**Floor Casting Using Numpy**

**Project by:**

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**Project Details:**

**Programming Language:** Python (Pygame, Numpy)

**Code editor:** Visual Studio Code

**Project Statement:  
 ‘Floor casting’** is a popular technique in video game development for pseudo 3D games that use 2D graphics but want to create the illusion of depth and dimensionality.

By using mathematical formulas that take into account the position of the player and the camera angle, the game can determine which tiles to display and how to adjust their appearance to create the illusion of depth and perspective.

To further enhance the realism of the floor casting, certain trigonometric and logical formulations are used to calculate the lighting and shading effects on the floor. This allows the game to create the appearance of shadows, highlights, and reflections, which can add to the immersive experience for the player.

One of the advantages of floor casting is that it can create a realistic-looking floor without compromising the game's performance or speed. Using actual 3D simulation environments can be resource-intensive and require more processing power, which can slow down the game's performance. Floor casting, on the other hand, can create the illusion of depth and dimensionality without requiring as many resources.

**My GitHub Repository:**

<https://github.com/IAmACodeGeek/Floor-Casting-Using-Numpy-Python>