Little CAD 2D

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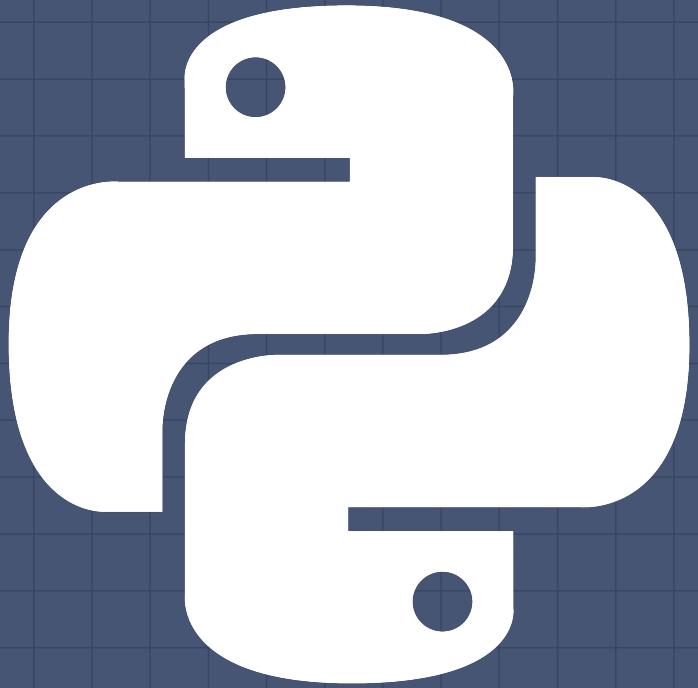
DESCRIPCIÓN DEL PROGRAMA



Ejecución del programa

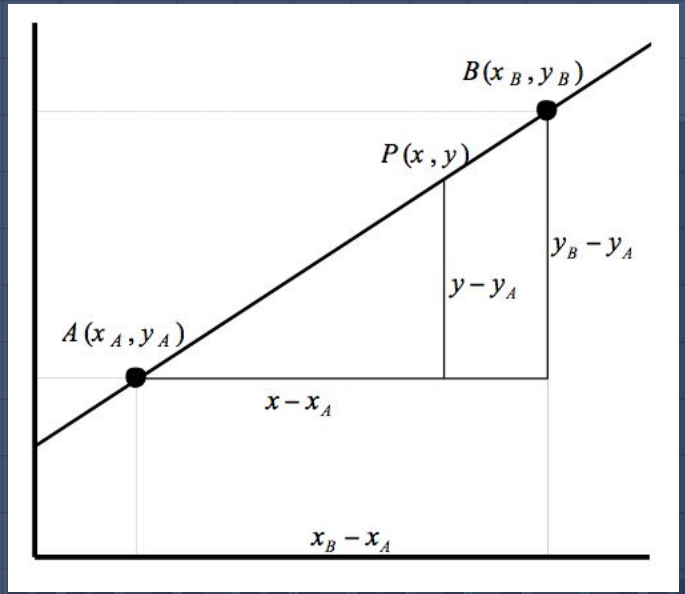
Funciones de formas rectas

Fórmulas usadas:

Ec. de la Recta

m=Y2-Y1/X2-X1

Y=mx+b



FUNCIONES DE RECTA Y RECTÁNGULO

```
def agregar_linea():
    print("Ingrese la coordenada de origen" )
    x1 = int(input("Ingrese x: "))
    y1 = int(input("Ingrese y: "))
    print("Ingrese la coordenada final" )
    x2 = int(input("Ingrese x: "))
    y2 = int(input("Ingrese y: "))
    agregar_segmento(x1 , y1, x2, y2)
```

```
def agregar_rectangulo_cuadrado ():
    print("Ingrese la coordenada de origen:" )
    x1 = int(input("Ingrese x: "))
    y1 = int(input("Ingrese y: "))
    b = int(input("Ingrese la base: "))
    h = int(input("Ingrese la altura: "))
    agregar_segmento(x1 , y1, x1 + b - 1, y1)
    agregar_segmento(x1 + b - 1, y1, x1 + b - 1, y1
+ h - 1)
    agregar_segmento(x1 + b - 1, y1 + h - 1, x1, y1
+ h - 1)
    agregar_segmento(x1 , y1 + h - 1, x1, y1)
```

