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In [1]: import math
        from lx16a import *
        import time
        from math import sin, cos
        import matplotlib.pyplot as plt
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In [11]: for _ in range(1):
          # Move front and back legs from start to point 1 - knee moving to max, ankle moving to min
          servo1_angle1_time = 0.10880398750305176
          servo1_angle1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle1_time + math.pi))
          #servo1.move(servo1_angle1, 100)
          print(f"Servo 1 is at {servo1_angle1} degrees. Moving to min.")
          servo2_angle1_time = 0.10965418815612793
          servo2_angle1 = 88.80 + (20 * math.sin((2 * math.pi / 1) * servo2_angle1_time + math.pi))
          #servo2.move(servo2_angle1, 100)
          print(f"Servo 2 is at {servo2_angle1} degrees. Moving to max.")
          servo5_angle1_time = 0.10376381874084473
          servo5_angle1 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle1_time + math.pi))
          #servo5.move(servo5_angle1, 100)
          print(f"Servo 5 is at {servo5_angle1} degrees. Moving to min.")
          servo6_angle1_time = 0.10975313186645508
          servo6_angle1 = 172.80 + (20 * math.sin((2 * math.pi / 1) * servo6_angle1_time + math.pi))
          #servo6.move(servo6_angle1, 100)
          print(f"Servo 6 is at {servo6_angle1} degrees. Moving to max.\n")
          time.sleep(0.25)

          print("Front and back legs from start to point 1.\n")

          # Move front and back legs from point 1 to point 2 - knee at max, ankle at min
          servo1_angle2_time = 0.27066493034362793
          servo1_angle2 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle2_time + math.pi))
          #servo1.move(servo1_angle2, 100)
          print(f"Servo 1 is at {servo1_angle2} degrees. At min.")
          servo2_angle2_time = 0.27481818199157715
          servo2_angle2 = 88.80 + (20 * math.sin((2 * math.pi / 1) * servo2_angle2_time + math.pi))
          #servo2.move(servo2_angle2, 100)
          print(f"Servo 2 is at {servo2_angle2} degrees. At max.")
          servo5_angle2_time = 0.2665979862213135
          servo5_angle2 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle2_time + math.pi))
          #servo5.move(servo5_angle2, 100)
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print(f"Servo 5 is at {servo5_angle2} degrees. At min.")
servo6_angle2_time = 0.26810288429260254
servo6_angle2 = 172.80 + (20 * math.sin((2 * math.pi / 1) * servo6_angle2_time + math.pi))
#servo6.move(servo6_angle2, 100)
print(f"Servo 6 is at {servo6_angle2} degrees. At max.\n")
time.sleep(0.25)

print("Front and back legs from point 1 to point 2.\n")

# Move left and right legs from start to point 1 - moving knee to max, ankle to min
servo3_angle1_time = 0.1106269359588623
servo3_angle1 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle1_time + math.pi))
#servo3.move(servo3_angle1, 100)
print(f"Servo 3 is at {servo3_angle1} degrees. Moving to min.")
servo4_angle1_time = 0.11086916923522949
servo4_angle1 = 153.84 + (20 * math.sin((2 * math.pi / 1) * servo4_angle1_time + 0))
#servo4.move(servo4_angle1, 100)
print(f"Servo 4 is at {servo4_angle1} degrees. Moving to max.")
servo7_angle1_time = 0.11015701293945312
servo7_angle1 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle1_time + math.pi))
#servo7.move(servo7_angle1, 100)
print(f"Servo 7 is at {servo7_angle1} degrees. Moving to min.")
servo8_angle1_time = 0.10747408866882324
servo8_angle1 = 121.20 + (20 * math.sin((2 * math.pi / 1) * servo8_angle1_time + 0))
#servo8.move(servo8_angle1, 100)
print(f"Servo 8 is at {servo8_angle1} degrees. Moving to max.\n")
time.sleep(0.25)

print("Left and right legs from start to point 1.\n")

