Mid-Point Line Generation Algorithm

April 2, 2025

```python
[1]: import matplotlib.pyplot as plt
```

```python
[3]: def midPoint(X1, Y1, X2, Y2):
         dx = X2 - X1
         dy = Y2 - Y1

         d = 2 * dy - dx
         x = X1
         y = Y1

         x_coords = [x]
         y_coords = [y]

         while (x < X2):
             x = x + 1

             if (d < 0):
                 d = d + 2 * dy
             else:
                 d = d + (dy - dx)
                 y = y + 1

             x_coords.append(x)
             y_coords.append(y)
         plt.plot(x_coords, y_coords)
         plt.xlabel("X-axis")
         plt.ylabel("Y-axis")
         plt.title("Midpoint Line Algorithm")
         plt.grid(True)
         plt.show()
```

```python
[4]: if __name__ == '__main__':
         X1 = 3
         Y1 = 3
         X2 = 5
         Y2 = 5
         midPoint(X1, Y1, X2, Y2)
```

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