In [1]:
```
import math
from lx16a import *
import time
from math import sin, cos
import matplotlib.pyplot as plt
```

In [66]:
```
# Calculate servo angles for forward motion
start_time = time.time()
duration = 10.0
angular_frequency = 2 * math.pi / 1

while time.time() - start_time < duration:      # while the current time stamp - start time is less than 1
    current_time = time.time() - start_time     # current time = time stamp - start time

    # Move front and back legs
    servo1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 1 is at {servo1} degrees. t={current_time}.")
    servo2 = 88.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    print(f"Servo 2 is at {servo2} degrees. t={current_time}.")
    servo5 = 115.44 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 5 is at {servo5} degrees. t={current_time}.")
    servo6 = 172.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    print(f"Servo 6 is at {servo6} degrees. t={current_time}.")
    time.sleep(0.1)

    # Move left and right legs
    servo3 = 133.68 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 3 is at {servo3} degrees. t={current_time}.")
    servo4 = 153.84 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 4 is at {servo4} degrees. t={current_time}.")
    servo7 = 130.56 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 7 is at {servo7} degrees. t={current_time}.")
    servo8 = 121.20 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 8 is at {servo8} degrees. t={current_time}.\n")
    time.sleep(0.1)

# graph servo 1 angles
start_time = time.time()
duration = 10.0
```

```
times = []
servo1_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo1_angles.append(servo1)

    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo1_angles, label='Servo 1', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 1 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 1's angles are: \n{servo1_angles}")

# graph servo 2 angles
start_time = time.time()
duration = 10.0

times = []
servo2_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo2 = 88.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    servo2_angles.append(servo2)

    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo2_angles, label='Servo 2', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 2 Angle Over Time')
plt.legend()
```

```
plt.grid(True)
plt.show()
print(f"Servo 2's angles are: \n{servo2_angles}")

# graph servo 3 angles
start_time = time.time()
duration = 10.0

times = []
servo3_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo3 = 133.68 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo3_angles.append(servo3)

    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo3_angles, label='Servo 3', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 3 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 3's angles are: \n{servo3_angles}")

# graph servo 4 angles
start_time = time.time()
duration = 10.0

times = []
servo4_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo4 = 153.84 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo4_angles.append(servo4)
```

```
    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo4_angles, label='Servo 4', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 4 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 4's angles are: \n{servo4_angles}")

# graph servo 5 angles
start_time = time.time()
duration = 10.0

times = []
servo5_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo5 = 115.44 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo5_angles.append(servo5)

    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo5_angles, label='Servo 5', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 5 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 5's angles are: \n{servo5_angles}")

# graph servo 6 angles
start_time = time.time()
duration = 10.0

times = []
```

```
servo6_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo6 = 172.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    servo6_angles.append(servo6)

    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo6_angles, label='Servo 6', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 6 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 6's angles are: \n{servo6_angles}")

# graph servo 7 angles
start_time = time.time()
duration = 10.0

times = []
servo7_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo7 = 130.56 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo7_angles.append(servo7)

    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo7_angles, label='Servo 7', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 7 Angle Over Time')
plt.legend()
plt.grid(True)
```

```
plt.show()
print(f"Servo 7's angles are: \n{servo7_angles}")

# graph servo 8 angles
start_time = time.time()
duration = 10.0

times = []
servo8_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo8 = 121.20 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo8_angles.append(servo8)

    time.sleep(0.1)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo8_angles, label='Servo 8', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 8 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 8's angles are: \n{servo8_angles}")
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Servo 1 is at 147.39002047211488 degrees. t=0.00023889541625976562.
Servo 2 is at 88.76997952788514 degrees. t=0.00023889541625976562.
Servo 5 is at 115.47002047211485 degrees. t=0.00023889541625976562.
Servo 6 is at 172.76997952788514 degrees. t=0.00023889541625976562.
Servo 3 is at 133.71002047211488 degrees. t=0.00023889541625976562.
Servo 4 is at 153.87002047211487 degrees. t=0.00023889541625976562.
Servo 7 is at 130.59002047211487 degrees. t=0.00023889541625976562.
Servo 8 is at 121.23002047211486 degrees. t=0.00023889541625976562.

Servo 1 is at 166.72007837417118 degrees. t=0.20963096618652344.
Servo 2 is at 69.43992162582884 degrees. t=0.20963096618652344.
Servo 5 is at 134.80007837417116 degrees. t=0.20963096618652344.
Servo 6 is at 153.43992162582884 degrees. t=0.20963096618652344.
Servo 3 is at 153.04007837417117 degrees. t=0.20963096618652344.
Servo 4 is at 173.20007837417117 degrees. t=0.20963096618652344.
Servo 7 is at 149.92007837417117 degrees. t=0.20963096618652344.
Servo 8 is at 140.56007837417116 degrees. t=0.20963096618652344.

Servo 1 is at 157.19869333749486 degrees. t=0.41814494132995605.
Servo 2 is at 78.96130666250514 degrees. t=0.41814494132995605.
Servo 5 is at 125.27869333749486 degrees. t=0.41814494132995605.
Servo 6 is at 162.96130666250514 degrees. t=0.41814494132995605.
Servo 3 is at 143.51869333749485 degrees. t=0.41814494132995605.
Servo 4 is at 163.67869333749485 degrees. t=0.41814494132995605.
Servo 7 is at 140.39869333749485 degrees. t=0.41814494132995605.
Servo 8 is at 131.03869333749486 degrees. t=0.41814494132995605.

Servo 1 is at 133.03145540662868 degrees. t=0.6271119117736816.
Servo 2 is at 103.12854459337133 degrees. t=0.6271119117736816.
Servo 5 is at 101.11145540662866 degrees. t=0.6271119117736816.
Servo 6 is at 187.12854459337134 degrees. t=0.6271119117736816.
Servo 3 is at 119.35145540662867 degrees. t=0.6271119117736816.
Servo 4 is at 139.51145540662867 degrees. t=0.6271119117736816.
Servo 7 is at 116.23145540662867 degrees. t=0.6271119117736816.
Servo 8 is at 106.87145540662867 degrees. t=0.6271119117736816.

Servo 1 is at 130.14394192987547 degrees. t=0.8349809646606445.
Servo 2 is at 106.01605807012454 degrees. t=0.8349809646606445.
Servo 5 is at 98.22394192987545 degrees. t=0.8349809646606445.
Servo 6 is at 190.01605807012456 degrees. t=0.8349809646606445.
Servo 3 is at 116.46394192987546 degrees. t=0.8349809646606445.
Servo 4 is at 136.62394192987546 degrees. t=0.8349809646606445.
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Servo 7 is at 113.34394192987546 degrees. t=0.8349809646606445.
Servo 8 is at 103.98394192987546 degrees. t=0.8349809646606445.

Servo 1 is at 152.2633886389539 degrees. t=1.039421796798706.
Servo 2 is at 83.8966113610461 degrees. t=1.039421796798706.
Servo 5 is at 120.3433886389539 degrees. t=1.039421796798706.
Servo 6 is at 167.89661136104613 degrees. t=1.039421796798706.
Servo 3 is at 138.5833886389539 degrees. t=1.039421796798706.
Servo 4 is at 158.7433886389539 degrees. t=1.039421796798706.
Servo 7 is at 135.4633886389539 degrees. t=1.039421796798706.
Servo 8 is at 126.1033886389539 degrees. t=1.039421796798706.

Servo 1 is at 167.35810640997826 degrees. t=1.247809886932373.
Servo 2 is at 68.80189359002173 degrees. t=1.247809886932373.
Servo 5 is at 135.43810640997825 degrees. t=1.247809886932373.
Servo 6 is at 152.80189359002176 degrees. t=1.247809886932373.
Servo 3 is at 153.67810640997826 degrees. t=1.247809886932373.
Servo 4 is at 173.83810640997825 degrees. t=1.247809886932373.
Servo 7 is at 150.55810640997825 degrees. t=1.247809886932373.
Servo 8 is at 141.19810640997827 degrees. t=1.247809886932373.

Servo 1 is at 153.0683400627672 degrees. t=1.4539339542388916.
Servo 2 is at 83.0916599372328 degrees. t=1.4539339542388916.
Servo 5 is at 121.14834006276719 degrees. t=1.4539339542388916.
Servo 6 is at 167.09165993723283 degrees. t=1.4539339542388916.
Servo 3 is at 139.38834006276718 degrees. t=1.4539339542388916.
Servo 4 is at 159.54834006276718 degrees. t=1.4539339542388916.
Servo 7 is at 136.26834006276718 degrees. t=1.4539339542388916.
Servo 8 is at 126.9083400627672 degrees. t=1.4539339542388916.

Servo 1 is at 130.40512128312886 degrees. t=1.6610198020935059.
Servo 2 is at 105.75487871687116 degrees. t=1.6610198020935059.
Servo 5 is at 98.48512128312885 degrees. t=1.6610198020935059.
Servo 6 is at 189.75487871687116 degrees. t=1.6610198020935059.
Servo 3 is at 116.72512128312886 degrees. t=1.6610198020935059.
Servo 4 is at 136.88512128312885 degrees. t=1.6610198020935059.
Servo 7 is at 113.60512128312885 degrees. t=1.6610198020935059.
Servo 8 is at 104.24512128312884 degrees. t=1.6610198020935059.

Servo 1 is at 132.84841464777762 degrees. t=1.8707859516143799.
Servo 2 is at 103.3115853522224 degrees. t=1.8707859516143799.
Servo 5 is at 100.9284146477776 degrees. t=1.8707859516143799.
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Servo 6 is at 187.3115853522224 degrees. t=1.8707859516143799.
Servo 3 is at 119.16841464777761 degrees. t=1.8707859516143799.
Servo 4 is at 139.3284146477776 degrees. t=1.8707859516143799.
Servo 7 is at 116.0484146477776 degrees. t=1.8707859516143799.
Servo 8 is at 106.6884146477776 degrees. t=1.8707859516143799.

Servo 1 is at 156.6467753469593 degrees. t=2.0768539905548096.
Servo 2 is at 79.51322465304072 degrees. t=2.0768539905548096.
Servo 5 is at 124.72677534695927 degrees. t=2.0768539905548096.
Servo 6 is at 163.51322465304074 degrees. t=2.0768539905548096.
Servo 3 is at 142.96677534695928 degrees. t=2.0768539905548096.
Servo 4 is at 163.12677534695928 degrees. t=2.0768539905548096.
Servo 7 is at 139.84677534695928 degrees. t=2.0768539905548096.
Servo 8 is at 130.4867753469593 degrees. t=2.0768539905548096.

Servo 1 is at 166.86224876037198 degrees. t=2.2855820655822754.
Servo 2 is at 69.29775123962804 degrees. t=2.2855820655822754.
Servo 5 is at 134.94224876037197 degrees. t=2.2855820655822754.
Servo 6 is at 153.29775123962804 degrees. t=2.2855820655822754.
Servo 3 is at 153.18224876037198 degrees. t=2.2855820655822754.
Servo 4 is at 173.34224876037197 degrees. t=2.2855820655822754.
Servo 7 is at 150.06224876037197 degrees. t=2.2855820655822754.
Servo 8 is at 140.70224876037196 degrees. t=2.2855820655822754.

Servo 1 is at 148.57164172672202 degrees. t=2.490352153778076.
Servo 2 is at 87.58835827327802 degrees. t=2.490352153778076.
Servo 5 is at 116.651641726722 degrees. t=2.490352153778076.
Servo 6 is at 171.58835827327803 degrees. t=2.490352153778076.
Servo 3 is at 134.891641726722 degrees. t=2.490352153778076.
Servo 4 is at 155.051641726722 degrees. t=2.490352153778076.
Servo 7 is at 131.771641726722 degrees. t=2.490352153778076.
Servo 8 is at 122.41164172672202 degrees. t=2.490352153778076.

Servo 1 is at 128.32162942992943 degrees. t=2.7004458904266357.
Servo 2 is at 107.83837057007057 degrees. t=2.7004458904266357.
Servo 5 is at 96.40162942992941 degrees. t=2.7004458904266357.
Servo 6 is at 191.8383705700706 degrees. t=2.7004458904266357.
Servo 3 is at 114.64162942992942 degrees. t=2.7004458904266357.
Servo 4 is at 134.80162942992942 degrees. t=2.7004458904266357.
Servo 7 is at 111.52162942992942 degrees. t=2.7004458904266357.
Servo 8 is at 102.16162942992943 degrees. t=2.7004458904266357.
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Servo 1 is at 136.22080987270814 degrees. t=2.9059839248657227.
Servo 2 is at 99.93919012729185 degrees. t=2.9059839248657227.
Servo 5 is at 104.30080987270814 degrees. t=2.9059839248657227.
Servo 6 is at 183.93919012729188 degrees. t=2.9059839248657227.
Servo 3 is at 122.54080987270815 degrees. t=2.9059839248657227.
Servo 4 is at 142.70080987270813 degrees. t=2.9059839248657227.
Servo 7 is at 119.42080987270815 degrees. t=2.9059839248657227.
Servo 8 is at 110.06080987270815 degrees. t=2.9059839248657227.

Servo 1 is at 160.04367328809226 degrees. t=3.1093318462371826.
Servo 2 is at 76.11632671190776 degrees. t=3.1093318462371826.
Servo 5 is at 128.12367328809225 degrees. t=3.1093318462371826.
Servo 6 is at 160.11632671190776 degrees. t=3.1093318462371826.
Servo 3 is at 146.36367328809226 degrees. t=3.1093318462371826.
Servo 4 is at 166.52367328809225 degrees. t=3.1093318462371826.
Servo 7 is at 143.24367328809225 degrees. t=3.1093318462371826.
Servo 8 is at 133.88367328809224 degrees. t=3.1093318462371826.

