

Pygame Fun Lesson Plan: Catch the Point Game!

Goal of Today's Game

- Move a player on the screen
- Catch the green "point" to score
- Win when you reach 3 points!

Part 1: Setting Up Pygame

Import pygame, sys, random

Initialize Pygame

Create the game window

```
import pygame
import sys
import random

pygame.init()
screen = pygame.display.set_mode((800, 600))
pygame.display.set_caption("My First Pygame Window!")
```

Notes

- pygame.init() starts everything.
- The screen size is 800 pixels wide, 600 pixels tall.

Part 2: Creating the Player and Point

- Make a red rectangle (the player)
- Make a green rectangle (the point)
- Set up colors and movement speed

```
player = pygame.Rect(300, 200, 50, 50)
point = pygame.Rect(100, 50, 50, 50)
player_speed = 1

WHITE = (255, 255, 255)
RED = (255, 0, 0)
GREEN = (0, 199, 100)
```

Notes

- pygame.Rect(x, y, width, height) makes rectangles easily!
- Colors are made using RGB values.

Pygame Fun Lesson Plan: Catch the Point Game!

Part 3: Adding the Score

- Start the score at 0
- Create a font to display the score

```
score = 0
font = pygame.font.SysFont(None, 36)
```

Notes

- SysFont(None, 36) uses the default font, size 36.

Part 4: Moving the Player

- Detect arrow key presses
- Move the player

```
keys = pygame.key.get_pressed()
if keys[pygame.K_LEFT]:
    player.x -= player_speed
if keys[pygame.K_RIGHT]:
    player.x += player_speed
if keys[pygame.K_UP]:
    player.y -= player_speed
if keys[pygame.K_DOWN]:
    player.y += player_speed
```

Notes

- key.get_pressed() checks what keys are being held down.

Part 5: Keeping Player On-Screen

- Prevent the player from leaving the window

```
if player.left < 0:
    player.left = 0
if player.right > 800:
    player.right = 800
if player.top < 0:
    player.top = 0
if player.bottom > 600:
    player.bottom = 600
```

Notes

Pygame Fun Lesson Plan: Catch the Point Game!

- Always keep your player inside the visible screen!

Part 6: Catching the Point

- Check if player touches point
- Add 1 to score
- Move point to random new location

```
if player.colliderect(point):  
    score += 1  
    point.x = random.randint(0, 750)  
    point.y = random.randint(0, 550)
```

Notes

- Keep new points inside the screen!

Part 7: Winning the Game

- If score ≥ 3 , show 'YOU WIN!!'
- Change background color to green

```
if score >= 3:  
    screen.fill(GREEN)  
    win_text = font.render("YOU WIN!!", True, WHITE)  
    screen.blit(win_text, (300, 300))  
else:  
    screen.fill(WHITE)  
    pygame.draw.rect(screen, RED, player)  
    pygame.draw.rect(screen, GREEN, point)  
    score_text = font.render(f"Score {score}", True, (0, 0, 0))  
    screen.blit(score_text, (0, 0))
```

Notes

- Only draw the player and point when still playing.

Part 8: Updating the Screen

- Refresh the screen every frame

```
pygame.display.update()
```

Notes

- update() redraws everything you've changed!

Pygame Fun Lesson Plan: Catch the Point Game!

Full Game Loop Checklist

- Handle events (like quitting)
- Move player
- Keep player inside
- Check if player caught point
- Draw everything
- Update the screen

End of Lesson

Congratulations! You've made your first mini-game in Pygame!

What's next?

- Try adding a timer
- Make the player faster
- Add more points to catch!

Good luck and have fun!