**Initialized the height variable to the value of the image.getHeight value in the loadPath method and also initialized the tiles array variable to the new width and height array value in the loadPath method located in the GameState class.**

**package** sonar;

**import** java.awt.Graphics;

**import** java.awt.image.BufferedImage;

**import** java.io.IOException;

**import** javax.imageio.ImageIO;

**import** sonar.gamestates.states.Inventory;

**import** sonar.gamestates.states.levels.stages.entities.SpriteManager;

**import** sonar.gamestates.states.levels.stages.entities.animations.tiles.Tile;

**import** sonar.gamestates.states.levels.stages.entities.animations.tiles.TileManager;

**public** **abstract** **class** GameState

{

//The base class Template for all the gamestates in the game.

**private** **static** StateBuilder *buildState*;

**private** **static** GSM *gsm*;

**private** **static** Keyboard *key*; //Can be made static

**private** **static** SpriteManager *smanage*; //Can be made static

**private** **static** TileManager *tmanage*; //Can be made static

**private** **int**[] tiles;

**private** **int** width, height;

**private** String identity;

**final** **static** **void** setGSM(GSM cGSM){*gsm* = cGSM;}

**final** **static** GSM getGSM(){**return** *gsm*;}

**protected** **final** **static** **void** createGameState(**final** StateBuilder cBuild)

{

*buildState* = cBuild;

**if**(*buildState*.stateType().equals("Single"))

{

*key* = **new** Keyboard(*getGSM*());

*smanage* = **new** SpriteManager(*buildState*.getIdentity());

*tmanage* = **new** TileManager(*smanage*);

}

**if**(!*buildState*.getIdentity().equals("Starter")) loadPath(path); //Added loadPath

}

**private** **void** loadPath(String path)

{

**try**

{

BufferedImage image = ImageIO.*read*(GameState.**class**.getResource(path));

width = image.getWidth();

height = image.getHeight();

tiles = **new** **int**[width \* height];

}

**catch** (IOException e)

{

e.printStackTrace();

}

}

/\*final static GameState createGameState(final StateBuilder cBuild)

{

buildState = cBuild;

if(buildState.stateType().equals("Single"))

{

//Identity needed

//We need to fix up the Keyboard

//We need to fix up the SpriteManager

//We need to fix up the Tilemanager

}

GameState state = new GameState(); //This is undefined unless it gets called

return state;

}\*/

**protected** GameState(StateBuilder buildState, String path, String identity, GSM gsm)

{

**this**.*buildState* = buildState;

**this**.*gsm* = gsm;

**this**.identity = identity;

**if**(buildState.stateType().equals("Single"))

{

*key* = **new** Keyboard(gsm);

*smanage* = **new** SpriteManager(identity);

*tmanage* = **new** TileManager(*smanage*);

}

**if**(!identity.equals("Starter")) createGameState(path);

}

**private** **void** createGameState(String path)

{

**try**

{

BufferedImage image = ImageIO.*read*(GameState.**class**.getResource(path));

width = image.getWidth();

height = image.getHeight();

tiles = **new** **int**[width \* height];

image.getRGB(0, 0, width, height, tiles, 0, width);

}

**catch** (IOException e){e.printStackTrace();}

}

**protected** **void** update()

{

}

**protected** **void** render(**int** xScroll, **int** yScroll, Screen screen, Graphics g)

{

screen.*setOffset*(xScroll, yScroll);

drawTiles(xScroll, yScroll, screen);

drawWeapons(screen);

drawEnergies(screen);

}

**private** **void** drawEnergies(Screen screen)

{

**if**(identity.equals("Inventory"))

{

Inventory inv = (Inventory) *gsm*.*getCurrentState*();

inv.renderEnergies(screen);

}

}

**private** **void** drawWeapons(Screen screen)

{

**if**(identity.equals("Inventory"))

{

Inventory inv = (Inventory) *gsm*.*getCurrentState*();

inv.renderWeapons(screen);