Servo 1 is at 165.64471715021443 degrees. t=3.3163959980010986.
Servo 2 is at 70.51528284978556 degrees. t=3.3163959980010986.
Servo 5 is at 133.72471715021442 degrees. t=3.3163959980010986.
Servo 6 is at 154.5152828497856 degrees. t=3.3163959980010986.
Servo 3 is at 151.96471715021443 degrees. t=3.3163959980010986.
Servo 4 is at 172.12471715021442 degrees. t=3.3163959980010986.
Servo 7 is at 148.84471715021442 degrees. t=3.3163959980010986.
Servo 8 is at 139.48471715021444 degrees. t=3.3163959980010986.

Servo 1 is at 144.61338440617868 degrees. t=3.521926164627075.
Servo 2 is at 91.54661559382133 degrees. t=3.521926164627075.
Servo 5 is at 112.69338440617865 degrees. t=3.521926164627075.
Servo 6 is at 175.54661559382134 degrees. t=3.521926164627075.
Servo 3 is at 130.93338440617867 degrees. t=3.521926164627075.
Servo 4 is at 151.09338440617867 degrees. t=3.521926164627075.
Servo 7 is at 127.81338440617866 degrees. t=3.521926164627075.
Servo 8 is at 118.45338440617866 degrees. t=3.521926164627075.

Servo 1 is at 127.58361850151081 degrees. t=3.726177930831909.
Servo 2 is at 108.5763814984892 degrees. t=3.726177930831909.
Servo 5 is at 95.6636185015108 degrees. t=3.726177930831909.
Servo 6 is at 192.5763814984892 degrees. t=3.726177930831909.
Servo 3 is at 113.9036185015108 degrees. t=3.726177930831909.
Servo 4 is at 134.0636185015108 degrees. t=3.726177930831909.
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Servo 7 is at 110.7836185015108 degrees. t=3.726177930831909.
Servo 8 is at 101.4236185015108 degrees. t=3.726177930831909.

Servo 1 is at 139.34848760884492 degrees. t=3.9344050884246826.
Servo 2 is at 96.81151239115509 degrees. t=3.9344050884246826.
Servo 5 is at 107.4284876088449 degrees. t=3.9344050884246826.
Servo 6 is at 180.8115123911551 degrees. t=3.9344050884246826.
Servo 3 is at 125.66848760884491 degrees. t=3.9344050884246826.
Servo 4 is at 145.8284876088449 degrees. t=3.9344050884246826.
Servo 7 is at 122.54848760884491 degrees. t=3.9344050884246826.
Servo 8 is at 113.18848760884491 degrees. t=3.9344050884246826.

Servo 1 is at 163.02102786997438 degrees. t=4.143168926239014.
Servo 2 is at 73.13897213002565 degrees. t=4.143168926239014.
Servo 5 is at 131.10102786997436 degrees. t=4.143168926239014.
Servo 6 is at 157.13897213002568 degrees. t=4.143168926239014.
Servo 3 is at 149.34102786997437 degrees. t=4.143168926239014.
Servo 4 is at 169.50102786997434 degrees. t=4.143168926239014.
Servo 7 is at 146.22102786997436 degrees. t=4.143168926239014.
Servo 8 is at 136.86102786997435 degrees. t=4.143168926239014.

Servo 1 is at 163.63538260817973 degrees. t=4.348706007003784.
Servo 2 is at 72.52461739182029 degrees. t=4.348706007003784.
Servo 5 is at 131.7153826081797 degrees. t=4.348706007003784.
Servo 6 is at 156.5246173918203 degrees. t=4.348706007003784.
Servo 3 is at 149.95538260817972 degrees. t=4.348706007003784.
Servo 4 is at 170.11538260817971 degrees. t=4.348706007003784.
Servo 7 is at 146.8353826081797 degrees. t=4.348706007003784.
Servo 8 is at 137.4753826081797 degrees. t=4.348706007003784.

Servo 1 is at 141.03833597990447 degrees. t=4.5511839389801025.
Servo 2 is at 95.12166402009552 degrees. t=4.5511839389801025.
Servo 5 is at 109.11833597990447 degrees. t=4.5511839389801025.
Servo 6 is at 179.12166402009555 degrees. t=4.5511839389801025.
Servo 3 is at 127.35833597990448 degrees. t=4.5511839389801025.
Servo 4 is at 147.51833597990446 degrees. t=4.5511839389801025.
Servo 7 is at 124.23833597990448 degrees. t=4.5511839389801025.
Servo 8 is at 114.87833597990448 degrees. t=4.5511839389801025.

Servo 1 is at 127.3991668056373 degrees. t=4.75996208190918.
Servo 2 is at 108.7608331943627 degrees. t=4.75996208190918.
Servo 5 is at 95.47916680563728 degrees. t=4.75996208190918.
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Servo 6 is at 192.76083319436273 degrees. t=4.75996208190918.
Servo 3 is at 113.71916680563729 degrees. t=4.75996208190918.
Servo 4 is at 133.87916680563728 degrees. t=4.75996208190918.
Servo 7 is at 110.59916680563728 degrees. t=4.75996208190918.
Servo 8 is at 101.23916680563728 degrees. t=4.75996208190918.

Servo 1 is at 143.48173365060427 degrees. t=4.96894097328186.
Servo 2 is at 92.67826634939574 degrees. t=4.96894097328186.
Servo 5 is at 111.56173365060425 degrees. t=4.96894097328186.
Servo 6 is at 176.67826634939576 degrees. t=4.96894097328186.
Servo 3 is at 129.80173365060426 degrees. t=4.96894097328186.
Servo 4 is at 149.96173365060426 degrees. t=4.96894097328186.
Servo 7 is at 126.68173365060426 degrees. t=4.96894097328186.
Servo 8 is at 117.32173365060426 degrees. t=4.96894097328186.

Servo 1 is at 164.90135816388826 degrees. t=5.170251846313477.
Servo 2 is at 71.25864183611172 degrees. t=5.170251846313477.
Servo 5 is at 132.98135816388825 degrees. t=5.170251846313477.
Servo 6 is at 155.25864183611174 degrees. t=5.170251846313477.
Servo 3 is at 151.22135816388825 degrees. t=5.170251846313477.
Servo 4 is at 171.38135816388825 degrees. t=5.170251846313477.
Servo 7 is at 148.10135816388825 degrees. t=5.170251846313477.
Servo 8 is at 138.74135816388824 degrees. t=5.170251846313477.

Servo 1 is at 161.49228102116163 degrees. t=5.375110864639282.
Servo 2 is at 74.66771897883842 degrees. t=5.375110864639282.
Servo 5 is at 129.57228102116161 degrees. t=5.375110864639282.
Servo 6 is at 158.66771897883845 degrees. t=5.375110864639282.
Servo 3 is at 147.81228102116162 degrees. t=5.375110864639282.
Servo 4 is at 167.97228102116162 degrees. t=5.375110864639282.
Servo 7 is at 144.69228102116162 degrees. t=5.375110864639282.
Servo 8 is at 135.33228102116163 degrees. t=5.375110864639282.

Servo 1 is at 137.5124391656116 degrees. t=5.5819361209869385.
Servo 2 is at 98.64756083438847 degrees. t=5.5819361209869385.
Servo 5 is at 105.59243916561158 degrees. t=5.5819361209869385.
Servo 6 is at 182.64756083438849 degrees. t=5.5819361209869385.
Servo 3 is at 123.83243916561159 degrees. t=5.5819361209869385.
Servo 4 is at 143.9924391656116 degrees. t=5.5819361209869385.
Servo 7 is at 120.71243916561158 degrees. t=5.5819361209869385.
Servo 8 is at 111.35243916561159 degrees. t=5.5819361209869385.
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Servo 1 is at 127.93469700825693 degrees. t=5.788245916366577.
Servo 2 is at 108.22530299174306 degrees. t=5.788245916366577.
Servo 5 is at 96.01469700825692 degrees. t=5.788245916366577.
Servo 6 is at 192.22530299174306 degrees. t=5.788245916366577.
Servo 3 is at 114.25469700825693 degrees. t=5.788245916366577.
Servo 4 is at 134.41469700825692 degrees. t=5.788245916366577.
Servo 7 is at 111.13469700825692 degrees. t=5.788245916366577.
Servo 8 is at 101.77469700825692 degrees. t=5.788245916366577.

Servo 1 is at 147.10201675312175 degrees. t=5.9979469776153564.
Servo 2 is at 89.05798324687835 degrees. t=5.9979469776153564.
Servo 5 is at 115.18201675312172 degrees. t=5.9979469776153564.
Servo 6 is at 173.05798324687836 degrees. t=5.9979469776153564.
Servo 3 is at 133.42201675312174 degrees. t=5.9979469776153564.
Servo 4 is at 153.58201675312174 degrees. t=5.9979469776153564.
Servo 7 is at 130.30201675312173 degrees. t=5.9979469776153564.
Servo 8 is at 120.94201675312172 degrees. t=5.9979469776153564.

Servo 1 is at 166.6015130109709 degrees. t=6.206027984619141.
Servo 2 is at 69.55848698902909 degrees. t=6.206027984619141.
Servo 5 is at 134.6815130109709 degrees. t=6.206027984619141.
Servo 6 is at 153.55848698902912 degrees. t=6.206027984619141.
Servo 3 is at 152.9215130109709 degrees. t=6.206027984619141.
Servo 4 is at 173.08151301097087 degrees. t=6.206027984619141.
Servo 7 is at 149.8015130109709 degrees. t=6.206027984619141.
Servo 8 is at 140.44151301097088 degrees. t=6.206027984619141.

Servo 1 is at 158.1571505515574 degrees. t=6.409239053726196.
Servo 2 is at 78.00284944844265 degrees. t=6.409239053726196.
Servo 5 is at 126.23715055155739 degrees. t=6.409239053726196.
Servo 6 is at 162.00284944844267 degrees. t=6.409239053726196.
Servo 3 is at 144.4771505515574 degrees. t=6.409239053726196.
Servo 4 is at 164.6371505515574 degrees. t=6.409239053726196.
Servo 7 is at 141.3571505515574 degrees. t=6.409239053726196.
Servo 8 is at 131.9971505515574 degrees. t=6.409239053726196.

Servo 1 is at 134.0595589608614 degrees. t=6.61578893661499.
Servo 2 is at 102.10044103913867 degrees. t=6.61578893661499.
Servo 5 is at 102.13955896086138 degrees. t=6.61578893661499.
Servo 6 is at 186.10044103913867 degrees. t=6.61578893661499.
Servo 3 is at 120.37955896086139 degrees. t=6.61578893661499.
Servo 4 is at 140.53955896086137 degrees. t=6.61578893661499.
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Servo 7 is at 117.25955896086138 degrees. t=6.61578893661499.
Servo 8 is at 107.89955896086138 degrees. t=6.61578893661499.

Servo 1 is at 129.5712347434878 degrees. t=6.825547933578491.
Servo 2 is at 106.58876525651219 degrees. t=6.825547933578491.
Servo 5 is at 97.65123474348778 degrees. t=6.825547933578491.
Servo 6 is at 190.5887652565122 degrees. t=6.825547933578491.
Servo 3 is at 115.89123474348779 degrees. t=6.825547933578491.
Servo 4 is at 136.05123474348778 degrees. t=6.825547933578491.
Servo 7 is at 112.77123474348778 degrees. t=6.825547933578491.
Servo 8 is at 103.41123474348777 degrees. t=6.825547933578491.

Servo 1 is at 151.80853256637104 degrees. t=7.035698890686035.
Servo 2 is at 84.35146743362904 degrees. t=7.035698890686035.
Servo 5 is at 119.88853256637103 degrees. t=7.035698890686035.
Servo 6 is at 168.35146743362904 degrees. t=7.035698890686035.
Servo 3 is at 138.12853256637104 degrees. t=7.035698890686035.
Servo 4 is at 158.28853256637103 degrees. t=7.035698890686035.
Servo 7 is at 135.00853256637103 degrees. t=7.035698890686035.
Servo 8 is at 125.64853256637103 degrees. t=7.035698890686035.

Servo 1 is at 167.35314121770176 degrees. t=7.245831727981567.
Servo 2 is at 68.80685878229826 degrees. t=7.245831727981567.
Servo 5 is at 135.43314121770175 degrees. t=7.245831727981567.
Servo 6 is at 152.80685878229826 degrees. t=7.245831727981567.
Servo 3 is at 153.67314121770175 degrees. t=7.245831727981567.
Servo 4 is at 173.83314121770175 degrees. t=7.245831727981567.
Servo 7 is at 150.55314121770175 degrees. t=7.245831727981567.
Servo 8 is at 141.19314121770174 degrees. t=7.245831727981567.

Servo 1 is at 153.19791090877854 degrees. t=7.45285701751709.
Servo 2 is at 82.9620890912214 degrees. t=7.45285701751709.
Servo 5 is at 121.27791090877852 degrees. t=7.45285701751709.
Servo 6 is at 166.9620890912214 degrees. t=7.45285701751709.
Servo 3 is at 139.51791090877853 degrees. t=7.45285701751709.
Servo 4 is at 159.67791090877853 degrees. t=7.45285701751709.
Servo 7 is at 136.39791090877853 degrees. t=7.45285701751709.
Servo 8 is at 127.03791090877853 degrees. t=7.45285701751709.

Servo 1 is at 130.5019906170796 degrees. t=7.659576892852783.
Servo 2 is at 105.65800938292045 degrees. t=7.659576892852783.
Servo 5 is at 98.58199061707958 degrees. t=7.659576892852783.
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Servo 6 is at 189.65800938292045 degrees. t=7.659576892852783.
Servo 3 is at 116.82199061707959 degrees. t=7.659576892852783.
Servo 4 is at 136.9819906170796 degrees. t=7.659576892852783.
