

4)

Code for graphs

Points calculation for AIMD, MIAD, MIMD and AIAD

```
1  import matplotlib.pyplot as plt
2  import numpy as np
3
4  def AIMD(x, y):
5      xy_points = [[x, y]]
6      for i in range(0, 9):
7          pt = xy_points[-1]
8          if x + y < 50:
9              x+=6
10             y+=6
11         else:
12             x/=2
13             y/=2
14         xy_points.append([x, y])
15     return xy_points
16
17
18 def MIAD(x, y):
19     xy_xy_points = [[x, y]]
20     for i in range(0, 9):
21         pt = xy_points[-1]
22         if x + y < 50:
23             x*=1.5
24             y*=1.5
25         else:
26             x-=6
27             y-=6
28         xy_points.append([x, y])
29     return xy_points
30
```

```
1 def MIMD(x, y):
2     xy_points = [[x, y]]
3     for i in range(0, 9):
4         pt = xy_points[-1]
5         if x + y < 50:
6             x*=1.2
7             y*=1.2
8         else:
9             x/=1.9
10            y/=1.9
11        xy_points.append([x, y])
12    return xy_points
13
14 def AIAD(x, y):
15     xy_points = [[x, y]]
16     for i in range(0, 9):
17         pt = xy_points[-1]
18         if x + y < 50:
19             x+=10
20             y+=10
21         else:
22             x-=6
23             y-=6
24        xy_points.append([x, y])
25    return xy_points
26
```

Graph Plotting code

```
#xy_points = MIAD(30, 25)
#xy_points = AIMD(5, 50)
#xy_points = MIMD(20, 45)
xy_points = AIAD(10, 25)

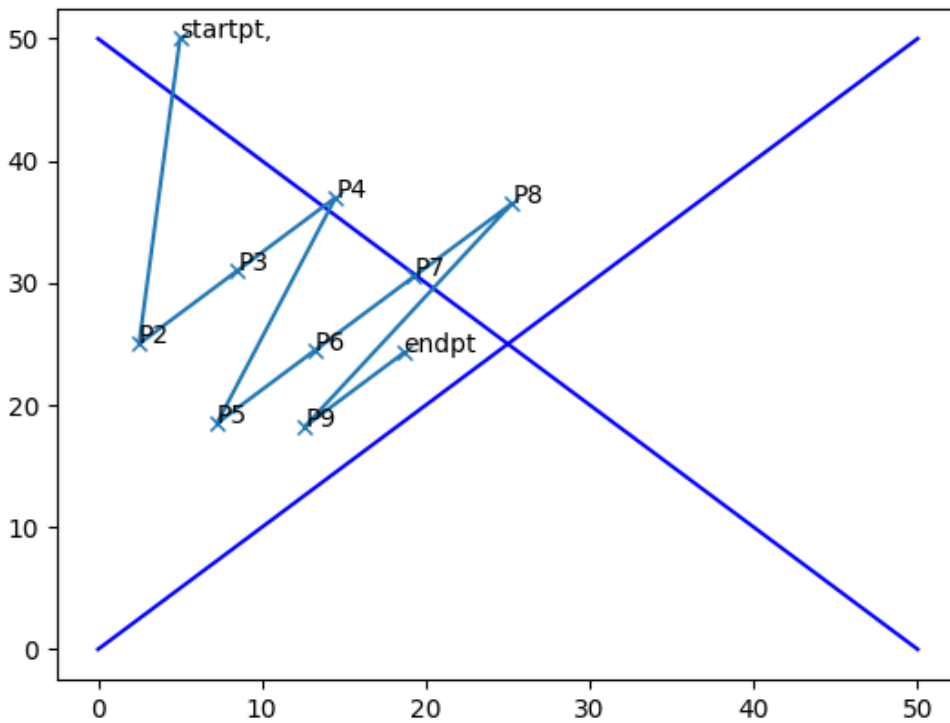
plotinput = np.transpose(xy_points)
annotations = ["startpt,", "P2", "P3", "P4", "P5", "P6", "P7", "P8", "P9", "endpt"]

x = [0, 50]
y = [0, 50]
x1 = [0, 50]
y1 = [50, 0]
plt.plot(x, y, color = 'b')
plt.plot(x1, y1, color = 'b')

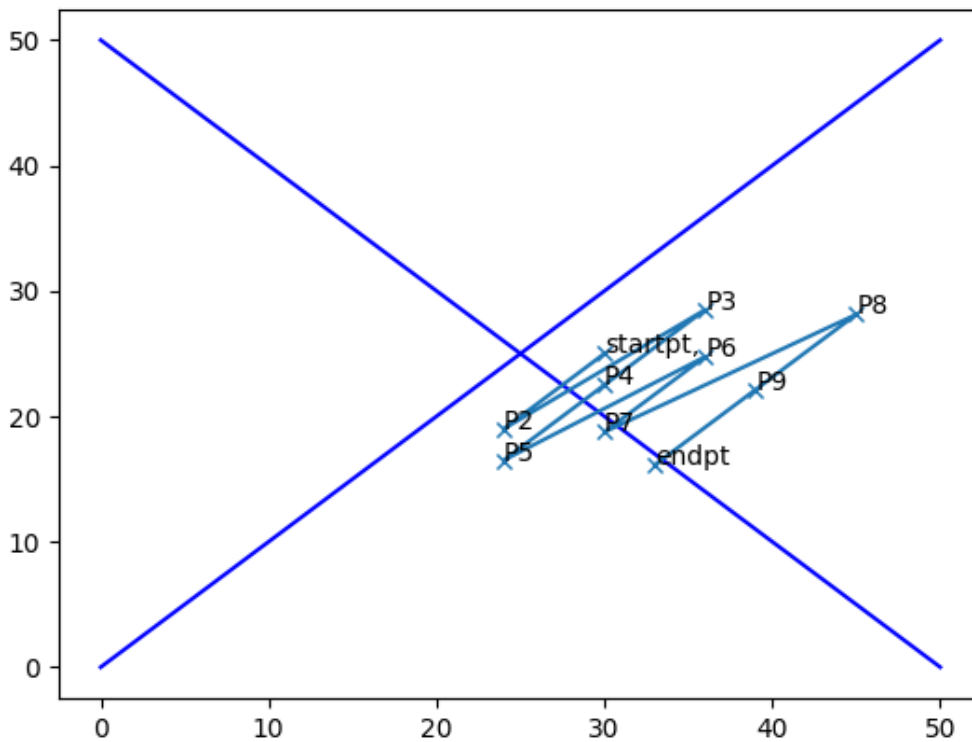
plt.plot(plotinput[0], plotinput[1], marker = 'x')
for i, label in enumerate(annotations):
    pt = xy_points[i]
    plt.annotate(label, (pt[0], pt[1]))
plt.waitforbuttonpress
```

