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| --- |
| Driver |
| +FRAME\_WIDTH:int  +FRAME\_HEIGHT:int  +frame:JFrame  +gameState:GameState  +mainPanel:JPanel  +titlePanel:TitlePanel  +endGamePanel:EndGamePanel  +gameOverPanel:GameOverPanel  +gamePanel:GamePanel  +pausePanel:PausePanel  +layout:CardLayout |
| +main(args[]:String) |

|  |
| --- |
| Player extends Actor implements KeyListener, MouseListener, hasCollision |
| -spriteImage:Image  +location,velocity:Vector2D  -rotation:int  +UP,DOWN,LEFT,RIGHT,JUMP,CLICK,alive,ROCKET:boolean  +Health:int  +last:direction  -playerHeight:int  -playerWidth:int  -sprite:Sprite  -oneSprite:Sprite |
| +Player()  +getCollision():Shape  +draw(g:Graphics2D):void  +Act(blocks:ArrayList<Block>):void  +Die():void  +restart():void  +keyTyped(e:KeyEvent):void  +keyPressed(e:KeyEvent):void  +keyReleased(e:KeyEvent):void  +mouseClicked(e:MouseEvent):void  +mousePressed(e:MouseEvent):void  +mouseReleased(e:MouseEvent):void  +mouseEntered(e:MouseEvent):void  +mouseExited(e:MouseEvent):void |

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| --- |
| Block extends ScreenObjects implements hasCollision |
| +size,position:Vector2D  -blockImage:BufferedImage |
| +Block(position:Vector2D)  +draw(g:Graphics2D):void  +getCollision():Rectangle  +getImage():BufferedImage |

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| --- |
| ExitBlock extends Block |
| -exitImage:BufferedImage  -size:Vector2D |
| +ExitBlock(location:Vector2D)  +draw():void |

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| --- |
| Abstract Actor extends ScreenObjects |
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| +draw(g:Graphics2D):void  +Act():void  +Die():void |

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| --- |
| Bullet extends ScreenObjects implements hasCollision |
| +allBullets:ArrayList<Bullet>  +velocity,size,location:Vector2D  -timeToLive:float  -damage:int |
| +Bullet(location:Vector2D,d:direction)  +HandleBullets(g.Graphics2D, allBlocks:ArrayList<Block>):void  +draw(Graphics2D):void  +Act(allScreenObjects:ArrayList<ScreenObjects>):void  +getCollision():Shape |

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| --- |
| Rocket extends Bullet |
| -velocity:Vector2D  -timeToLive:float  -damage:int |
| +Rocket(location:Vector2D, d:direction)  +draw(Graphics2D):void  +Act(allScreenObjects:ArrayList<ScreenObjects>):void  +getCollision():Shape |

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| --- |
| Enemy extends Actor implements Serializable |
| allEnemy:ArrayList<Enemy>  -enemyImage:Image  -last:direction  +velocity:Vector2D  +sprite:Sprite  +onGround,alive:boolean |
| +Enemy(location:Vector2D, size:Vector2D)  +Act(allScreenObjects:ArrayList<ScreenObjects>):void  +getCollision:Shape  +draw(g:Graphics2D):void  +Die():void |

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| --- |
| midEnemy extends Enemy |
| -last:direction  -Speed:float  -p:Player |
| +midEnemy(location:Vector2D, size:Vector2D,p:Player)  +Act(allScreenObjects:ArrayList<ScreenObjects>):void  +draw(g:Graphics2D):void  +getCollision():Shape |

|  |
| --- |
| smallEnemy extends Enemy |
| -last:direction  -p:Player |
| +smallEnemy(location:Vector2D, size:Vector2D,p:Player)  +draw(g:Graphics2D):void  +getCollision():Shape |

|  |
| --- |
| Boss extends Enemy |
| -enemyImage:Image  -last:direction  -SHOOT,ROCKET,GIGA, SLAM:boolean  -Speed:float |
| +Boss(location:Vector2D, size:Vector2D, p:Player)  +draw(g:Graphics2D):void  +Act(allScreenObjects:ArrayList<ScreenObjects>):void  -Attack():void  +Die():void |

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| --- |
| <<Enumeration>>  GameState |
| EndGame  Paused  PreGame  Running  GameOver |

|  |
| --- |
| <<Enumeration>>  Direction |
| Up  Down  Left  Right  downLeft  downRight |

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| --- |
| <<Interface>>  hasCollision |
| getCollision():Shape |

|  |
| --- |
| ScreenObjects implements hasCollision |
| +health:int  +allScreenObjects:ArrayList<ScreenObjects>  +allScreenObjectsToRemove:ArrayList<ScreenObjects>  +size,location,velocity:Vector2D  +GRAVITY:Vector2D  +DEBUG:boolean  +LevelComplete:boolean  +PATH:String |
| +draw(Graphics2D):void |

|  |
| --- |
| Sounds |
|  |
| +playSound(f:String):void |

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| --- |
| Sprite implements Serializable |
| +spriteSheet:BufferedImage  +currentFrame:BufferedImage  +animationNumber,frameNumber, tileXSize, tileYSize, FRAME\_NUMBER:int |
| +Sprite(fileName:String, tileWidth:int, tileHeight:int, frameNumber:int)  +Update():void |

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| --- |
| Vector2D |
| -x:float  -y:float |
| +Vector2D()  +Vector2D(x:float,y:float)  +Vector2D(v:Vector2D)  +Distance(position2:Vector2D, position3:Vector2D):double  +Distance(position3):double  +set(x:float,y:float):void  +setX(x:float):void  +setY(y:float):void  +getX():float  +getY():float  +rotate(angle:double):void  +Cross(U:Vector2D,V:Vector2D):float  +dot(v2:Vector2D):float  +getLength():float  +add(v2:Vector2D):Vector2D  +subtract(v2:Vector2D):Vector2D  +multiply(scaleFactor:float):Vector2D  +normalize():Vector2D  +toString():String |

|  |
| --- |
| TitlePanel extend JPanel |
| -serialVersionUID:float |
| +TitlePanel() |

|  |
| --- |
| PausePanel extend JPanel |
| -serialVersionUID:float |
| +PausePanel() |

|  |
| --- |
| GamePanel extend JPanel |
| -raster:Image  -width, height:int  -rasterGraphics: Graphics2D  +myFrame:JFrame  +allBlocks:ArrayList<Block>  +player:Player  +allEnemy:ArrayList<Enemy>  +allScreenObjects:ArrayList<ScreenObjects>  +allActors:ArrayList<Actor> |
| +GamePanel(w:int, h:int, frame:JFrame)  +drawGame():void  +gameLoop():void  +loadLevel(filename:String) |

|  |
| --- |
| GameOverPanel extend JPanel |
| -serialVersionUID:float |
| +DeathPanel() |

|  |
| --- |
| EndGamePanel extend JPanel |
| -serialVersionUID:float  +enemiesDefeated:int |
| +GameOverPanel() |