TRIÁNGULO

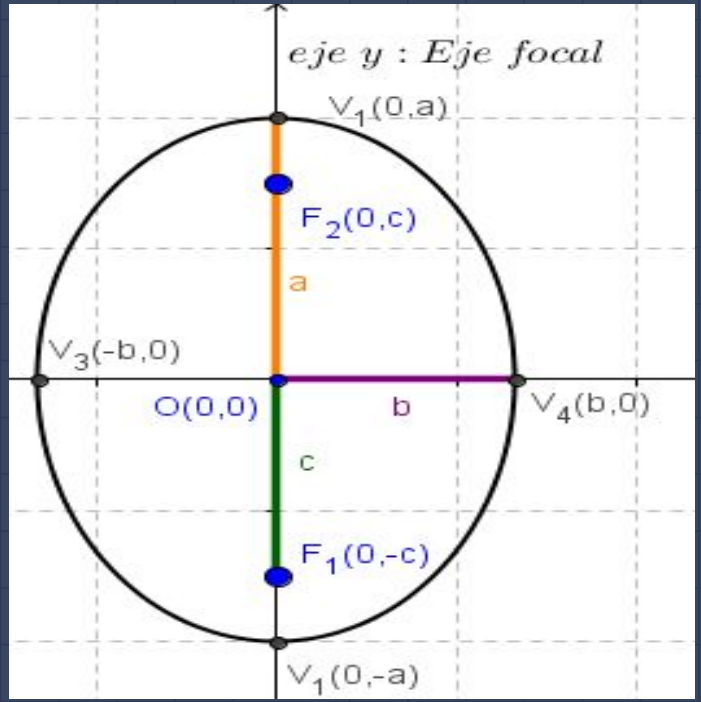
```
def agregar_triangulo():
    print("Ingrese la coordenada de origen")
    x1 = int(input("Ingrese x: "))
    y1 = int(input("Ingrese y: "))
    b = int(input("Ingrese la base: "))
    h = int(input("Ingrese la altura: "))
    agregar_segmento(x1, y1, x1 + b - 1, y1)
    agregar_segmento(x1 + b - 1, y1, x1 + b//2, y1 + h - 1)
    agregar_segmento(x1 + b - 1 - b//2, y1 + h - 1, x1, y1)
```

```
def agregar_segmento(x1, y1, x2, y2):
    x = x2 - x1
    y = y2 - y1
    if x1 == x2:
        for i in range(abs(y)):
            matriz[min(y1, y2) + i][x1] = "X"
        matriz[max(y1, y2)][x1] = "X"
    else:
        m = float(y / x)
        rango = max(abs(x), abs(y))
        iterador = float((x / abs(x)) * (abs(x) / rango))
        ix = 0
        for i in range(rango):
            iy = float(m * ix)
            matriz[round(y1 + iy)][round(x1 + ix)] = "X"
            ix += iterador
        matriz[y2][x2] = "X"
```

FORMAS CIRCULARES

Elipse y círculo:

Ec. de la Elipse



FUNCIÓN DEL ELIPSE


```
def agregar_elipse_circulo():
    x1 = int(input("Ingrese x: "))
    y1 = int(input("Ingrese y: "))
    a = int(input("Radio base: "))
    b = int(input("Radio altura: "))
    rango = 1000
    #max(abs(2 * a), abs(2 * b))
    iterador = float(abs(2 * a) / rango)
    ix = 0 - a
    for i in range(rango):
        iy = (b / a) * sqrt((a **  2) - (ix ** 2))
        matriz[round(y1 + iy)][round(x1 + ix)] = "X"
        matriz[round(y1 - iy)][round(x1 + ix)] = "X"
        ix += iterador
    matriz[y1][x1 + a] =  "X"
```

THANKS!