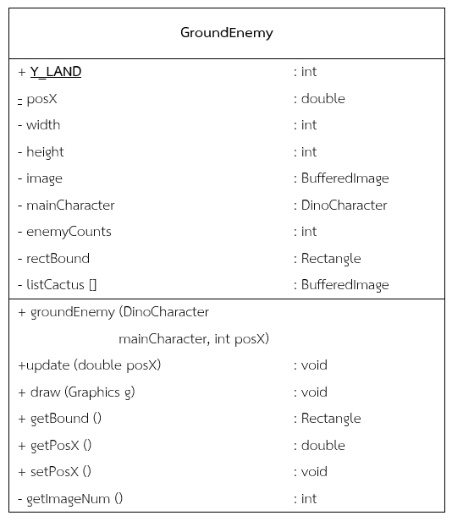
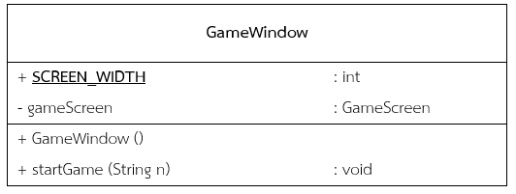
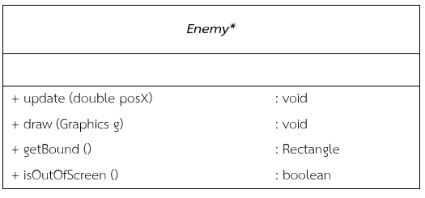
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| --- | --- |
| **StartWindow** | |
| + **SCREEN\_WIDTH**  - name  - gameWindow  - sp  - lb  - n  - start  screenSize | : int  : String  : GameWindow  : JPanel  : JLabel  : JTextField  : JButton  : Dimension |
| + StartWindow ()  + startPage ()  + main (String args [])  + actionPerformed(ActionEvent e) | : void  : void  : void |

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| **Clouds** | | |
| - listCloud  - cloud1  - cloud2  - mainCharacter | : List<ImageCloud>  : BufferedImage  : BufferedImage  : DinoCharacter | |
| + Clouds (int width, DinoCharacter  mainCharacter)  + update  + draw (Graphics g) | | : void  : void |

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| ***Enemy\**** | |
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| + update (double posX)  + draw (Graphics g)  + getBound ()  + isOutOfScreen () | : void  : void  : Rectangle  : boolean |

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| **blankBox** | |
| - posX | : int |
| + blankBox (DinoCharacter  mainCharacter, int posX)  + update (double posX) | : void |

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| **objecctGameManager** | |
| + countEnemy  + **LAND\_POSY**  - listLand  - land[]  - pitCount  - mainCharacter  - blank  - pitList[][]  - rand  - listEnemies  - boxWidth  - blankBox  - pre | : int  : int  : List<landBox>  : BufferedImage  : int  : DinoCharacter  : BufferedImage  : BufferedImage  : Random  : ArrayList<Enemy>  : int  : blankBox  : landBox |
| + ObjectGameManager (int width,  DinoCharacter  mainCharacter)  + createEnemy (int type, int posX)  + draw (Graphics g)  + update ()  + randomNumber (int limit)  + isCollision ()  + newStage ()  + reset ()  - setImageLand (landBox imgLand, int  type) | : Enemy  : void  : void  : int  : boolean  : void  : void  : void |

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