## Game Project Document

This game scenario consists of a character trapped into a City and needs to score coins and collect gems as much as possible to live without being caught in the eyes of the vampires .In this game project I have made my game window resolution into 800 x 600 and added a pixelated city background which already had many layers to it. I have built this game by using several features such as Collision and used Static Body.


I have added levels in my project which are grey platforms so that when the character move it will more efficient collect as much points.

```
Shape shape = new BoxShape( halfWidth: 11,  halfHeight: 0.5f);
StaticBody ground = new StaticBody( w: this, shape);
ground.setPosition(new Vec2( x: 0f,  y: -11.5f));
Shape platformShape = new BoxShape( halfWidth: 3.5f,  halfHeight: 0.5f);
StaticBody platform1 = new StaticBody( w: this, platformShape);
platform1.setPosition(new Vec2( x: -8,  y: -5.5f));
StaticBody platform2 = new StaticBody( w: this, platformShape);
platform2.setPosition(new Vec2( x: 8,  y: 5.5f));
StaticBody platform3 = new StaticBody( w: this, platformShape);
platform3.setPosition(new Vec2( x: -10,  y: 9.8f));
```
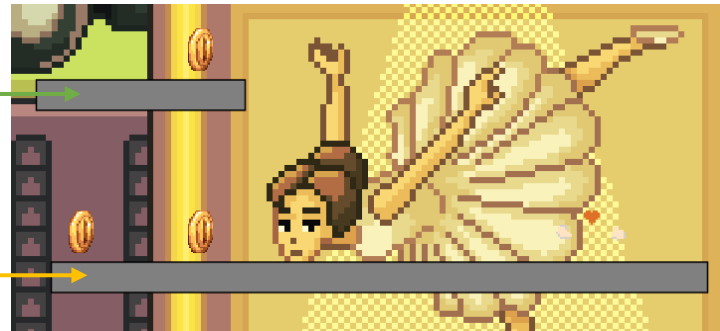

Assets

My characters and collectibles are gifs and wanted to have them as gifs because the characters shouldn't look stationary when the game is played .I have created extensible groups of game assets such as platforms, enemies, player and collectibles such as the coins and gems.
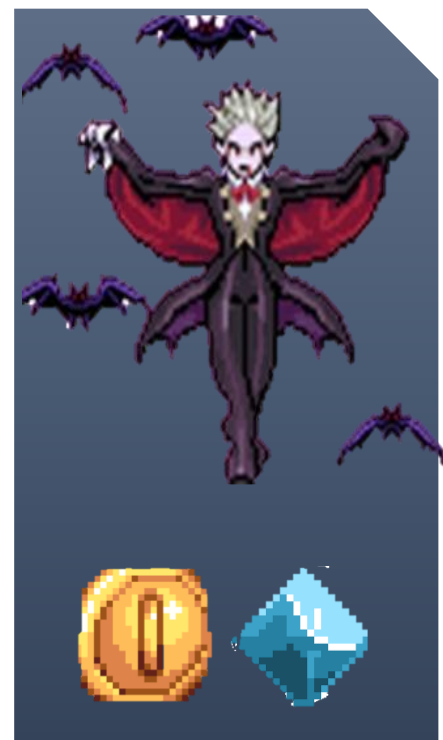
Controls with keyboard

Throughout the game ,the characters are able to move and controllable using the keyboard.My player can jump in mutliples by using spacebar multiple times and can move to the right and left using the arrow keys.

```java
private static final float WALKING_SPEED = 8;
private static final float JUMPING_SPEED = 12;
private Player player;

public PlayerController(Player player ) { this.player = player; }

@Override
public void keyPressed(KeyEvent e) {
    int code = e.getKeyCode();
    // other key commands omitted
    if (code == KeyEvent.VK_LEFT) {
        player.startWalking(-WALKING_SPEED);
    } else if (code == KeyEvent.VK_RIGHT) {
        player.startWalking(WALKING_SPEED);
    } else if (code == KeyEvent.VK_SPACE) {
        player.jump(JUMPING_SPEED);
    }
}
```

Collectibles

The coins are replacement of lives and the more coins scored the more lives the player would have.As the player collects the coin ,an increase in points would appear on the left corner of the screen.Therefore the score consistently adds up   and would see collectibles appearing throughout game .

Collision

The character collides with the coin to score and plpayes the game.In this project I have used a coin gif to create an constant moving effect and once the character collifes the coin that has been been collected or scored,disappears. As a result the score consistently adds up +1 when the player collects it. As a result the game responds to collisions between bodies such player vs. collectible.

```java
@Override
public void collide(CollisionEvent collisionEvent) {
    if (collisionEvent.getOtherBody() instanceof game.Coin) {
        System.out.println("collided");
        player.setCoin(player.getCoin() + 1);
        collisionEvent.getOtherBody().destroy();
    }
}
```

Player Statistic

I have used the World's paint Foreground method to display my game and evidently show the player statistic. This is done by showing how many collectibles the player has collected such as the coins and gems .As well as that I have used text to represent the player statistic.

```java
@Override
protected void paintForeground(Graphics2D g) {
    g.setColor(Color.white);
    g.drawString( "Coin: " + player.getCoin(), 5, 30);
    g.setFont(new Font( " Serif", Font.BOLD, 80));
```

Coin: o
Lives: 3
Bluegem: o

Next Step is to add few graphic Icons that can be displayed in the Player's Statistic for example lives ,coins and Bluegems.I would like to make the player use a weapon to attack the enemy and destroy and whenenver the character collides with the Enemy(Vampire),the character looses its life .As a result another colliosn has to be made.Therefore resulting in a low lifetime.

To display the multiple statistic I will be including small icons to show the player's health which consists of wider range of collision. As well as that the character (player)will be attacking the enemy(vampire_ with a feature so then I can include the health bar for the enemy too.