# Move left and right legs from point 1 to point 2 - knee at max, ankle at min
servo3_angle2_time = 0.272663831711081543
servo3_angle2 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle2_time + math.pi))
#servo3.move(servo3_angle2, 100)
print(f"Servo 3 is at {servo3_angle2} degrees. At min.")
servo4_angle2_time = 0.27592897415161133
servo4_angle2 = 153.84 + (20 * math.sin((2 * math.pi / 1) * servo4_angle2_time + 0))
#servo4.move(servo4_angle2, 100)
print(f"Servo 4 is at {servo4_angle2} degrees. At max.")
servo7_angle2_time = 0.27532005310058594
servo7_angle2 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle2_time + math.pi))
#servo7.move(servo7_angle2, 100)
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print(f"Servo 7 is at {servo7_angle2} degrees. At min.")
servo8_angle2_time = 0.26618003845214844
servo8_angle2 = 121.20 + (20 * math.sin((2 * math.pi / 1) * servo8_angle2_time + 0))
#servo8.move(servo8_angle2, 100)
print(f"Servo 8 is at {servo8_angle2} degrees. At max.\n")
time.sleep(0.25)

print("Left and right legs from point 1 to point 2.\n")

# Move front and back legs from point 2 to point 3 - moving knee to min, ankle to max
servo1_angle3_time = 0.428757905960083
servo1_angle3 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle3_time + math.pi))
#servo1.move(servo1_angle3, 100)
print(f"Servo 1 is at {servo1_angle3} degrees. Moving to max.")
servo2_angle3_time = 0.4398972988128662
servo2_angle3 = 88.80 + (20 * math.sin((2 * math.pi / 1) * servo2_angle3_time + math.pi))
#servo2.move(servo2_angle3, 100)
print(f"Servo 2 is at {servo2_angle3} degrees. Moving to min.")
servo5_angle3_time = 0.4318418502807617
servo5_angle3 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle3_time + math.pi))
#servo5.move(servo5_angle3, 100)
print(f"Servo 5 is at {servo5_angle3} degrees. Moving to max.")
servo6_angle3_time = 0.4280240535736084
servo6_angle3 = 172.80 + (20 * math.sin((2 * math.pi / 1) * servo6_angle3_time + math.pi))
#servo6.move(servo6_angle3, 100)
print(f"Servo 6 is at {servo6_angle3} degrees. Moving to min.\n")
time.sleep(0.25)

print("Front and back legs from point 2 to point 3.\n")

# Move front and back legs from point 3 to point 4 - moving knee to min, ankle to max
servo1_angle4_time = 0.5904650688171387
servo1_angle4 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle4_time + math.pi))
#servo1.move(servo1_angle4, 100)
print(f"Servo 1 is at {servo1_angle4} degrees. Moving to max.")
servo2_angle4_time = 0.6025242805480957
servo2_angle4 = 88.80 + (20 * math.sin((2 * math.pi / 1) * servo2_angle4_time + math.pi))
#servo2.move(servo2_angle4, 100)
print(f"Servo 2 is at {servo2_angle4} degrees. Moving to min.")
servo5_angle4_time = 0.595344066619873
servo5_angle4 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle4_time + math.pi))
#servo5.move(servo5_angle4, 100)
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print(f"Servo 5 is at {servo5_angle4} degrees. Moving to max.")
servo6_angle4_time = 0.5887000560760498
servo6_angle4 = 172.80 + (20 * math.sin((2 * math.pi / 1) * servo6_angle4_time + math.pi))
#servo6.move(servo6_angle4, 100)
print(f"Servo 6 is at {servo6_angle4} degrees. Moving to min.\n")
time.sleep(0.25)

print("Front and back legs from point 3 to point 4.\n")

# Move front and back legs from point 4 to point 5 - knee at min, ankle at max
servo1_angle5_time = 0.7522311210632324
servo1_angle5 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle5_time + math.pi))
#servo1.move(servo1_angle5, 100)
print(f"Servo 1 is at {servo1_angle5} degrees. At max.")
servo2_angle5_time = 0.7676851749420166
servo2_angle5 = 88.80 + (20 * math.sin((2 * math.pi / 1) * servo2_angle5_time + math.pi))
#servo2.move(servo2_angle5, 100)
print(f"Servo 2 is at {servo2_angle5} degrees. At min.")
servo5_angle5_time = 0.757112979888916
servo5_angle5 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle5_time + math.pi))
#servo5.move(servo5_angle5, 100)
print(f"Servo 5 is at {servo5_angle5} degrees. At max.")
servo6_angle5_time = 0.750373125076294
servo6_angle5 = 172.80 + (20 * math.sin((2 * math.pi / 1) * servo6_angle5_time + math.pi))
#servo6.move(servo6_angle5, 100)
print(f"Servo 6 is at {servo6_angle5} degrees. At min.\n")
time.sleep(0.25)

print("Front and back legs from point 4 to point 5.\n")