Servo 7 is at 113.70199061707959 degrees. t=7.659576892852783.
Servo 8 is at 104.34199061707957 degrees. t=7.659576892852783.

Servo 1 is at 132.33228784066372 degrees. t=7.86469292640686.
Servo 2 is at 103.82771215933633 degrees. t=7.86469292640686.
Servo 5 is at 100.41228784066371 degrees. t=7.86469292640686.
Servo 6 is at 187.82771215933636 degrees. t=7.86469292640686.
Servo 3 is at 118.65228784066372 degrees. t=7.86469292640686.
Servo 4 is at 138.8122878406637 degrees. t=7.86469292640686.
Servo 7 is at 115.53228784066371 degrees. t=7.86469292640686.
Servo 8 is at 106.17228784066371 degrees. t=7.86469292640686.

Servo 1 is at 156.45166592776786 degrees. t=8.075105905532837.
Servo 2 is at 79.70833407223222 degrees. t=8.075105905532837.
Servo 5 is at 124.53166592776783 degrees. t=8.075105905532837.
Servo 6 is at 163.70833407223225 degrees. t=8.075105905532837.
Servo 3 is at 142.77166592776786 degrees. t=8.075105905532837.
Servo 4 is at 162.93166592776785 degrees. t=8.075105905532837.
Servo 7 is at 139.65166592776785 degrees. t=8.075105905532837.
Servo 8 is at 130.29166592776784 degrees. t=8.075105905532837.

Servo 1 is at 166.90762941640236 degrees. t=8.283914804458618.
Servo 2 is at 69.25237058359765 degrees. t=8.283914804458618.
Servo 5 is at 134.98762941640234 degrees. t=8.283914804458618.
Servo 6 is at 153.25237058359767 degrees. t=8.283914804458618.
Servo 3 is at 153.22762941640235 degrees. t=8.283914804458618.
Servo 4 is at 173.38762941640235 degrees. t=8.283914804458618.
Servo 7 is at 150.10762941640235 degrees. t=8.283914804458618.
Servo 8 is at 140.74762941640236 degrees. t=8.283914804458618.

Servo 1 is at 148.3508394336262 degrees. t=8.492111921310425.
Servo 2 is at 87.8091605663739 degrees. t=8.492111921310425.
Servo 5 is at 116.43083943362616 degrees. t=8.492111921310425.
Servo 6 is at 171.80916056637392 degrees. t=8.492111921310425.
Servo 3 is at 134.67083943362618 degrees. t=8.492111921310425.
Servo 4 is at 154.83083943362618 degrees. t=8.492111921310425.
Servo 7 is at 131.55083943362618 degrees. t=8.492111921310425.
Servo 8 is at 122.19083943362617 degrees. t=8.492111921310425.
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Servo 1 is at 128.43805060616666 degrees. t=8.697505950927734.
Servo 2 is at 107.72194939383338 degrees. t=8.697505950927734.
Servo 5 is at 96.51805060616664 degrees. t=8.697505950927734.
Servo 6 is at 191.7219493938334 degrees. t=8.697505950927734.
Servo 3 is at 114.75805060616665 degrees. t=8.697505950927734.
Servo 4 is at 134.91805060616664 degrees. t=8.697505950927734.
Servo 7 is at 111.63805060616664 degrees. t=8.697505950927734.
Servo 8 is at 102.27805060616664 degrees. t=8.697505950927734.

Servo 1 is at 135.71569075532716 degrees. t=8.901093006134033.
Servo 2 is at 100.44430924467278 degrees. t=8.901093006134033.
Servo 5 is at 103.79569075532714 degrees. t=8.901093006134033.
Servo 6 is at 184.4443092446728 degrees. t=8.901093006134033.
Servo 3 is at 122.03569075532715 degrees. t=8.901093006134033.
Servo 4 is at 142.19569075532715 degrees. t=8.901093006134033.
Servo 7 is at 118.91569075532715 degrees. t=8.901093006134033.
Servo 8 is at 109.55569075532716 degrees. t=8.901093006134033.

Servo 1 is at 160.22092056469015 degrees. t=9.111164808273315.
Servo 2 is at 75.93907943530982 degrees. t=9.111164808273315.
Servo 5 is at 128.30092056469013 degrees. t=9.111164808273315.
Servo 6 is at 159.93907943530982 degrees. t=9.111164808273315.
Servo 3 is at 146.54092056469014 degrees. t=9.111164808273315.
Servo 4 is at 166.70092056469014 degrees. t=9.111164808273315.
Servo 7 is at 143.42092056469014 degrees. t=9.111164808273315.
Servo 8 is at 134.06092056469012 degrees. t=9.111164808273315.

Servo 1 is at 165.48357327849803 degrees. t=9.319493055343628.
Servo 2 is at 70.676426721502 degrees. t=9.319493055343628.
Servo 5 is at 133.563573278498 degrees. t=9.319493055343628.
Servo 6 is at 154.67642672150203 degrees. t=9.319493055343628.
Servo 3 is at 151.80357327849802 degrees. t=9.319493055343628.
Servo 4 is at 171.96357327849802 degrees. t=9.319493055343628.
Servo 7 is at 148.68357327849802 degrees. t=9.319493055343628.
