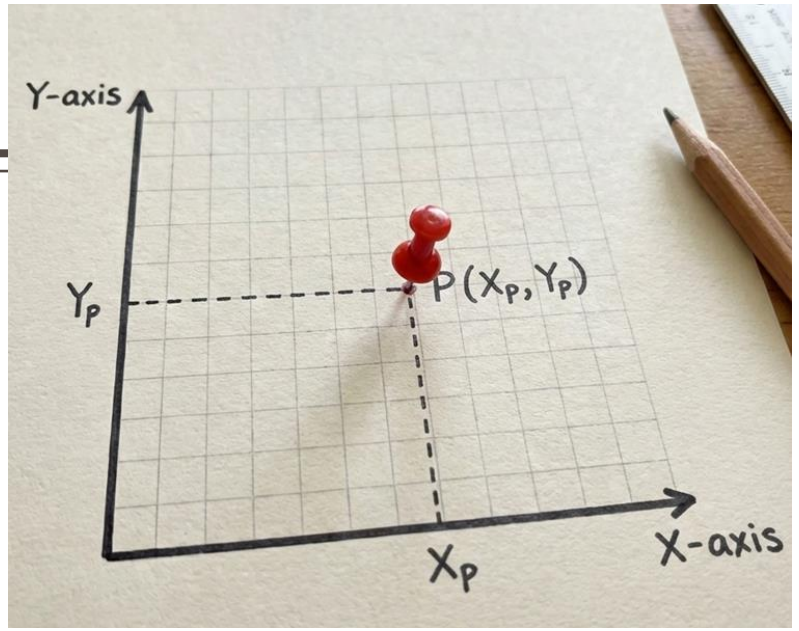
Summary of Lesson



✅ **Circle**

patches.Circle((Xp, Yp), radius=r, facecolor="colorname")

✅ **Rectangle**

patches.Rectangle((Xp, Yp), width=w, height =h, facecolor="colorname", angle=degree)

✅ **Ellipse (Oval)**

patches.Ellipse((Xp, Yp), width=w, height=h, facecolor="colorname", angle=degree)

✅ **Regular Polygon**

patches.RegularPolygon((Xp, Yp), numVertices=n, radius=r, facecolor="colorname", angle =degree)

Single for loop

```
for i in range(start, stop, step):
    instruction_1
    instruction_2
```

Important Notes:

- **Indentation matters**: All instructions inside the loop must be indented.
- **Ending the loop**: Stop indenting to exit the loop. The next line aligned to the left is outside the loop.
- **range(start, stop, step)** generates numbers (integer) from start to stop, incrementing by step.

Nested for loops

```
for i in range(start-1, stop-1, step-1):
    instruction_1
    instruction_2
    for j in range (start-2, stop-2, step-2):
        instruction_2
        instruction_2
```

- **Important Notes**:
  - **Indentation matters**: All instructions inside the loop must be indented.
  - **Ending the loop**: Stop indenting to exit the loop. The next line aligned to the left is outside the loop.
  - **range(start, stop, step)** generates numbers (integer) from start to stop, incrementing by step.

Nested for loops vs Sequential for loops

```
for i in range(start-1, stop-1, step-1):
    instruction_1
    instruction_2
    for j in range (start-2, stop-2, step-2):
        instruction_2
        instruction_2
```

```
for i in range(start-1, stop-1, step-1):
    instruction_1
    instruction_2
for j in range (start-2, stop-2, step-2):
    instruction_2
    instruction_2
```

Nested for loops vs Sequential for loops

```
for i in range(start-1, stop-1, step-1):
    instruction_1
    instruction_2
    for j in range (start-2, stop-2, step-2):
        instruction_2
        instruction_2
```

Nested for loops runs one loop inside another loop. Inner loop repeats every time the outer loop runs once.

```
for i in range(start-1, stop-1, step-1):
    instruction_1
    instruction_2

for j in range (start-2, stop-2, step-2):
    instruction_2
    instruction_2
```

Sequential for loops run one after another.

Access Computer

💻 **Login to the Computer**

Username: .\guest
Password: Carbondale!

🚀 **Launching Python Jupyter Notebook**

- Click the Jupyter icon in the bottom menu to launch Jupyter Notebook.
- Once it opens, you are ready to begin coding!