# Move left and right legs from point 2 to point 3 - moving knee to min, ankle to max
servo3_angle3_time = 0.4369039535522461
servo3_angle3 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle3_time + math.pi))
#servo3.move(servo3_angle3, 100)
print(f"Servo 3 is at {servo3_angle3} degrees. Moving to max.")
servo4_angle3_time = 0.4353969097137451
servo4_angle3 = 153.84 + (20 * math.sin((2 * math.pi / 1) * servo4_angle3_time + 0))
#servo4.move(servo4_angle3, 100)
print(f"Servo 4 is at {servo4_angle3} degrees. Moving to min.")
servo7_angle3_time = 0.43543124198913574
servo7_angle3 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle3_time + math.pi))
#servo7.move(servo7_angle3, 100)

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print(f"Servo 7 is at {servo7_angle3} degrees. Moving to max.")
servo8_angle3_time = 0.42971205711364746
servo8_angle3 = 121.20 + (20 * math.sin((2 * math.pi / 1) * servo8_angle3_time + 0))
#servo8.move(servo8_angle3, 100)
print(f"Servo 8 is at {servo8_angle3} degrees. Moving to min.\n")
time.sleep(0.25)

print("Left and right legs from point 2 to point 3.\n")

# Move left and right legs from point 3 to point 4 - moving knee to min, ankle to max
servo3_angle4_time = 0.5945649147033691
servo3_angle4 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle4_time + math.pi))
#servo3.move(servo3_angle4, 100)
print(f"Servo 3 is at {servo3_angle4} degrees. Moving to max.")
servo4_angle4_time = 0.5962309837341309
servo4_angle4 = 153.84 + (20 * math.sin((2 * math.pi / 1) * servo4_angle4_time + 0))
#servo4.move(servo4_angle4, 100)
print(f"Servo 4 is at {servo4_angle4} degrees. Moving to min.")
servo7_angle4_time = 0.5980091094970703
servo7_angle4 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle4_time + math.pi))
#servo7.move(servo7_angle4, 100)
print(f"Servo 7 is at {servo7_angle4} degrees. Moving to max.")
servo8_angle4_time = 0.5912811756134033
servo8_angle4 = 121.20 + (20 * math.sin((2 * math.pi / 1) * servo8_angle4_time + 0))
#servo8.move(servo8_angle4, 100)
print(f"Servo 8 is at {servo8_angle4} degrees. Moving to min.\n")
time.sleep(0.25)

print("Left and right legs from point 3 to point 4.\n")

# Move left and right legs from point 4 to point 5 - knee at min, ankle at max
servo3_angle5_time = 0.7569999694824219
servo3_angle5 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle5_time + math.pi))
#servo3.move(servo3_angle5, 100)
print(f"Servo 3 is at {servo3_angle5} degrees. At max.")
servo4_angle5_time = 0.756140947341919
servo4_angle5 = 153.84 + (20 * math.sin((2 * math.pi / 1) * servo4_angle5_time + 0))
#servo4.move(servo4_angle5, 100)
print(f"Servo 4 is at {servo4_angle5} degrees. At min.")
servo7_angle5_time = 0.7599022388458252
servo7_angle5 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle5_time + math.pi))
#servo7.move(servo7_angle5, 100)
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print(f"Servo 7 is at {servo7_angle5} degrees. At max.")
servo8_angle5_time = 0.7530090808868408
servo8_angle5 = 121.20 + (20 * math.sin((2 * math.pi / 1) * servo8_angle5_time + 0))
#servo8.move(servo8_angle5, 100)
print(f"Servo 8 is at {servo8_angle5} degrees. At min.\n")
time.sleep(0.25)

print("Left and right legs from point 4 to point 5.\n")