Servo 8 is at 139.32357327849803 degrees. t=9.319493055343628.

Servo 1 is at 144.01183766781332 degrees. t=9.526769876480103.
Servo 2 is at 92.1481623321866 degrees. t=9.526769876480103.
Servo 5 is at 112.09183766781332 degrees. t=9.526769876480103.
Servo 6 is at 176.14816233218662 degrees. t=9.526769876480103.
Servo 3 is at 130.33183766781332 degrees. t=9.526769876480103.
Servo 4 is at 150.49183766781331 degrees. t=9.526769876480103.
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Servo 7 is at 127.21183766781333 degrees. t=9.526769876480103.
Servo 8 is at 117.85183766781333 degrees. t=9.526769876480103.

Servo 1 is at 127.44392082246499 degrees. t=9.735414981842041.
Servo 2 is at 108.71607917753502 degrees. t=9.735414981842041.
Servo 5 is at 95.52392082246497 degrees. t=9.735414981842041.
Servo 6 is at 192.71607917753505 degrees. t=9.735414981842041.
Servo 3 is at 113.76392082246498 degrees. t=9.735414981842041.
Servo 4 is at 133.923920822465 degrees. t=9.735414981842041.
Servo 7 is at 110.64392082246498 degrees. t=9.735414981842041.
Servo 8 is at 101.28392082246498 degrees. t=9.735414981842041.

Servo 1 is at 140.03583408993092 degrees. t=9.940327882766724.
Servo 2 is at 96.12416591006915 degrees. t=9.940327882766724.
Servo 5 is at 108.11583408993091 degrees. t=9.940327882766724.
Servo 6 is at 180.12416591006917 degrees. t=9.940327882766724.
Servo 3 is at 126.35583408993092 degrees. t=9.940327882766724.
Servo 4 is at 146.51583408993093 degrees. t=9.940327882766724.
Servo 7 is at 123.23583408993092 degrees. t=9.940327882766724.
Servo 8 is at 113.87583408993092 degrees. t=9.940327882766724.
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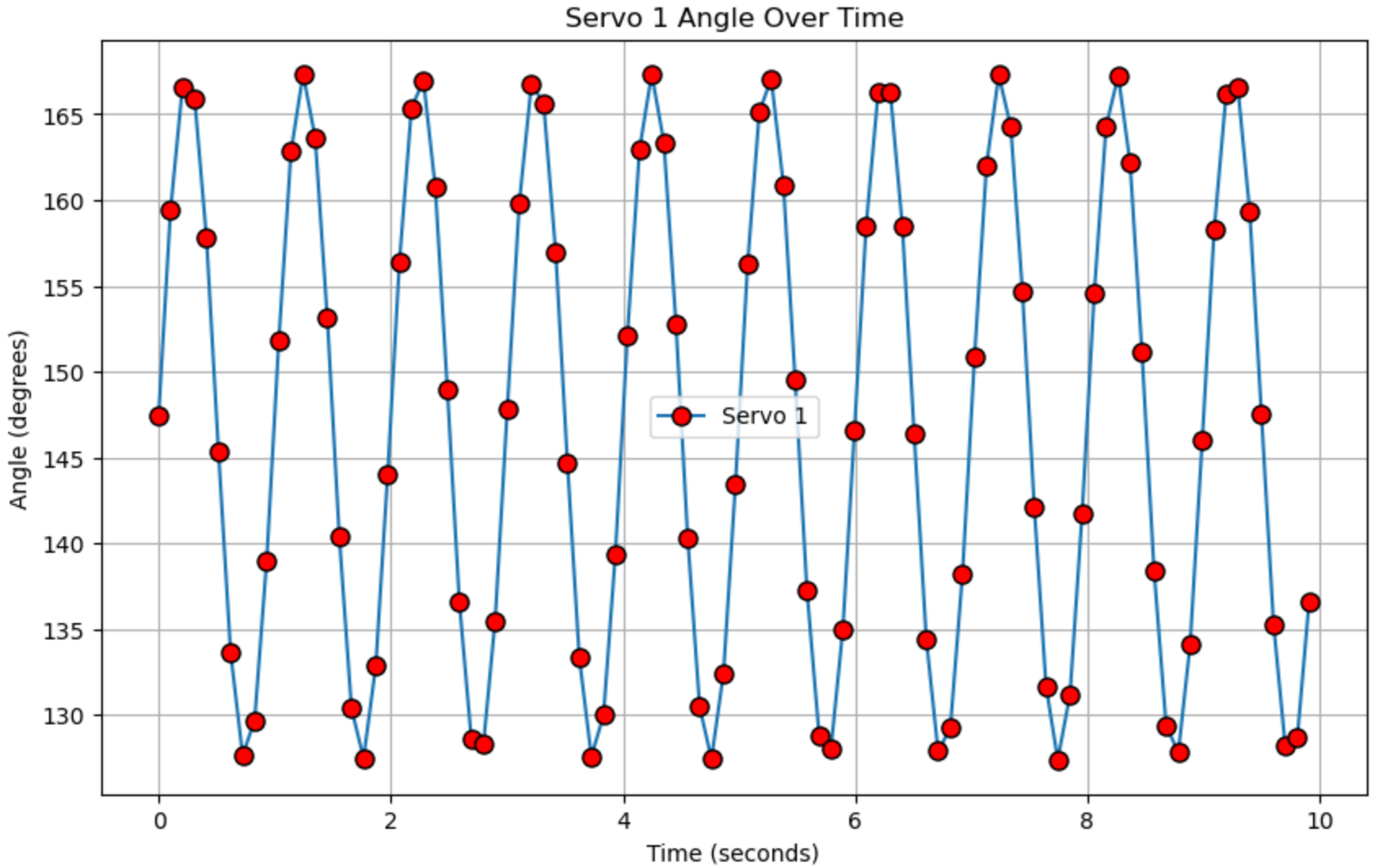
Servo 1 Angle Over Time
Angle (degrees)
165
160
155
150
145
140
135
130
0
2
4
6
8
10
Time (seconds)
Servo 1

```
Servo 1's angles are:
[147.40095605998917, 159.3974191802946, 166.60651477810745, 165.94617565888507, 157.79894363912896, 145.375
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93, 162.81756678976268, 167.34944055869687, 163.63778521675124, 153.119976306906, 140.36012689814018, 130.3
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8.26476076614625, 135.46322689364473, 147.82518565681818, 159.84923509124405, 166.77599636357792, 165.63655
014731677, 156.92496722411542, 144.66989992571675, 133.30680226263266, 127.55610595223882, 129.963815520595
63, 139.315805312418, 152.0915649404862, 162.9360295580822, 167.35684036307856, 163.37222354347102, 152.730
97479024, 140.33164839766218, 130.45583164479353, 127.41562624579439, 132.4097458970161, 143.4362455030111
2, 156.29193544125332, 165.12094006676477, 167.0800611584806, 160.89147607793163, 149.50994216935362, 137.2
571521790204, 128.8005439723861, 128.02664689577665, 134.93099752412036, 146.570804055413, 158.490205578906
74, 166.30656527756, 166.26392492984655, 158.4598182124002, 146.37089614888595, 134.39254015369377, 127.871
97225470733, 129.20476534373307, 138.17354148942172, 150.893980328174, 162.04406236821708, 167.285830074457
6, 164.27699779883676, 154.7156032765879, 142.11441912435342, 131.64845438059396, 127.37097224623875, 131.1
6292203909197, 141.7633110568545, 154.541853056115, 164.29138180054989, 167.26259605641653, 162.18471521557
92, 151.1817591765427, 138.42637577177908, 129.38482894434026, 127.78438195218112, 134.0686681626386, 146.0
1590442247613, 158.24891419681495, 166.17302097081256, 166.52875255936266, 159.3148811648224, 147.492934035
93563, 135.27065282539547, 128.19142695418805, 128.67516620300592, 136.60318109997266]
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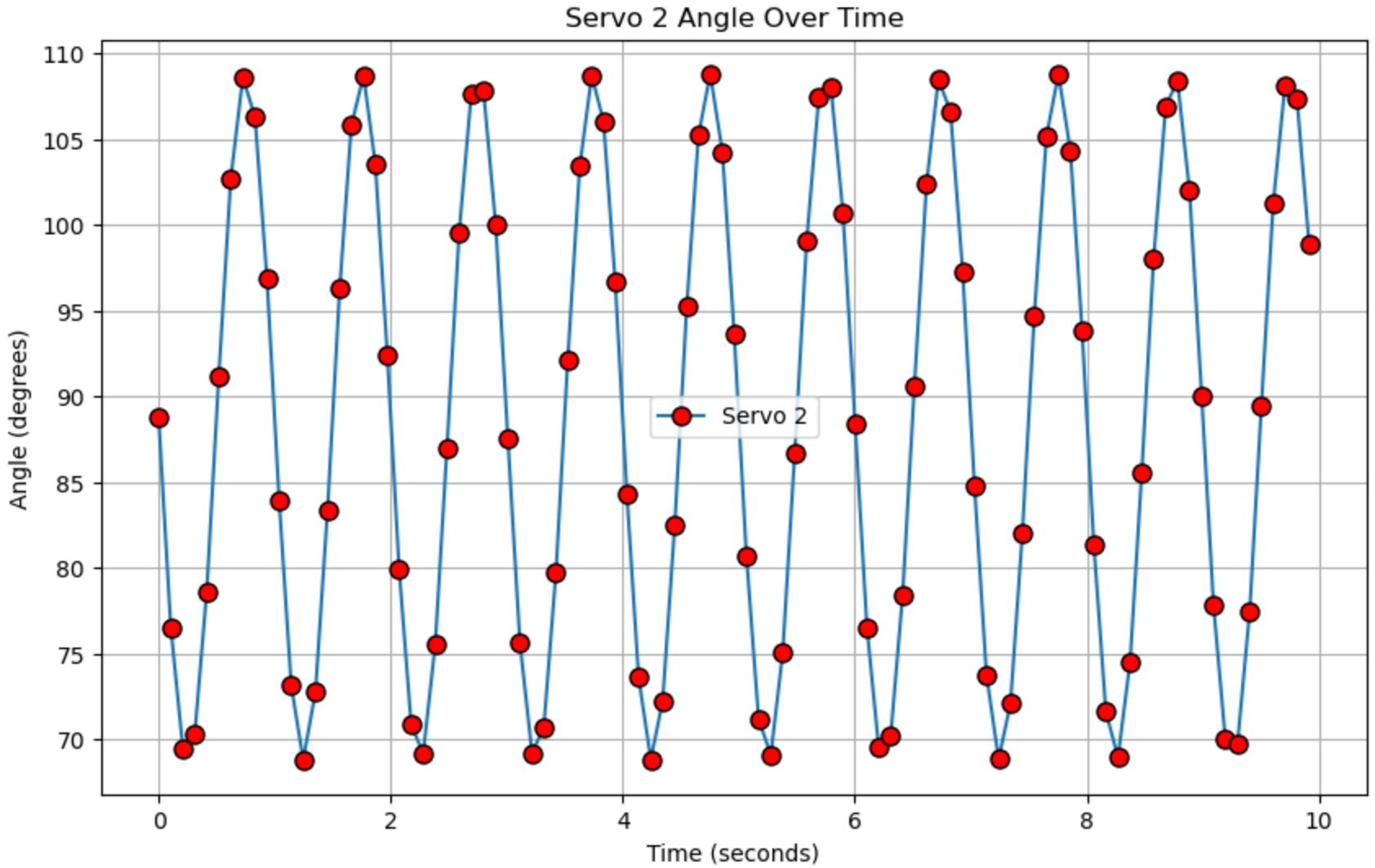
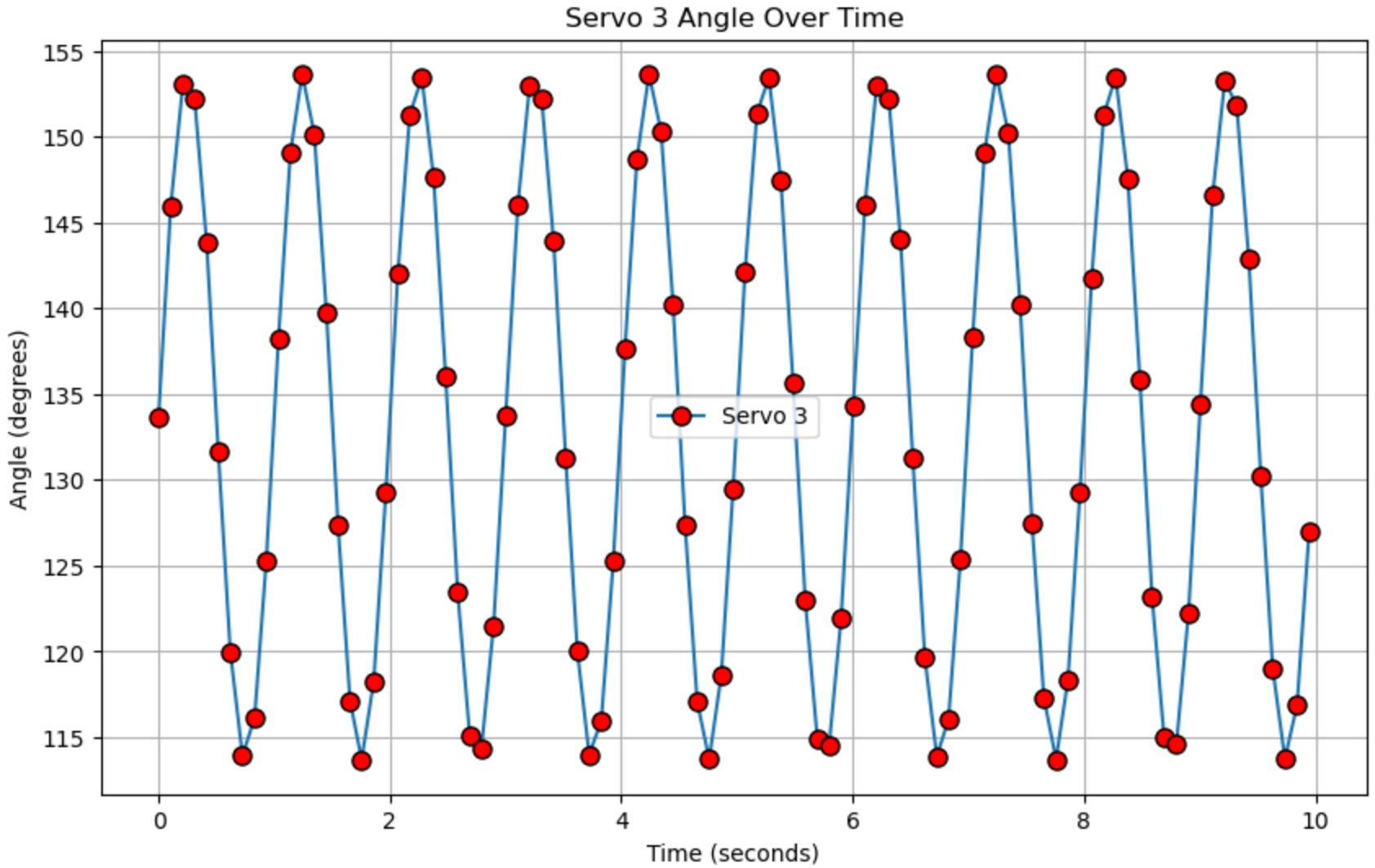
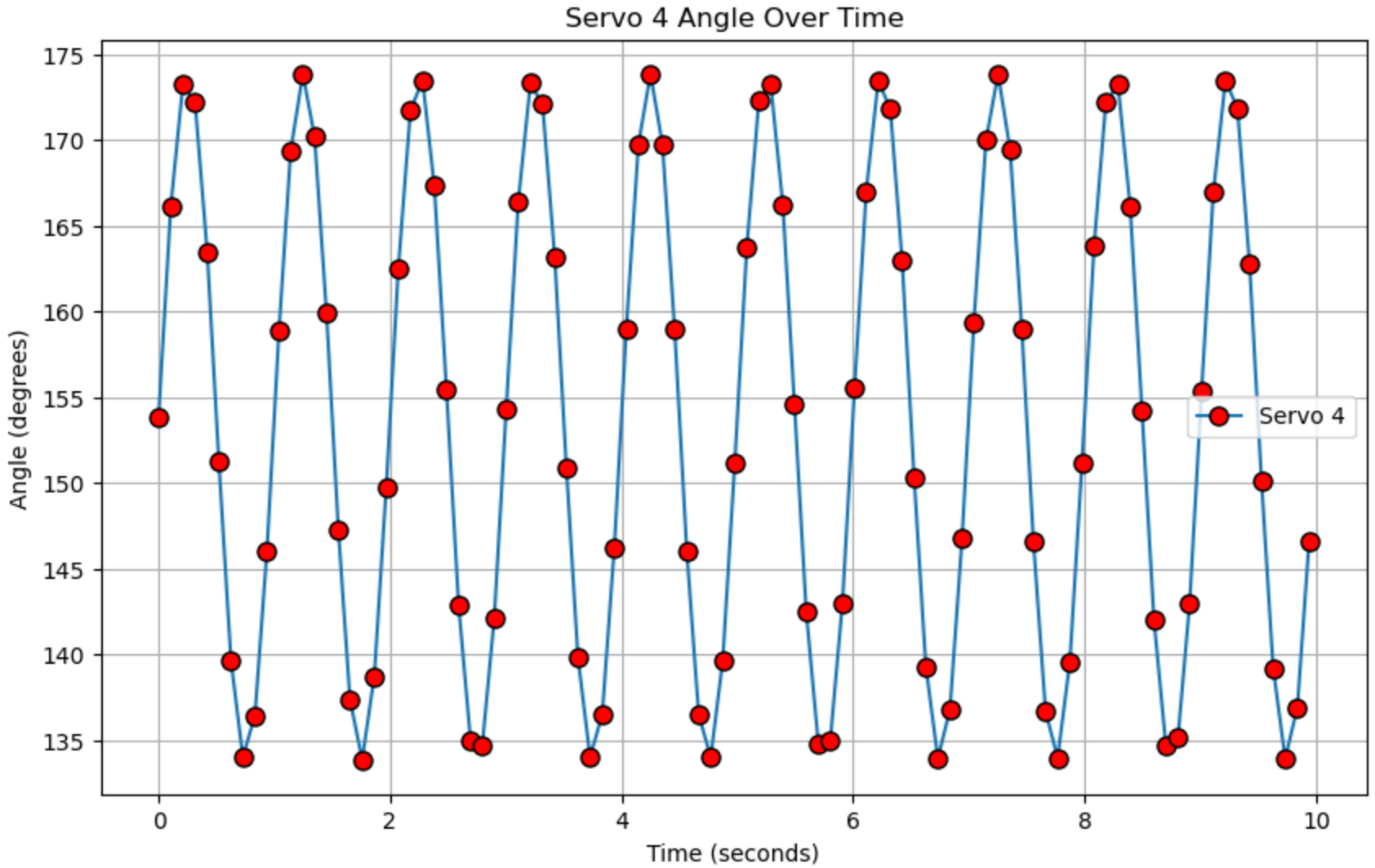

Servo 2 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 2
110
105
100
95
90
85
80
75
70
0
2
4
6
8
10

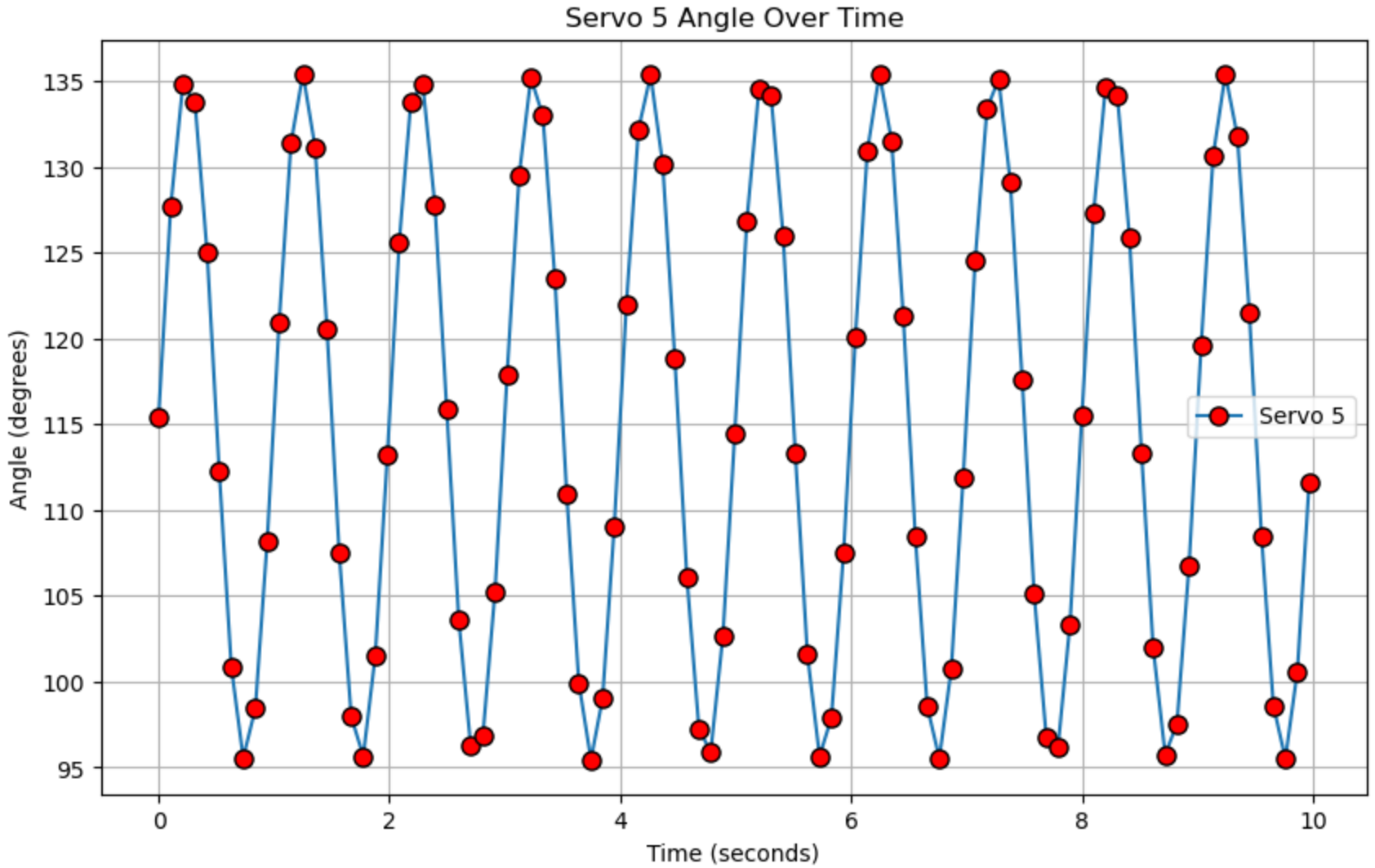
```
Servo 2's angles are:
[88.79032273876653, 76.5319165957312, 69.42452643205596, 70.26561240394676, 78.62871079746131, 91.143392873
90024, 102.70320382332135, 108.57851644745415, 106.27179429382359, 96.8173592114493, 83.94897036729483, 73.
