Pygame is a great way to introduce game development. Let's start with a basic project that includes setting up the game window, a player character that can move around, and a goal to reach. Here’s a step-by-step guide:

**Prerequisites**

* Install Python (version 3.x –> done!)
* Install Pygame (pip install pygame)

**Step-by-Step Instructions**

**1. Setting Up the Project (in Visual Studio Code)**

1. **Create a Project Folder:** Create a new folder for your project, e.g., pygame\_project.
2. **Create Main Python File:** Inside the project folder, create a new file called main.py.
3. **Set up code in main.**py as follows

import pygame

import sys

pygame.init()

# Screen dimensions

SCREEN\_WIDTH = 800

SCREEN\_HEIGHT = 600

# Create the screen

screen = pygame.display.set\_mode((SCREEN\_WIDTH, SCREEN\_HEIGHT))

pygame.display.set\_caption("Simple Pygame for Highschoolers")

# Colors (R, G, B)

WHITE = (255, 255, 255)

BLACK = (0, 0, 0)

GREEN = (0, 255, 0)

# Player settings

player\_size = 50

player\_color = BLACK

player\_pos = [SCREEN\_WIDTH // 2, SCREEN\_HEIGHT // 2]

player\_speed = 5

# Goal settings

goal\_size = 50

goal\_color = GREEN

goal\_pos = [100, 100]

# Main game loop

running = True

while running:

for event in pygame.event.get():

if event.type == pygame.QUIT:

running = False

# Player movement

keys = pygame.key.get\_pressed()

if keys[pygame.K\_LEFT]:

player\_pos[0] -= player\_speed

if keys[pygame.K\_RIGHT]:

player\_pos[0] += player\_speed

if keys[pygame.K\_UP]:

player\_pos[1] -= player\_speed

if keys[pygame.K\_DOWN]:

player\_pos[1] += player\_speed

# Restrict player to screen boundaries

if player\_pos[0] < 0:

player\_pos[0] = 0

if player\_pos[0] > SCREEN\_WIDTH - player\_size:

player\_pos[0] = SCREEN\_WIDTH - player\_size

if player\_pos[1] < 0:

player\_pos[1] = 0

if player\_pos[1] > SCREEN\_HEIGHT - player\_size:

player\_pos[1] = SCREEN\_HEIGHT - player\_size

# Collision detection

player\_rect = pygame.Rect(\*player\_pos, player\_size, player\_size)

goal\_rect = pygame.Rect(\*goal\_pos, goal\_size, goal\_size)

if player\_rect.colliderect(goal\_rect):

print("You reached the goal!")

running = False

# Fill the screen with white

screen.fill(WHITE)

# Draw the player

pygame.draw.rect(screen, player\_color, (\*player\_pos, player\_size, player\_size))

# Draw the goal

pygame.draw.rect(screen, goal\_color, (\*goal\_pos, goal\_size, goal\_size))

# Update the display

pygame.display.flip()

pygame.quit()

sys.exit()

**2. Execute your code from Visual Studio Code environment to run your program!**