

# INTRODUCTION TO PYGAME

GameDev cell - EITC

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## What's PyGame :

Pygame is a Python library for game development, making it easier to create 2D games. It provides modules for handling graphics, sound, input, and more, allowing beginners to start building simple games quickly.

To install Pygame in your machine, run the following command:

### Install Pygame

```
pip install pygame
```

For more information, see the pygame documentation : <https://www.pygame.org/docs/>

## Learning Objectives for Pygame Basics Workshop

- Implement the basic code of the Pygame library.
- Understand graphics basics, including pixels, RGB colors, etc.
- Draw simple shapes using `pygame.draw` from Pygame.
- Utilize basic shapes to create more complex and intricate graphical designs.

## Basic pygame code

```
import pygame

# Initialize Pygame
pygame.init()

# Set up display
width, height = 800, 600
screen = pygame.display.set_mode((width, height))
pygame.display.set_caption("My First Pygame Program")

Running = True

# Main game loop
while Running:
    for event in pygame.event.get():
        if event.type == pygame.QUIT:
            Running = False
```

1. Create a new project titled 'Intro-Pygame', Create a main Python file, copy the provided code into it, and execute the program.
2. add the following code, then change values.

```
screen.fill((255, 0, 0))
```

3. to update changes, use :

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

## Draw shapes in Pygame:

1. Draw a Line:

```
pygame.draw.line(surface, color, start_pos, end_pos, width=1)
```

2. Draw a Rectangle:

```
pygame.draw.rect(surface, color, rect, width=0)
```

3. Draw a Circle:

```
pygame.draw.circle(surface, color, center, radius, width=0)
```

4. Draw an Ellipse:

```
pygame.draw.ellipse(surface, color, rect, width=0)
```

5. Draw a Polygon:

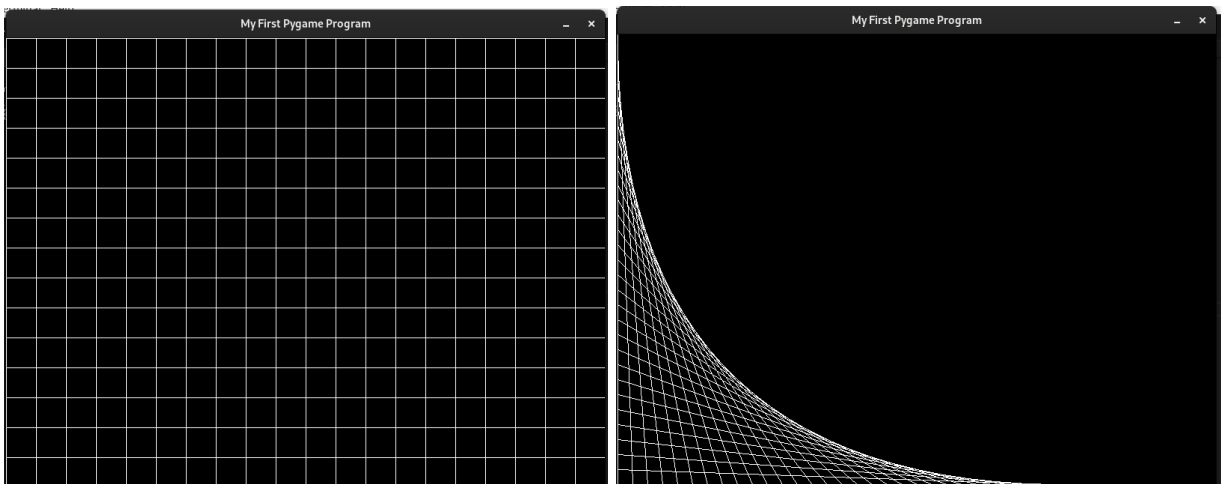
```
pygame.draw.polygon(surface, color, points, width=0)
```

6. Draw an Arc:

```
pygame.draw.arc(surface, color, rect, start_angle, stop_angle, width=0)
```

## Exercises:

1. By using lines try to draw the following forms.



2. Try to draw the following shape, using only circles :