11632036986832, 68.80506178438846, 72.73126375708449, 83.30048808153508, 96.24667479276735, 105.77213002332
874, 108.69432405453715, 103.53537930349835, 92.39815925936641, 79.89831533703332, 70.8648824265376, 69.170
16362201443, 75.51319102636575, 86.92509866808516, 99.52512622876357, 107.62183078000996, 107.8166554331376
7, 100.02751715625223, 87.52107783789417, 75.62311800699479, 69.19136369265632, 70.69726047962897, 79.69939
540758905, 92.05845140712768, 103.40507544170015, 108.68601953865353, 106.04769045679136, 96.6667586527590
7, 84.32375161679944, 73.59113742384464, 68.82347448734885, 72.23469936365652, 82.49274903771526, 95.214252
23096749, 105.20208559494819, 108.79150766703724, 104.23305108931984, 93.60794205546789, 80.7039121309995,
71.18490365706357, 69.07747161876568, 75.02256146651568, 86.66018567299295, 99.02742030987983, 107.38664033
298747, 108.00919440515568, 100.69816991324802, 88.37677872902348, 76.52011272231408, 69.54439661028174, 7
0.2147207060843, 78.36977221437763, 90.62737904210454, 102.34387023962415, 108.46452389213673, 106.59931118
163645, 97.26517655251672, 84.7496489302437, 73.77420567743717, 68.83910311160777, 72.09814268228843, 81.97
905188544044, 94.66100321119438, 105.15526654500431, 108.78611372769609, 104.31934114067299, 93.85236520665
715, 81.33864577733124, 71.61427011846001, 68.93989016429194, 74.52116806796023, 85.54181463546286, 97.9950
5344980605, 106.88340940850178, 108.4028529566884, 102.00086894678411, 90.01116323787399, 77.7981203587755
3, 70.0172813755985, 69.7260053723361, 77.42289186254902, 89.39873229113715, 101.23599610602606, 108.140765
8701863, 107.30444254960743, 98.82942629110977]
```


Servo 3 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 3
155
150
145
140
135
130
125
120
115
0
2
4
6
8
10

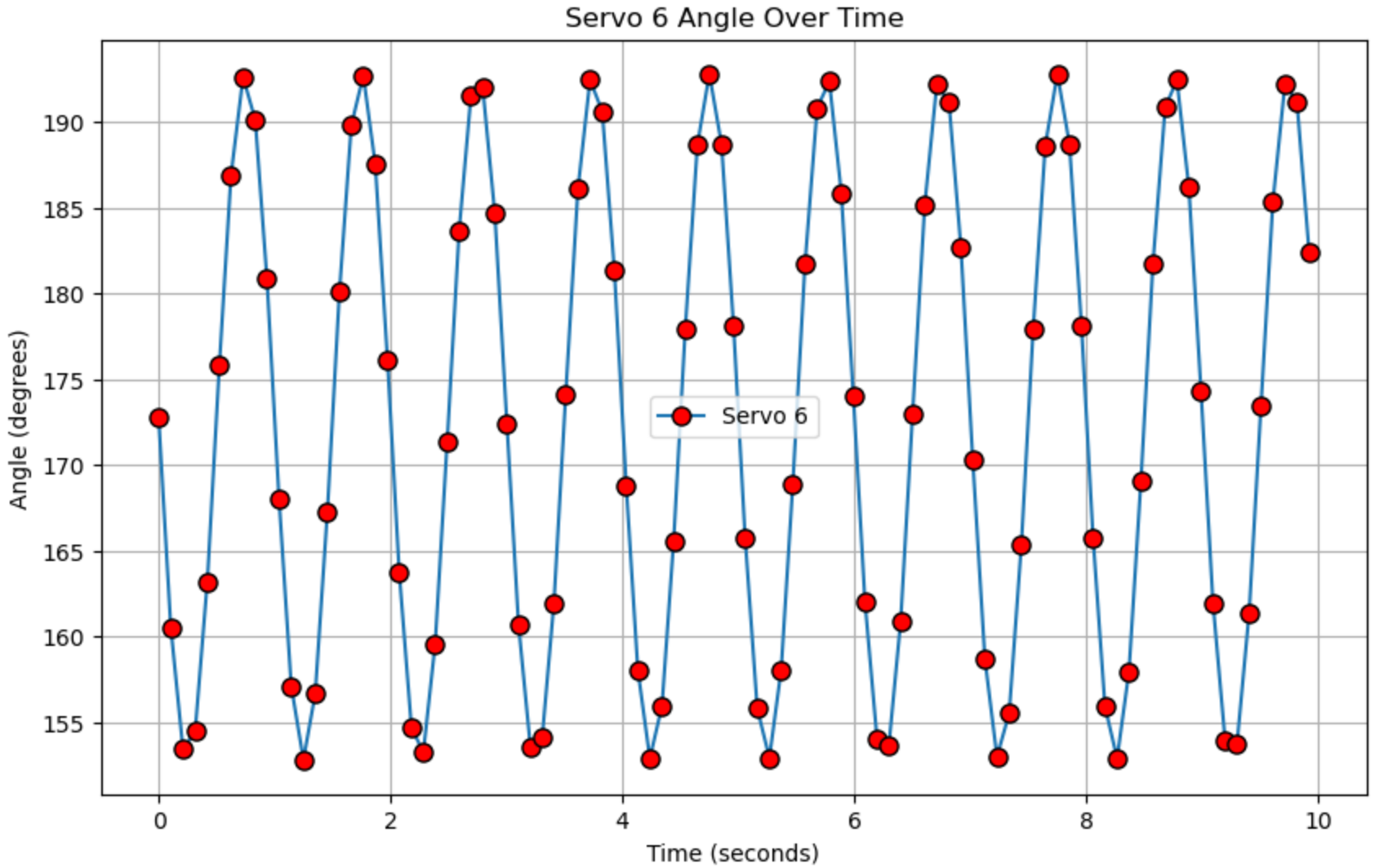
```
Servo 3's angles are:
[133.68979710346832, 145.9477521345781, 153.05624590950643, 152.2327496867768, 143.7925943150072, 131.65189
625242252, 119.97880680644687, 113.92247648675081, 116.12398243057639, 125.2858167842026, 138.179021735603
4, 149.0468327686251, 153.64763990197494, 150.1428161398108, 139.74096532765083, 127.34224997110081, 117.12
57539118999, 113.69095538380829, 118.25493651670064, 129.24432081363423, 141.9844227004933, 151.24165481519
077, 153.4252805787937, 147.604123328775, 136.01741217529988, 123.42699860926608, 115.11012314780251, 114.3
30936847766, 121.49775274141587, 133.78519104911928, 146.02927004957763, 152.94676950553153, 152.2023857520
2455, 143.88472838174818, 131.30492190807732, 120.06021139863326, 113.99259783361718, 115.9443200339368, 12
5.25069792759541, 137.6071917000657, 148.7125942902748, 153.63573342999752, 150.27818380595772, 140.2299030
441241, 127.34162481179138, 117.06445279383134, 113.71538692457861, 118.64242687125069, 129.4991780566845,
142.090496200942, 151.36870488617532, 153.41410809108072, 147.41002011921248, 135.60819829955585, 122.99478
341857622, 114.87126344578179, 114.50648445861123, 121.93810069016241, 134.33245522254836, 146.044300130300
9, 152.94750882673955, 152.1839309559624, 143.99002634580182, 131.30804553549808, 119.63155689725293, 113.8
906752324108, 116.04151822010438, 125.37955683584785, 138.2829998128893, 149.06396228799042, 153.6457475477
8394, 150.16859886880863, 140.23284703020542, 127.43433675931418, 117.30460037700318, 113.70373788480119, 1
18.35595752075355, 129.2423634698868, 141.77386873039686, 151.26870869849822, 153.47700443726563, 147.57848
640744083, 135.84471590306322, 123.20177944352923, 114.95840457429199, 114.57626295802973, 122.217739172335
88, 134.44344928092207, 146.5411270651319, 153.2322368329973, 151.79815940696398, 142.84694561114537, 130.1
9923090370065, 119.00584766442744, 113.75552686769336, 116.86211903710942, 126.98086368431973]
```


Servo 4 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 4
175
170
165
160
155
150
145
140
135
0
2
4
6
8
10

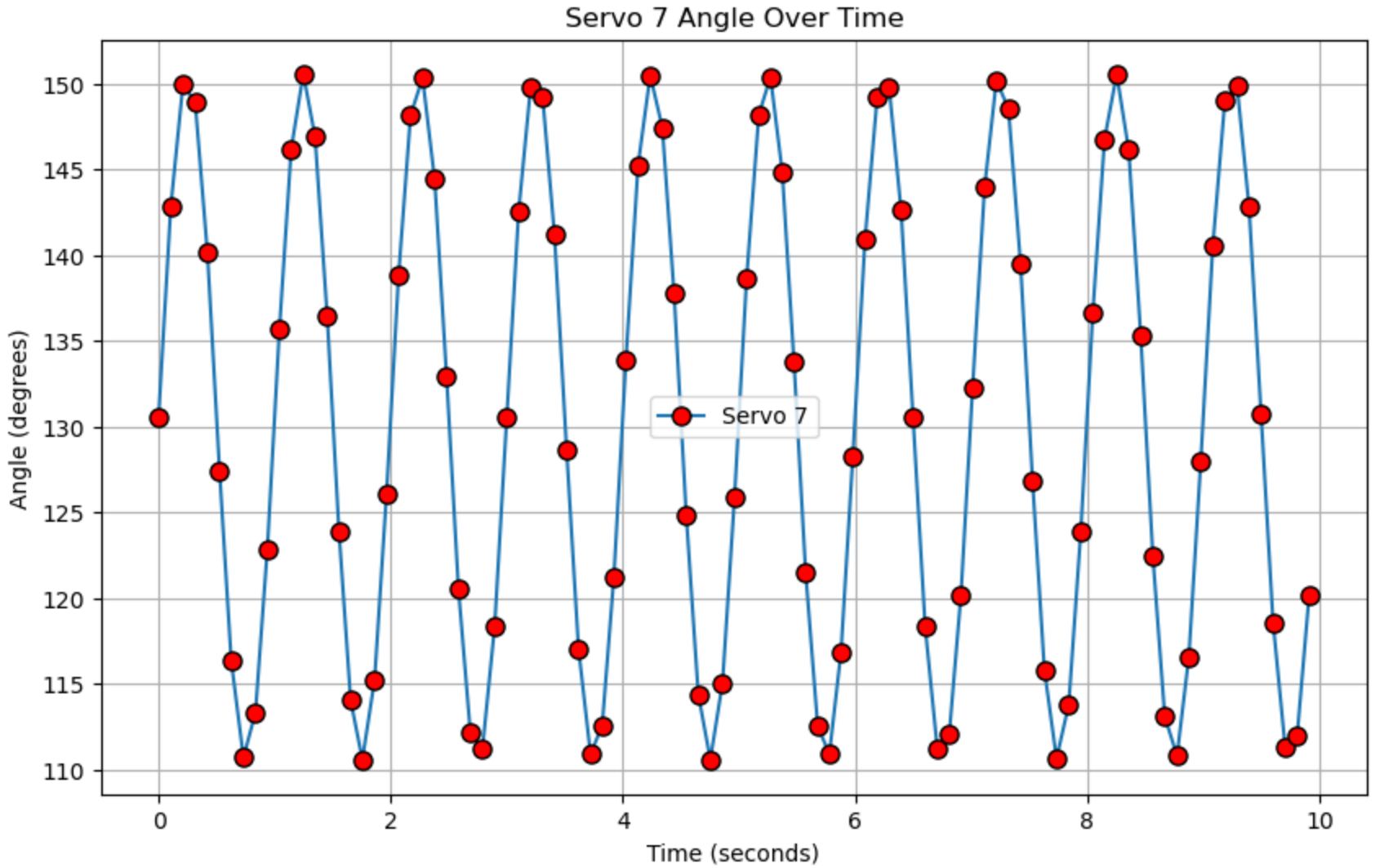
```
Servo 4's angles are:
[153.85006674849544, 166.10796509428442, 173.2152209696584, 172.1879429742606, 163.45402817640516, 151.2255
3544394245, 139.6156519545997, 134.02405811373222, 136.44431813754576, 145.98409566759864, 158.858585551904
47, 169.3678418608676, 173.83529304601055, 170.16757737914858, 159.9221183789347, 147.28562442436478, 137.3
9290233730145, 133.8701980348289, 138.73848652332757, 149.76814534808454, 162.49939184232994, 171.710180504
2276, 173.46314537428447, 167.3024722993913, 155.4541355078258, 142.8890623326933, 134.98394737552903, 134.