# Move front and back legs from point 5 to point 6 - moving to home
servo1_angle6_time = 0.9133250713348389
servo1_angle6 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle6_time + math.pi))
#servo1.move(servo1_angle6, 100)
print(f"Servo 1 is at {servo1_angle6} degrees. Moving to home.")
servo2_angle6_time = 0.9328901767730713
servo2_angle6 = 88.80 + (20 * math.sin((2 * math.pi / 1) * servo2_angle6_time + math.pi))
#servo2.move(servo2_angle6, 100)
print(f"Servo 2 is at {servo2_angle6} degrees. Moving to home.")
servo5_angle6_time = 0.9204530715942383
servo5_angle6 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle6_time + math.pi))
#servo5.move(servo5_angle6, 100)
print(f"Servo 5 is at {servo5_angle6} degrees. Moving to home.")
servo6_angle6_time = 0.9071481227874756
servo6_angle6 = 172.80 + (20 * math.sin((2 * math.pi / 1) * servo6_angle6_time + math.pi))
#servo6.move(servo6_angle6, 100)
print(f"Servo 6 is at {servo6_angle6} degrees. Moving to home.\n")
time.sleep(0.25)

print("Front and back legs from point 5 to point 6.\n")

# Move front and back legs from point 6 to home - at home
servo1_angle7_time = 0.00032210350036621094
servo1_angle7 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle7_time + math.pi))
#servo1.move(servo1_angle7, 100)
print(f"Servo 1 is at {servo1_angle7} degrees. At home.")
servo2_angle7_time = 0.0001742839813232422
servo2_angle7 = 88.80 + (20 * math.sin((2 * math.pi / 1) * servo2_angle7_time + math.pi))
#servo2.move(servo2_angle7, 100)
print(f"Servo 2 is at {servo2_angle7} degrees. At home.")
servo5_angle7_time = 0.00019097328186035156
servo5_angle7 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle7_time + math.pi))
#servo5.move(servo5_angle7, 100)

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print(f"Servo 5 is at {servo5_angle7} degrees. At home.")
servo6_angle7_time = 0.00019884109497070312
servo6_angle7 = 172.80 + (20 * math.sin((2 * math.pi / 1) * servo6_angle7_time + math.pi))
#servo6.move(servo6_angle7, 100)
print(f"Servo 6 is at {servo6_angle7} degrees. At home.\n")
time.sleep(0.25)

print("Front and back legs from point 6 to home.\n")

# Move left and right legs from point 5 to point 6 - moving to home
servo3_angle6_time = 0.9208850860595703
servo3_angle6 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle6_time + math.pi))
#servo3.move(servo3_angle6, 100)
print(f"Servo 3 is at {servo3_angle6} degrees. Moving to home.")
servo4_angle6_time = 0.9185879230499268
servo4_angle6 = 153.84 + (20 * math.sin((2 * math.pi / 1) * servo4_angle6_time + 0))
#servo4.move(servo4_angle6, 100)
print(f"Servo 4 is at {servo4_angle6} degrees. Moving to home.")
servo7_angle6_time = 0.9242391586303711
servo7_angle6 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle6_time + math.pi))
#servo7.move(servo7_angle6, 100)
print(f"Servo 7 is at {servo7_angle6} degrees. Moving to home.")
servo8_angle6_time = 0.9078829288482666
servo8_angle6 = 121.20 + (20 * math.sin((2 * math.pi / 1) * servo8_angle6_time + 0))
#servo8.move(servo8_angle6, 100)
print(f"Servo 8 is at {servo8_angle6} degrees. Moving to home.\n")
time.sleep(0.25)

print("Left and right legs fromt point 5 to point 6.\n")

# Move left and right legs from point 6 to home - at home
servo3_angle7_time = 0.00019311904907226562
servo3_angle7 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle7_time + math.pi))
#servo3.move(servo3_angle7, 100)
print(f"Servo 3 is at {servo3_angle7} degrees. At home.")
servo4_angle7_time = 0.0002048015594482422
servo4_angle7 = 153.84 + (20 * math.sin((2 * math.pi / 1) * servo4_angle7_time + 0))
#servo4.move(servo4_angle7, 100)
print(f"Servo 4 is at {servo4_angle7} degrees. At home.")
servo7_angle7_time = 0.0002048015594482422
servo7_angle7 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle7_time + math.pi))
#servo7.move(servo7_angle7, 100)

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print(f"Servo 7 is at {servo7_angle7} degrees. At home.")
servo8_angle7_time = 0.00018405914306640625
servo8_angle7 = 121.20 + (20 * math.sin((2 * math.pi / 1) * servo8_angle7_time + 0))
#servo8.move(servo8_angle7, 100)
print(f"Servo 8 is at {servo8_angle7} degrees. At home.\n")
time.sleep(0.25)

print("Left and right legs fromt point 5 to point 6.\n")

print(f"One step completed.\n")
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Servo 1 is at 134.72768364529688 degrees. Moving to min.
Servo 2 is at 76.08503369371587 degrees. Moving to max.
Servo 5 is at 103.30497259354877 degrees. Moving to min.
Servo 6 is at 160.07543867439264 degrees. Moving to max.