}

}

**public** **void** drawTiles(**int** xScroll, **int** yScroll, Screen screen)

{

**if**(*tmanage* != **null**)

{

**int** x0 = xScroll / *tmanage*.voidTile.getWidth(); //divided by 16

**int** x1 = (xScroll + screen.*getWidth*() + *tmanage*.voidTile.getWidth()) / *tmanage*.voidTile.getWidth();

**int** y0 = yScroll / *tmanage*.voidTile.getHeight();

**int** y1 = (yScroll + screen.*getHeight*() + *tmanage*.voidTile.getHeight()) / *tmanage*.voidTile.getHeight();

drawGameState(x0, x1, y0, y1, screen);

}

}

**private** **void** drawGameState(**int** x0, **int** x1, **int** y0, **int** y1, Screen screen)

{

**for**(**int** y = y0; y < y1; y++)

{

**for**(**int** x = x0; x < x1; x++)

{

getTile(x, y).render(x, y, screen);

}

}

}

Tile getTile(**int** x, **int** y)

{

Tile tile = *tmanage*.voidTile;

**if**(x < 0 || y < 0 || x >= width || y >= height) **return** tile;

**if**(identity.equals("Menu"));

**if**(identity.equals("Password")) tile = invpassCommons(identity, x, y, tile);

**if**(identity.equals("Inventory")) tile = invpassCommons(identity, x, y, tile);

**if**(identity.equals("Starter"))

{

**if**(tileColour(x, y) == TileManager.***grassColour***) tile = *tmanage*.grass;

}

**return** tile;

}

**private** Tile invpassCommons(String identity, **int** x, **int** y, Tile tile)

{

**if**(tileColour(x, y) == TileManager.***cornerUpLeftColour***) tile = *tmanage*.cornerUpLeft;

**if**(tileColour(x, y) == TileManager.***cornerUpRightColour***) tile = *tmanage*.cornerUpRight;

**if**(tileColour(x, y) == TileManager.***cornerDownLeftColour***) tile = *tmanage*.cornerDownLeft;

**if**(tileColour(x, y) == TileManager.***cornerDownRightColour***) tile = *tmanage*.cornerDownRight;

**if**(tileColour(x, y) == TileManager.***lineUpColour***) tile = *tmanage*.lineUp;

**if**(tileColour(x, y) == TileManager.***lineDownColour***) tile = *tmanage*.lineDown;

**if**(tileColour(x, y) == TileManager.***lineLeftColour***) tile = *tmanage*.lineLeft;

**if**(tileColour(x, y) == TileManager.***lineRightColour***) tile = *tmanage*.lineRight;

**if**(tileColour(x, y) == TileManager.***squareColour***) tile = *tmanage*.square;

**return** tile;

}

**private** **int** tileColour(**int** x, **int** y){**return** tiles[x + y \* width];}

StateBuilder getBuildState(){**return** *buildState*;}

**protected** GSM getGsm(){**return** *gsm*;}

**public** Keyboard getKey(){**return** *key*;}

**protected** **void** resetKeyboard(){*key* = **null**;}

**protected** **void** initKey(){*key* = **new** Keyboard(*gsm*);}

**public** SpriteManager getSmanage(){**return** *smanage*;}

**public** TileManager getTmanage(){**return** *tmanage*;}

**protected** **void** resetSmanage(){*smanage* = **null**;}

**protected** **void** setSmanage(SpriteManager manage){*smanage* = manage;}

**protected** **void** resetTmanage(){*tmanage* = **null**;}

**protected** **void** setTmanage(TileManager manage){*tmanage* = manage;}

**protected** String getIdentity(){**return** identity;}

**public** **void** setTiles(**int**[] tiles){**this**.tiles = tiles;}

**public** **void** setWidth(**int** value){width = value;}

**public** **void** setHeight(**int** value){height = value;}

**void** setBuildState(StateBuilder state){*buildState* = state;}

}