6929331189378, 142.09761562310322, 154.30102225525144, 166.43672129250132, 173.29281551463964, 172.05366832
039215, 163.15836349829902, 150.8696539604386, 139.8003240304218, 134.02258492052025, 136.53250444232458, 1
46.245716539624, 158.96529398459154, 169.72883071232062, 173.8399977733035, 169.7308866628251, 158.94574331
469943, 146.01482766171915, 136.51551852470342, 134.00668385514464, 139.62167683177125, 151.18318429647954,
163.7487288637238, 172.3004727008744, 173.24584800208777, 166.19925995069198, 154.5794678175532, 142.481157
6205349, 134.7719076871989, 134.95407709868144, 142.96227142880682, 155.54394620187443, 167.00551872511772,
173.43865959885753, 171.78819714034978, 162.95919500377266, 150.31566304121483, 139.3138053688629, 133.9486
7427304584, 136.78811099226024, 146.74499108431183, 159.37251503723544, 169.98726371972828, 173.83507278769
792, 169.39646555148204, 158.99783783205777, 146.60585785170917, 136.690050374359, 133.97275974619032, 139.
5577489911458, 151.12641836809064, 163.85283217534467, 172.20008351392232, 173.21876759018596, 166.11470766
47271, 154.21772031109887, 142.01284327710607, 134.67702701285606, 135.13209937811627, 142.95289528428245,
155.3624398807522, 166.92683095041542, 173.4382115784127, 171.85214530204084, 162.7361573940931, 150.086815
14295577, 139.21700687591965, 133.93312816665014, 136.9340065201005, 146.62600102926885]
```


Servo 5 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 5
135
130
125
120
115
110
105
100
95
0
2
4
6
8
10

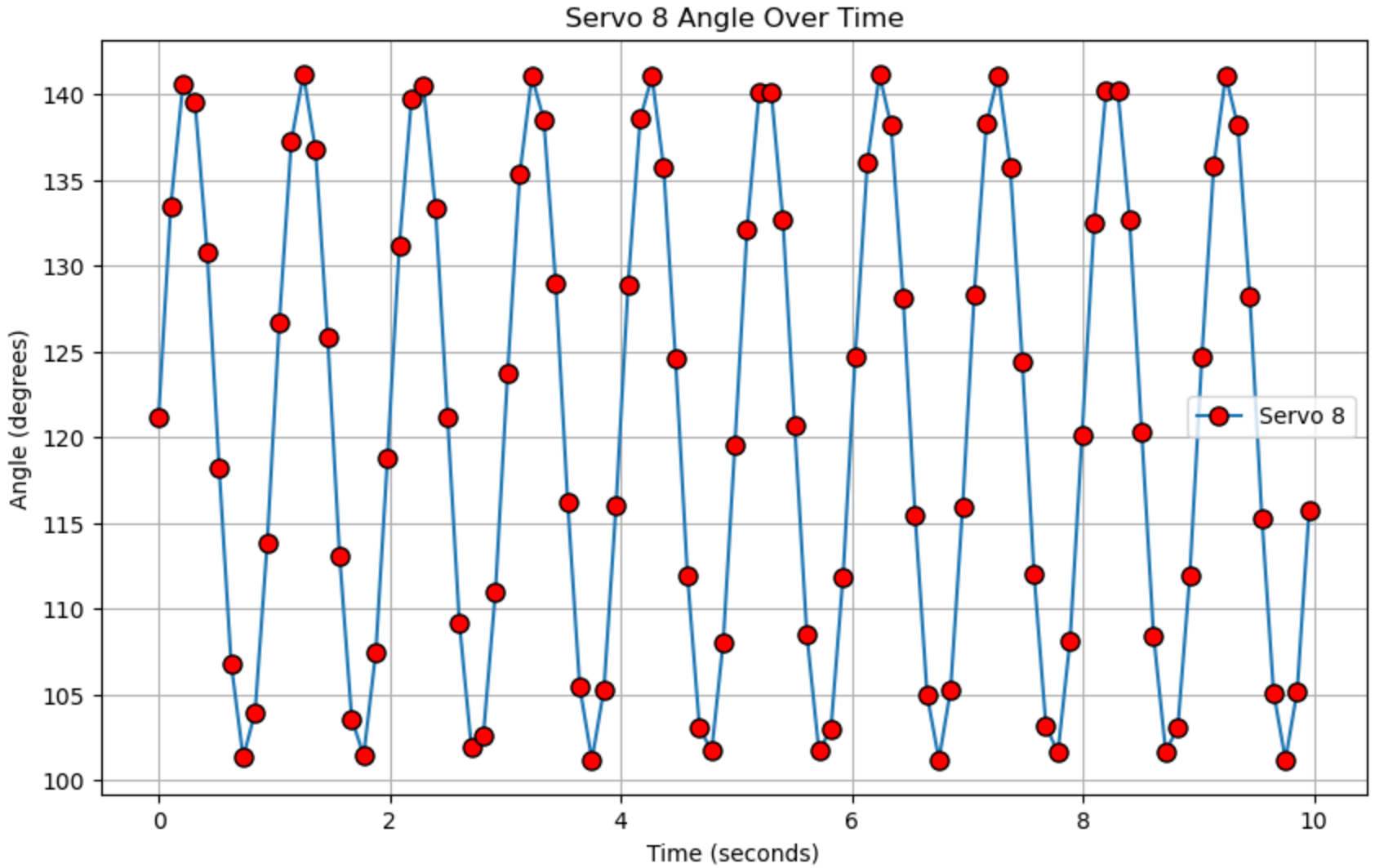
```
Servo 5's angles are:
[115.45105544691218, 127.70924280569173, 134.81596376230715, 133.78540233617906, 125.04609306451879, 112.31
553054668741, 100.85873088067724, 95.55116171568949, 98.42170364927705, 108.21124902728491, 120.97925189252
06, 131.39914538411023, 135.43967081784496, 131.16468055447234, 120.5117272069975, 107.54388782292456, 97.9
5995931054891, 95.65477182402225, 101.52084560945919, 113.21495065820724, 125.58989585014442, 133.827325462
61653, 134.83920467072159, 127.77760100817602, 115.89697864466568, 103.59429586361753, 96.25175198236445, 9
6.8244636137101, 105.219068640057, 117.86858704895867, 129.53202874138836, 135.21070789175275, 132.98823306
500444, 123.47442835035778, 110.89410789418153, 99.92356961460044, 95.44547988340895, 99.01423966999718, 10
9.05206029752313, 122.01291284731768, 132.21236477353744, 135.36982973863138, 130.15985222905942, 118.84096
375455213, 106.041460547672, 97.23247562790911, 95.90024838341049, 102.65806413742807, 114.5065284440056, 1
26.88420818444058, 134.53971524407265, 134.19362946198467, 125.98762305366606, 113.33489262047266, 101.5778
8128220872, 95.6489655008366, 97.89603752033061, 107.47573120467497, 120.05562351118115, 130.9293435745568
7, 135.4330893378223, 131.55069842970656, 121.30604456363795, 108.46699287929432, 98.5666446170201, 95.5274
3889321404, 100.73981748770689, 111.85805140012758, 124.57945442266066, 133.40900582353805, 135.11943249895
2, 129.12068514477798, 117.5697157197729, 105.15280597140426, 96.79580119839422, 96.14988038160257, 103.347
45482666662, 115.49629582215348, 127.32786032823914, 134.63507764716115, 134.14501744945318, 125.9243445826
1809, 113.36677503887695, 102.00746680108654, 95.75228660178789, 97.54102699179232, 106.7756392527272, 119.
58395685303468, 130.68421688158102, 135.42079036836617, 131.8123028461499, 121.4647794625482, 108.512110495
92948, 98.60663508368344, 95.50635195640862, 100.57376670726082, 111.5835742084317]
```


Servo 6 Angle Over Time
Angle (degrees)
190
185
180
175
170
165
160
155
Servo 6
0
2
4
6
8
10
Time (seconds)

```
Servo 6's angles are:
[172.79206045120876, 160.5339042948105, 153.4242144682742, 154.45346428461485, 163.1898340330288, 175.78589
997364432, 186.8914121848065, 192.6175039298061, 190.1085164194404, 180.87408299893463, 168.00482596268455,
157.1040762951665, 152.80066728061414, 156.64082928872915, 167.2641452400789, 180.06273597942902, 189.79173
8771738, 192.70954965934754, 187.50391990928514, 176.10068551321217, 163.72611146981814, 154.7015168484912
5, 153.2187646722079, 159.54825078042438, 171.33507311133732, 183.66764479927832, 191.57472902884126, 192.0
2375095968364, 184.67197690440167, 172.41886479950568, 160.6620435051761, 153.5717339962446, 154.0841232948
0757, 161.9025678656668, 174.13584504247936, 186.0758326162164, 192.44634052926807, 190.61412547318236, 18
1.39189567332696, 168.79874698149402, 158.0324326227754, 152.8777805189324, 155.9477965796735, 165.53120677
791358, 177.91414350255963, 188.65028419533627, 192.79949963136107, 188.6833884348614, 178.11233537414452,
165.6871226982381, 155.7900661197859, 152.90667177026478, 158.03524143844325, 168.83597613087352, 181.69291
039942811, 190.81133786819572, 192.35784898307307, 185.85220079827909, 173.98819495997176, 162.001563285696
25, 153.97468657911247, 153.67757580822914, 160.8357534686238, 173.00798247445113, 185.1594012814481, 192.1
5644957653853, 191.174938658221, 182.70008731590661, 170.27137297857163, 158.64691580997544, 152.9760681404
2985, 155.51831053088966, 165.32280390545898, 177.94573692981876, 188.61726447648414, 192.79994835706668, 1
88.71701020992822, 178.1078581583105, 165.691239133374, 155.89118975194293, 152.88328866933645, 157.9201658
9812573, 169.0715084350339, 181.75723209627333, 190.84046275519879, 192.44061300126097, 186.1911270481603,
174.26779536162246, 161.92096409494167, 153.950748587659, 153.70835473652897, 161.34672691623283, 173.44718
4947633, 185.36126979958587, 192.24693250048637, 191.1387855455773, 182.3968154251557]
```


Servo 7 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 7
150
145
140
135
130
125
120
115
110
0
2
4
6
8
10

```
Servo 7's angles are:
[130.56916793173153, 142.83014188781368, 149.9367432266198, 148.90414922162822, 140.17733827057762, 127.434
7907314149, 116.32824030558518, 110.70084333434656, 113.31567771505225, 122.82557937820555, 135.70301539624
376, 146.1785629551386, 150.55597245440634, 146.9010105330746, 136.47924026232863, 123.91441441943319, 114.
01896312831352, 110.57244553542634, 115.20345049659679, 126.0159460260989, 138.79324923506832, 148.12761534
448012, 150.3270701560246, 144.41352079017946, 132.93299568016658, 120.52536402098434, 112.11338966800739,
111.18549252034171, 118.29927678648556, 130.5628762139674, 142.54042217692444, 149.76723294147567, 149.2026
152388142, 141.17651996496076, 128.61194187911073, 117.0242664823243, 110.87634991832776, 112.5805749892989
4, 121.19374076907546, 133.90718758236926, 145.2277585631475, 150.48082745149512, 147.4102508711863, 137.74
761293759417, 124.79113005609197, 114.38897402947299, 110.56510433684198, 115.04515764736809, 125.871529534
4958, 138.6628267442455, 148.1749118891011, 150.3707146413458, 144.86128156475658, 133.74517881326668, 121.
4427249229527, 112.52372985786673, 110.89885611487031, 116.83675656445983, 128.23591870074347, 140.90581746
094796, 149.22895237030707, 149.81050938160277, 142.62482097515402, 130.51302188157038, 118.30166764605181,
111.20833893891039, 112.0874581440072, 120.18104875144606, 132.2368692102095, 143.973232218057, 150.1685360
3489113, 148.510086979146, 139.5232052814274, 126.80634429141507, 115.79491808892634, 110.632216027776, 11
3.77333697238419, 123.82259786229156, 136.60260379297335, 146.7523663377429, 150.54917017829143, 146.116559
69957403, 135.33809829980063, 122.42467229416911, 113.07094057865149, 110.79578804473874, 116.5569644794004
3, 127.95774406394108, 140.53881144695367, 149.0529398823755, 149.85997506342162, 142.79947972353685, 130.7
0279082663885, 118.56669884647219, 111.29296526107433, 111.92906111267645, 120.15987686241783]
```


Servo 8 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 8
100
105
110
115
120
125
130
135
140
0
2
4
6
8
10

```
Servo 8's angles are:
[121.20790958823136, 133.46647432951318, 140.5750946516671, 139.54609433818564, 130.80543609625957, 118.228
52809008307, 106.81678095753173, 101.32716429656061, 103.97339950892403, 113.82255900528553, 126.7249136664
5501, 137.28392131438267, 141.19554628426366, 136.77736379969843, 125.80816031187645, 113.07499205793202, 1
03.6014885452953, 101.43245136623968, 107.44953717832303, 118.79336170674017, 131.18698928163883, 139.71620
8639642, 140.53119585827864, 133.32526080358863, 121.14106765930876, 109.21019962532634, 101.9476230009871
2, 102.60461101846126, 111.02522844277917, 123.72324758329152, 135.31412214810072, 141.0382205113711, 138.5
4423778551043, 128.94737696286148, 116.17973235181042, 105.41393899414038, 101.20006577293321, 105.31109650
289702, 115.98729932612542, 128.92339505713164, 138.57567372158508, 141.04939625230128, 135.7043880295966,
124.63004138754522, 111.88898055676174, 103.06131491156319, 101.70479689594491, 108.0607988589799, 119.5187
4213530095, 132.09353785072767, 140.0910935228436, 140.1482917419645, 132.71121525043634, 120.6596970411011
8, 108.51563177530076, 101.69883456218643, 102.99080238813451, 111.88394294550072, 124.68994425379478, 136.
