**Added the key variable to the createGameState method and also added an if statement to check that we are not in the starter stage in the createGameState 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** Keyboard key;

**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"));

}

/\*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;}

}