Plots in next page

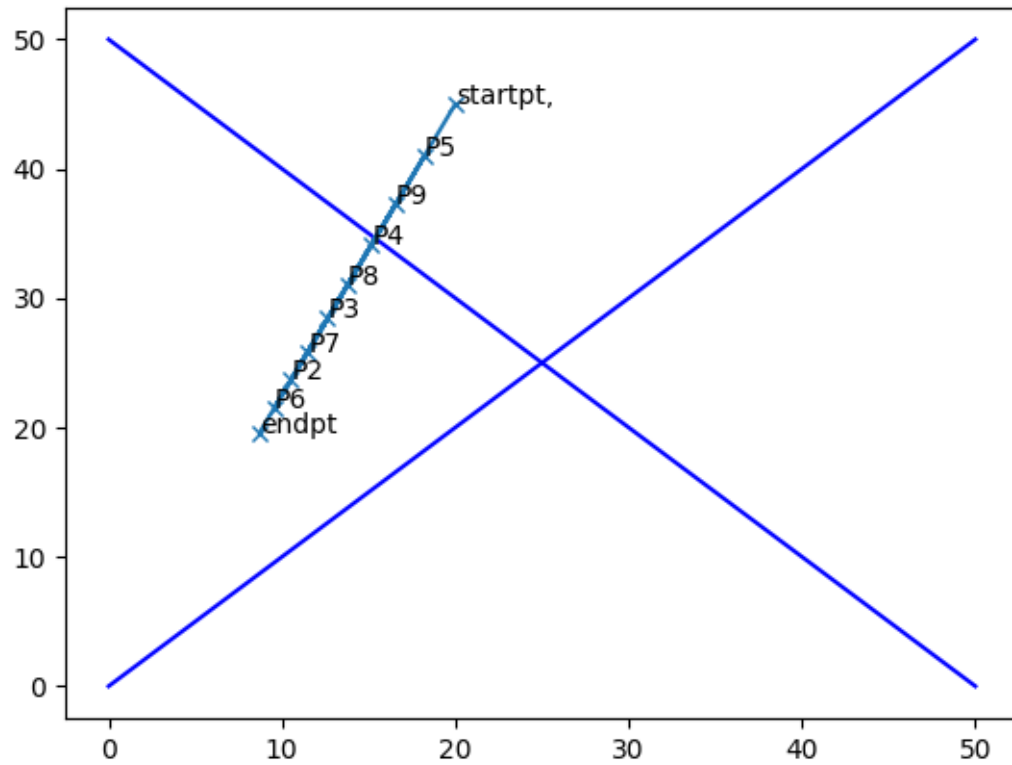
AIMD – Coverging towards optimum solution - FAIR



MIAD – Not Converging towards optimum solution, in-fact it is diverging – NOT FAIR



MIMD – Not Converging towards optimum solution – NOT FAIR



AIAD – Not converging towards optimum solution – NOT FAIR