0315509884848, 141.14336662824348, 138.1912488710538, 128.15202653400863, 115.42341368240253, 104.952052771
9071, 101.20256056501574, 105.26352705585933, 115.97139232112744, 128.33093513137325, 138.27083667377102, 1
41.10588736037082, 135.78471373108675, 124.42829615499282, 112.00920383628076, 103.19309275687755, 101.6046
3162907357, 108.13504590219189, 120.11706605556597, 132.5258991275118, 140.1705724101982, 140.204799452554
3, 132.72404997510876, 120.27832020288204, 108.45462401228626, 101.68029558082316, 103.08243695220844, 111.
89775840727208, 124.68696462322646, 135.84039575507504, 141.09423483643494, 138.19203901533552, 128.1807848
5265744, 115.24599830215108, 105.12466608427239, 101.2005711631782, 105.19914720423685, 115.75766263436013]
```

In [3]:
```
# forward motion with 0.25 sec sleep
start_time = time.time()
duration = 20.0  # seconds
angular_frequency = 2 * math.pi / 1

while time.time() - start_time < duration:      # while the current time stamp - start time is less than 1(
    current_time = time.time() - start_time     # current time = time stamp - start time

    # Move front and back legs
    servo1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 1 is at {servo1} degrees. t={current_time}.")
    servo2 = 88.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    print(f"Servo 2 is at {servo2} degrees. t={current_time}.")
    servo5 = 115.44 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 5 is at {servo5} degrees. t={current_time}.")
    servo6 = 172.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    print(f"Servo 6 is at {servo6} degrees. t={current_time}.")
    time.sleep(0.25)

    # Move left and right legs
    servo3 = 133.68 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 3 is at {servo3} degrees. t={current_time}.")
```

```
    servo4 = 153.84 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 4 is at {servo4} degrees. t={current_time}.")
    servo7 = 130.56 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 7 is at {servo7} degrees. t={current_time}.")
    servo8 = 121.20 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 8 is at {servo8} degrees. t={current_time}.\n")
    time.sleep(0.25)

# graph servo 1 angles
start_time = time.time()
duration = 20.0

times = []
servo1_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo1_angles.append(servo1)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo1_angles, label='Servo 1', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 1 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 1's angles are: \n{servo1_angles}")

# graph servo 2 angles
start_time = time.time()
duration = 20.0

times = []
servo2_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo2 = 88.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    servo2_angles.append(servo2)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo2_angles, label='Servo 2', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 2 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 2's angles are: \n{servo2_angles}")

# graph servo 3 angles
start_time = time.time()
duration = 20.0

times = []
servo3_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo3 = 133.68 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo3_angles.append(servo3)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo3_angles, label='Servo 3', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 3 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 3's angles are: \n{servo3_angles}")

# graph servo 4 angles
```

```
start_time = time.time()
duration = 20.0

times = []
servo4_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo4 = 153.84 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo4_angles.append(servo4)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo4_angles, label='Servo 4', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 4 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 4's angles are: \n{servo4_angles}")

# graph servo 5 angles
start_time = time.time()
duration = 20.0

times = []
servo5_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo5 = 115.44 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo5_angles.append(servo5)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo5_angles, label='Servo 5', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
```

```
plt.ylabel('Angle (degrees)')
plt.title('Servo 5 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 5's angles are: \n{servo5_angles}")

# graph servo 6 angles
start_time = time.time()
duration = 20.0

times = []
servo6_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo6 = 172.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    servo6_angles.append(servo6)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo6_angles, label='Servo 6', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 6 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 6's angles are: \n{servo6_angles}")

# graph servo 7 angles
start_time = time.time()
duration = 20.0

times = []
servo7_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
```

```
    servo7 = 130.56 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo7_angles.append(servo7)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo7_angles, label='Servo 7', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 7 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 7's angles are: \n{servo7_angles}")

# graph servo 8 angles
start_time = time.time()
duration = 20.0

times = []
servo8_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo8 = 121.20 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    servo8_angles.append(servo8)

    time.sleep(0.25)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo8_angles, label='Servo 8', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 8 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
print(f"Servo 8's angles are: \n{servo8_angles}")
```

```
Servo 1 is at 147.37734716337545 degrees. t=0.0001380443572998047.
Servo 2 is at 88.78265283662456 degrees. t=0.0001380443572998047.
Servo 5 is at 115.45734716337543 degrees. t=0.0001380443572998047.
Servo 6 is at 172.78265283662458 degrees. t=0.0001380443572998047.
Servo 3 is at 133.69734716337544 degrees. t=0.0001380443572998047.
Servo 4 is at 153.85734716337544 degrees. t=0.0001380443572998047.
Servo 7 is at 130.57734716337544 degrees. t=0.0001380443572998047.
Servo 8 is at 121.21734716337544 degrees. t=0.0001380443572998047.

Servo 1 is at 146.03823520152693 degrees. t=0.5105259418487549.
Servo 2 is at 90.1217647984731 degrees. t=0.5105259418487549.
Servo 5 is at 114.1182352015269 degrees. t=0.5105259418487549.
Servo 6 is at 174.1217647984731 degrees. t=0.5105259418487549.
Servo 3 is at 132.35823520152692 degrees. t=0.5105259418487549.
Servo 4 is at 152.51823520152692 degrees. t=0.5105259418487549.
Servo 7 is at 129.23823520152692 degrees. t=0.5105259418487549.
Servo 8 is at 119.8782352015269 degrees. t=0.5105259418487549.

Servo 1 is at 149.58552573431132 degrees. t=1.017746925354004.
Servo 2 is at 86.57447426568872 degrees. t=1.017746925354004.
Servo 5 is at 117.6655257343113 degrees. t=1.017746925354004.
Servo 6 is at 170.57447426568874 degrees. t=1.017746925354004.
Servo 3 is at 135.9055257343113 degrees. t=1.017746925354004.
Servo 4 is at 156.0655257343113 degrees. t=1.017746925354004.
Servo 7 is at 132.7855257343113 degrees. t=1.017746925354004.
Servo 8 is at 123.42552573431131 degrees. t=1.017746925354004.

Servo 1 is at 144.04876570283224 degrees. t=1.5264718532562256.
Servo 2 is at 92.11123429716778 degrees. t=1.5264718532562256.
Servo 5 is at 112.12876570283221 degrees. t=1.5264718532562256.
Servo 6 is at 176.11123429716778 degrees. t=1.5264718532562256.
Servo 3 is at 130.36876570283223 degrees. t=1.5264718532562256.
Servo 4 is at 150.52876570283223 degrees. t=1.5264718532562256.
Servo 7 is at 127.24876570283222 degrees. t=1.5264718532562256.
Servo 8 is at 117.88876570283222 degrees. t=1.5264718532562256.

Servo 1 is at 151.59817061229478 degrees. t=2.0339839458465576.
Servo 2 is at 84.56182938770523 degrees. t=2.0339839458465576.
Servo 5 is at 119.67817061229476 degrees. t=2.0339839458465576.
Servo 6 is at 168.56182938770525 degrees. t=2.0339839458465576.
Servo 3 is at 137.91817061229477 degrees. t=2.0339839458465576.
Servo 4 is at 158.07817061229477 degrees. t=2.0339839458465576.
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Servo 7 is at 134.79817061229477 degrees. t=2.0339839458465576.
Servo 8 is at 125.43817061229477 degrees. t=2.0339839458465576.

Servo 1 is at 142.67802482667076 degrees. t=2.537606954574585.
Servo 2 is at 93.48197517332925 degrees. t=2.537606954574585.
Servo 5 is at 110.75802482667075 degrees. t=2.537606954574585.
Servo 6 is at 177.48197517332926 degrees. t=2.537606954574585.
Servo 3 is at 128.99802482667076 degrees. t=2.537606954574585.
Servo 4 is at 149.15802482667075 degrees. t=2.537606954574585.
Servo 7 is at 125.87802482667075 degrees. t=2.537606954574585.
Servo 8 is at 116.51802482667075 degrees. t=2.537606954574585.

Servo 1 is at 152.7895068176749 degrees. t=3.0437557697296143.
Servo 2 is at 83.37049318232513 degrees. t=3.0437557697296143.
Servo 5 is at 120.86950681767487 degrees. t=3.0437557697296143.
Servo 6 is at 167.37049318232513 degrees. t=3.0437557697296143.
Servo 3 is at 139.10950681767488 degrees. t=3.0437557697296143.
Servo 4 is at 159.26950681767488 degrees. t=3.0437557697296143.
Servo 7 is at 135.98950681767488 degrees. t=3.0437557697296143.
Servo 8 is at 126.62950681767488 degrees. t=3.0437557697296143.

Servo 1 is at 140.9752969940771 degrees. t=3.551712989807129.
Servo 2 is at 95.1847030059229 degrees. t=3.551712989807129.
Servo 5 is at 109.0552969940771 degrees. t=3.551712989807129.
Servo 6 is at 179.18470300592293 degrees. t=3.551712989807129.
Servo 3 is at 127.2952969940771 degrees. t=3.551712989807129.
Servo 4 is at 147.4552969940771 degrees. t=3.551712989807129.
Servo 7 is at 124.1752969940771 degrees. t=3.551712989807129.
Servo 8 is at 114.8152969940771 degrees. t=3.551712989807129.

Servo 1 is at 154.6875391836981 degrees. t=4.059700965881348.
Servo 2 is at 81.47246081630192 degrees. t=4.059700965881348.
Servo 5 is at 122.76753918369808 degrees. t=4.059700965881348.
Servo 6 is at 165.47246081630192 degrees. t=4.059700965881348.
Servo 3 is at 141.0075391836981 degrees. t=4.059700965881348.
Servo 4 is at 161.1675391836981 degrees. t=4.059700965881348.
Servo 7 is at 137.8875391836981 degrees. t=4.059700965881348.
Servo 8 is at 128.52753918369808 degrees. t=4.059700965881348.

Servo 1 is at 138.8028317907721 degrees. t=4.570365905761719.
Servo 2 is at 97.35716820922791 degrees. t=4.570365905761719.
Servo 5 is at 106.88283179077209 degrees. t=4.570365905761719.
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Servo 6 is at 181.35716820922792 degrees. t=4.570365905761719.
Servo 3 is at 125.1228317907721 degrees. t=4.570365905761719.
Servo 4 is at 145.2828317907721 degrees. t=4.570365905761719.
Servo 7 is at 122.00283179077209 degrees. t=4.570365905761719.
Servo 8 is at 112.64283179077208 degrees. t=4.570365905761719.

Servo 1 is at 156.55771398537723 degrees. t=5.076054811477661.
Servo 2 is at 79.60228601462278 degrees. t=5.076054811477661.
Servo 5 is at 124.63771398537722 degrees. t=5.076054811477661.
Servo 6 is at 163.6022860146228 degrees. t=5.076054811477661.
Servo 3 is at 142.87771398537723 degrees. t=5.076054811477661.
Servo 4 is at 163.03771398537722 degrees. t=5.076054811477661.
Servo 7 is at 139.75771398537722 degrees. t=5.076054811477661.
Servo 8 is at 130.3977139853772 degrees. t=5.076054811477661.

Servo 1 is at 137.36756006390289 degrees. t=5.583263874053955.
Servo 2 is at 98.79243993609708 degrees. t=5.583263874053955.
Servo 5 is at 105.44756006390286 degrees. t=5.583263874053955.
Servo 6 is at 182.79243993609708 degrees. t=5.583263874053955.
Servo 3 is at 123.68756006390286 degrees. t=5.583263874053955.
Servo 4 is at 143.84756006390288 degrees. t=5.583263874053955.
Servo 7 is at 120.56756006390286 degrees. t=5.583263874053955.
Servo 8 is at 111.20756006390286 degrees. t=5.583263874053955.

Servo 1 is at 158.24162523686425 degrees. t=6.0915608406066895.
Servo 2 is at 77.91837476313583 degrees. t=6.0915608406066895.
Servo 5 is at 126.32162523686422 degrees. t=6.0915608406066895.
Servo 6 is at 161.91837476313583 degrees. t=6.0915608406066895.
Servo 3 is at 144.56162523686424 degrees. t=6.0915608406066895.
Servo 4 is at 164.72162523686424 degrees. t=6.0915608406066895.
Servo 7 is at 141.44162523686424 degrees. t=6.0915608406066895.
Servo 8 is at 132.08162523686423 degrees. t=6.0915608406066895.

Servo 1 is at 135.52453364442042 degrees. t=6.600785970687866.
Servo 2 is at 100.63546635557965 degrees. t=6.600785970687866.
Servo 5 is at 103.6045336444204 degrees. t=6.600785970687866.
Servo 6 is at 184.63546635557967 degrees. t=6.600785970687866.
Servo 3 is at 121.84453364442041 degrees. t=6.600785970687866.
Servo 4 is at 142.0045336444204 degrees. t=6.600785970687866.
Servo 7 is at 118.7245336444204 degrees. t=6.600785970687866.
Servo 8 is at 109.3645336444204 degrees. t=6.600785970687866.
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Servo 1 is at 160.16473482001152 degrees. t=7.110581874847412.
Servo 2 is at 75.99526517998855 degrees. t=7.110581874847412.
Servo 5 is at 128.2447348200115 degrees. t=7.110581874847412.
Servo 6 is at 159.99526517998856 degrees. t=7.110581874847412.
Servo 3 is at 146.4847348200115 degrees. t=7.110581874847412.
Servo 4 is at 166.6447348200115 degrees. t=7.110581874847412.
Servo 7 is at 143.3647348200115 degrees. t=7.110581874847412.
Servo 8 is at 134.0047348200115 degrees. t=7.110581874847412.

Servo 1 is at 133.5953152014249 degrees. t=7.620806932449341.
Servo 2 is at 102.56468479857506 degrees. t=7.620806932449341.
Servo 5 is at 101.6753152014249 degrees. t=7.620806932449341.
Servo 6 is at 186.56468479857506 degrees. t=7.620806932449341.
Servo 3 is at 119.9153152014249 degrees. t=7.620806932449341.