Front and back legs from start to point 1.

Servo 1 is at 127.52835165911291 degrees. At min.
Servo 2 is at 69.0426718759987 degrees. At max.
Servo 5 is at 95.54866179719623 degrees. At min.
Servo 6 is at 152.92923704171784 degrees. At max.

Front and back legs from point 1 to point 2.

Servo 3 is at 120.87091585173246 degrees. Moving to min.
Servo 4 is at 166.67244705968335 degrees. Moving to max.
Servo 7 is at 117.79632354713381 degrees. Moving to min.
Servo 8 is at 133.70231179069782 degrees. Moving to max.

Left and right legs from start to point 1.

Servo 3 is at 113.88243816806553 degrees. At min.
Servo 4 is at 173.5751685161617 degrees. At max.
Servo 7 is at 110.81256477223047 degrees. At min.
Servo 8 is at 141.09673699478847 degrees. At max.

Left and right legs from point 1 to point 2.

Servo 1 is at 138.70344396894055 degrees. Moving to max.
Servo 2 is at 81.42551095966611 degrees. Moving to min.
Servo 5 is at 107.1344053200012 degrees. Moving to max.
Servo 6 is at 164.06040336417556 degrees. Moving to min.

Front and back legs from point 2 to point 3.

Servo 1 is at 158.12583451807288 degrees. Moving to max.
Servo 2 is at 100.81084435152843 degrees. Moving to min.
Servo 5 is at 126.71740148367029 degrees. Moving to max.
Servo 6 is at 183.37825413076507 degrees. Moving to min.

Front and back legs from point 3 to point 4.

Servo 1 is at 167.35803483555992 degrees. At max.
Servo 2 is at 108.6766521622526 degrees. At min.
Servo 5 is at 135.42002942317401 degrees. At max.
Servo 6 is at 192.7999450372553 degrees. At min.

Front and back legs from point 4 to point 5.

Servo 3 is at 125.95718531221384 degrees. Moving to max.
Servo 4 is at 161.73715817912085 degrees. Moving to min.
Servo 7 is at 122.66680575332896 degrees. Moving to max.
Servo 8 is at 129.7483121119937 degrees. Moving to min.

Left and right legs from point 2 to point 3.

Servo 3 is at 144.8764054479126 degrees. Moving to max.
Servo 4 is at 142.47072889305008 degrees. Moving to min.
Servo 7 is at 142.11238854013587 degrees. Moving to max.
Servo 8 is at 110.34787828815962 degrees. Moving to min.

Left and right legs from point 3 to point 4.

Servo 3 is at 153.66065886217774 degrees. At max.
Servo 4 is at 133.85488595158054 degrees. At min.
Servo 7 is at 150.5213021862641 degrees. At max.
Servo 8 is at 101.20357449360175 degrees. At min.

Left and right legs from point 4 to point 5.

Servo 1 is at 157.72142824120448 degrees. Moving to home.
Servo 2 is at 96.98557541624996 degrees. Moving to home.
Servo 5 is at 125.0251422895728 degrees. Moving to home.
Servo 6 is at 183.8173873855411 degrees. Moving to home.

Front and back legs from point 5 to point 6.

Servo 1 is at 147.3195233080137 degrees. At home.
Servo 2 is at 88.7780988333626 degrees. At home.
Servo 5 is at 115.41600159538588 degrees. At home.
Servo 6 is at 172.7750128975727 degrees. At home.

Front and back legs from point 6 to home.

Servo 3 is at 143.2174593669404 degrees. Moving to home.
Servo 4 is at 144.04980994826025 degrees. Moving to home.
Servo 7 is at 139.72489518305633 degrees. Moving to home.
Servo 8 is at 110.25979464967625 degrees. Moving to home.

Left and right legs fromt point 5 to point 6.

Servo 3 is at 133.6557319505218 degrees. At home.
Servo 4 is at 153.86573611588165 degrees. At home.
Servo 7 is at 130.53426388411836 degrees. At home.
Servo 8 is at 121.2231295489116 degrees. At home.

Left and right legs fromt point 5 to point 6.

One step completed.

In []: