

Pygame Assignment

Assignment Title: Build Your First Pygame Project

Objective:

This assignment will help you understand **Pygame basics**, including creating a window, handling user input, drawing shapes, and moving objects. By completing this, you will gain hands-on experience in game development.

Task 1: Create a Pygame Window

- Create a **500x400** window using Pygame.
- Set the window title to **"My First Pygame Project"**.
- Fill the screen with a **color of your choice**.
- Display the window until the user **closes** it.

✓ **Bonus Challenge:** Change the background color when the user presses the **space bar**.

Task 2: Draw Shapes in Pygame

- Draw at least **three** different shapes on the screen. Example:
 - A **red rectangle**.
 - A **blue circle**.
 - A **green line**.

✓ **Bonus Challenge:** Draw a **house** using rectangles and triangles.

Task 3: Move an Object with Arrow Keys

- Create a **square** or **circle** on the screen.
- Move the shape **left, right, up, and down** using arrow keys.

✓ **Bonus Challenge:** Change the shape's **color** when moving in different directions.

Task 4: Create a Simple Catch-the-Ball Game

- A **ball** should fall from the top of the screen.
- The **player (a rectangle)** should move left and right using arrow keys to catch the ball.
- If the player catches the ball, the score should increase.
- If the ball reaches the bottom, reset it to the top.

✅ **Bonus Challenge:** Add **sound effects** when the ball is caught!

Task 5: Build Your Own Mini Game

- Use everything you have learned to build a **small game!**
- Some ideas:
 - A **maze game** where a player moves to reach the goal.
 - A **car racing game** where obstacles appear randomly.
 - A **shooting game** where a player shoots falling objects.

✅ **Bonus Challenge:** Add **collision detection** to interact with objects.

Submission Guidelines

- Submit the Screenshots of your work.
 - Save your tasks in separate **Python (.py) files**.
 - Add **comments** in your code to explain what each part does.
 - Include a **README.txt** explaining how your game works. (Not necessary)
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Extra Credit:

- Add **background music** or **sound effects**.
 - Use **images** instead of basic shapes.
 - Implement a **scoring system**.
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 **Deadline:** —

 **Have fun coding your first game!**