Servo 4 is at 140.0753152014249 degrees. t=7.620806932449341.
Servo 7 is at 116.7953152014249 degrees. t=7.620806932449341.
Servo 8 is at 107.4353152014249 degrees. t=7.620806932449341.

Servo 1 is at 161.69721629525608 degrees. t=8.127210855484009.
Servo 2 is at 74.46278370474398 degrees. t=8.127210855484009.
Servo 5 is at 129.77721629525607 degrees. t=8.127210855484009.
Servo 6 is at 158.462783704744 degrees. t=8.127210855484009.
Servo 3 is at 148.01721629525608 degrees. t=8.127210855484009.
Servo 4 is at 168.17721629525607 degrees. t=8.127210855484009.
Servo 7 is at 144.89721629525607 degrees. t=8.127210855484009.
Servo 8 is at 135.53721629525606 degrees. t=8.127210855484009.

Servo 1 is at 132.14748020034764 degrees. t=8.637553930282593.
Servo 2 is at 104.01251979965234 degrees. t=8.637553930282593.
Servo 5 is at 100.22748020034761 degrees. t=8.637553930282593.
Servo 6 is at 188.01251979965235 degrees. t=8.637553930282593.
Servo 3 is at 118.46748020034762 degrees. t=8.637553930282593.
Servo 4 is at 138.62748020034763 degrees. t=8.637553930282593.
Servo 7 is at 115.34748020034762 degrees. t=8.637553930282593.
Servo 8 is at 105.98748020034762 degrees. t=8.637553930282593.

Servo 1 is at 162.96269963544967 degrees. t=9.142424821853638.
Servo 2 is at 73.19730036455039 degrees. t=9.142424821853638.
Servo 5 is at 131.04269963544965 degrees. t=9.142424821853638.
Servo 6 is at 157.19730036455041 degrees. t=9.142424821853638.
Servo 3 is at 149.28269963544966 degrees. t=9.142424821853638.
Servo 4 is at 169.44269963544966 degrees. t=9.142424821853638.
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Servo 7 is at 146.16269963544966 degrees. t=9.142424821853638.
Servo 8 is at 136.80269963544964 degrees. t=9.142424821853638.

Servo 1 is at 131.38935915994284 degrees. t=9.647194862365723.
Servo 2 is at 104.77064084005714 degrees. t=9.647194862365723.
Servo 5 is at 99.46935915994281 degrees. t=9.647194862365723.
Servo 6 is at 188.77064084005715 degrees. t=9.647194862365723.
Servo 3 is at 117.70935915994282 degrees. t=9.647194862365723.
Servo 4 is at 137.86935915994283 degrees. t=9.647194862365723.
Servo 7 is at 114.58935915994282 degrees. t=9.647194862365723.
Servo 8 is at 105.22935915994282 degrees. t=9.647194862365723.

Servo 1 is at 163.9149521782382 degrees. t=10.155189037322998.
Servo 2 is at 72.24504782176186 degrees. t=10.155189037322998.
Servo 5 is at 131.99495217823818 degrees. t=10.155189037322998.
Servo 6 is at 156.2450478217619 degrees. t=10.155189037322998.
Servo 3 is at 150.2349521782382 degrees. t=10.155189037322998.
Servo 4 is at 170.39495217823819 degrees. t=10.155189037322998.
Servo 7 is at 147.11495217823818 degrees. t=10.155189037322998.
Servo 8 is at 137.75495217823817 degrees. t=10.155189037322998.

Servo 1 is at 130.2993336703361 degrees. t=10.662619829177856.
Servo 2 is at 105.86066632966396 degrees. t=10.662619829177856.
Servo 5 is at 98.37933367033608 degrees. t=10.662619829177856.
Servo 6 is at 189.86066632966396 degrees. t=10.662619829177856.
Servo 3 is at 116.61933367033609 degrees. t=10.662619829177856.
Servo 4 is at 136.7793336703361 degrees. t=10.662619829177856.
Servo 7 is at 113.49933367033609 degrees. t=10.662619829177856.
Servo 8 is at 104.13933367033609 degrees. t=10.662619829177856.

Servo 1 is at 164.83711363775996 degrees. t=11.169193983078003.
Servo 2 is at 71.32288636224004 degrees. t=11.169193983078003.
Servo 5 is at 132.91711363775994 degrees. t=11.169193983078003.
Servo 6 is at 155.32288636224004 degrees. t=11.169193983078003.
Servo 3 is at 151.15711363775995 degrees. t=11.169193983078003.
Servo 4 is at 171.31711363775995 degrees. t=11.169193983078003.
Servo 7 is at 148.03711363775994 degrees. t=11.169193983078003.
Servo 8 is at 138.67711363775993 degrees. t=11.169193983078003.

Servo 1 is at 129.34064678376572 degrees. t=11.678570985794067.
Servo 2 is at 106.81935321623433 degrees. t=11.678570985794067.
Servo 5 is at 97.42064678376569 degrees. t=11.678570985794067.
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Servo 6 is at 190.81935321623433 degrees. t=11.678570985794067.
Servo 3 is at 115.6606467837657 degrees. t=11.678570985794067.
Servo 4 is at 135.8206467837657 degrees. t=11.678570985794067.
Servo 7 is at 112.5406467837657 degrees. t=11.678570985794067.
Servo 8 is at 103.1806467837657 degrees. t=11.678570985794067.

Servo 1 is at 165.76964542661335 degrees. t=12.186101913452148.
Servo 2 is at 70.39035457338663 degrees. t=12.186101913452148.
Servo 5 is at 133.84964542661334 degrees. t=12.186101913452148.
Servo 6 is at 154.39035457338665 degrees. t=12.186101913452148.
Servo 3 is at 152.08964542661334 degrees. t=12.186101913452148.
Servo 4 is at 172.24964542661334 degrees. t=12.186101913452148.
Servo 7 is at 148.96964542661334 degrees. t=12.186101913452148.
Servo 8 is at 139.60964542661333 degrees. t=12.186101913452148.

Servo 1 is at 128.67728268473184 degrees. t=12.691913843154907.
Servo 2 is at 107.48271731526819 degrees. t=12.691913843154907.
Servo 5 is at 96.75728268473183 degrees. t=12.691913843154907.
Servo 6 is at 191.4827173152682 degrees. t=12.691913843154907.
Servo 3 is at 114.99728268473184 degrees. t=12.691913843154907.
Servo 4 is at 135.15728268473185 degrees. t=12.691913843154907.
Servo 7 is at 111.87728268473184 degrees. t=12.691913843154907.
Servo 8 is at 102.51728268473184 degrees. t=12.691913843154907.

Servo 1 is at 166.41976745979295 degrees. t=13.20100474357605.
Servo 2 is at 69.74023254020705 degrees. t=13.20100474357605.
Servo 5 is at 134.49976745979293 degrees. t=13.20100474357605.
Servo 6 is at 153.74023254020707 degrees. t=13.20100474357605.
Servo 3 is at 152.73976745979294 degrees. t=13.20100474357605.
Servo 4 is at 172.89976745979294 degrees. t=13.20100474357605.
Servo 7 is at 149.61976745979294 degrees. t=13.20100474357605.
Servo 8 is at 140.25976745979293 degrees. t=13.20100474357605.

Servo 1 is at 127.9690809247361 degrees. t=13.710620880126953.
Servo 2 is at 108.19091907526392 degrees. t=13.710620880126953.
Servo 5 is at 96.04908092473609 degrees. t=13.710620880126953.
Servo 6 is at 192.19091907526393 degrees. t=13.710620880126953.
Servo 3 is at 114.2890809247361 degrees. t=13.710620880126953.
Servo 4 is at 134.4490809247361 degrees. t=13.710620880126953.
Servo 7 is at 111.1690809247361 degrees. t=13.710620880126953.
Servo 8 is at 101.8090809247361 degrees. t=13.710620880126953.
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Servo 1 is at 166.9909715532723 degrees. t=14.21937894821167.
Servo 2 is at 69.16902844672771 degrees. t=14.21937894821167.
Servo 5 is at 135.07097155327227 degrees. t=14.21937894821167.
Servo 6 is at 153.16902844672774 degrees. t=14.21937894821167.
Servo 3 is at 153.31097155327228 degrees. t=14.21937894821167.
Servo 4 is at 173.47097155327228 degrees. t=14.21937894821167.
Servo 7 is at 150.19097155327228 degrees. t=14.21937894821167.
Servo 8 is at 140.83097155327226 degrees. t=14.21937894821167.

Servo 1 is at 127.58977187233043 degrees. t=14.725851774215698.
Servo 2 is at 108.5702281276696 degrees. t=14.725851774215698.
Servo 5 is at 95.66977187233041 degrees. t=14.725851774215698.
Servo 6 is at 192.57022812766962 degrees. t=14.725851774215698.
Servo 3 is at 113.90977187233042 degrees. t=14.725851774215698.
Servo 4 is at 134.06977187233042 degrees. t=14.725851774215698.
Servo 7 is at 110.78977187233042 degrees. t=14.725851774215698.
Servo 8 is at 101.42977187233042 degrees. t=14.725851774215698.

Servo 1 is at 167.23458038388938 degrees. t=15.232166767120361.
Servo 2 is at 68.92541961611063 degrees. t=15.232166767120361.
Servo 5 is at 135.31458038388936 degrees. t=15.232166767120361.
Servo 6 is at 152.92541961611064 degrees. t=15.232166767120361.
Servo 3 is at 153.55458038388937 degrees. t=15.232166767120361.
Servo 4 is at 173.71458038388937 degrees. t=15.232166767120361.
Servo 7 is at 150.43458038388937 degrees. t=15.232166767120361.
Servo 8 is at 141.07458038388936 degrees. t=15.232166767120361.

Servo 1 is at 127.39190682199357 degrees. t=15.741008758544922.
Servo 2 is at 108.76809317800644 degrees. t=15.741008758544922.
Servo 5 is at 95.47190682199356 degrees. t=15.741008758544922.
Servo 6 is at 192.76809317800647 degrees. t=15.741008758544922.
Servo 3 is at 113.71190682199357 degrees. t=15.741008758544922.
Servo 4 is at 133.87190682199355 degrees. t=15.741008758544922.
Servo 7 is at 110.59190682199356 degrees. t=15.741008758544922.
Servo 8 is at 101.23190682199356 degrees. t=15.741008758544922.

Servo 1 is at 167.3570446405472 degrees. t=16.24726390838623.
Servo 2 is at 68.80295535945281 degrees. t=16.24726390838623.
Servo 5 is at 135.43704464054719 degrees. t=16.24726390838623.
Servo 6 is at 152.80295535945282 degrees. t=16.24726390838623.
Servo 3 is at 153.6770446405472 degrees. t=16.24726390838623.
Servo 4 is at 173.8370446405472 degrees. t=16.24726390838623.
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Servo 7 is at 150.5570446405472 degrees. t=16.24726390838623.
Servo 8 is at 141.19704464054718 degrees. t=16.24726390838623.

Servo 1 is at 127.38106814152164 degrees. t=16.75730586051941.
Servo 2 is at 108.77893185847837 degrees. t=16.75730586051941.
Servo 5 is at 95.46106814152162 degrees. t=16.75730586051941.
Servo 6 is at 192.7789318584784 degrees. t=16.75730586051941.
Servo 3 is at 113.70106814152163 degrees. t=16.75730586051941.
Servo 4 is at 133.86106814152163 degrees. t=16.75730586051941.
Servo 7 is at 110.58106814152163 degrees. t=16.75730586051941.
Servo 8 is at 101.22106814152163 degrees. t=16.75730586051941.

Servo 1 is at 167.27490437344326 degrees. t=17.264686822891235.
Servo 2 is at 68.88509562655676 degrees. t=17.264686822891235.
Servo 5 is at 135.35490437344325 degrees. t=17.264686822891235.
Servo 6 is at 152.88509562655676 degrees. t=17.264686822891235.
Servo 3 is at 153.59490437344326 degrees. t=17.264686822891235.
Servo 4 is at 173.75490437344325 degrees. t=17.264686822891235.
Servo 7 is at 150.47490437344325 degrees. t=17.264686822891235.
Servo 8 is at 141.11490437344324 degrees. t=17.264686822891235.

Servo 1 is at 127.56238714713035 degrees. t=17.772660970687866.
Servo 2 is at 108.59761285286964 degrees. t=17.772660970687866.
Servo 5 is at 95.64238714713034 degrees. t=17.772660970687866.
Servo 6 is at 192.59761285286967 degrees. t=17.772660970687866.
Servo 3 is at 113.88238714713034 degrees. t=17.772660970687866.
Servo 4 is at 134.04238714713034 degrees. t=17.772660970687866.
Servo 7 is at 110.76238714713034 degrees. t=17.772660970687866.
Servo 8 is at 101.40238714713034 degrees. t=17.772660970687866.

Servo 1 is at 167.02172027497664 degrees. t=18.279313802719116.
Servo 2 is at 69.13827972502337 degrees. t=18.279313802719116.
Servo 5 is at 135.10172027497663 degrees. t=18.279313802719116.
Servo 6 is at 153.13827972502338 degrees. t=18.279313802719116.
Servo 3 is at 153.34172027497664 degrees. t=18.279313802719116.
Servo 4 is at 173.50172027497663 degrees. t=18.279313802719116.
Servo 7 is at 150.22172027497663 degrees. t=18.279313802719116.
Servo 8 is at 140.86172027497665 degrees. t=18.279313802719116.

Servo 1 is at 127.89695869234355 degrees. t=18.78696298599243.
Servo 2 is at 108.26304130765645 degrees. t=18.78696298599243.
Servo 5 is at 95.97695869234353 degrees. t=18.78696298599243.
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Servo 6 is at 192.26304130765647 degrees. t=18.78696298599243.
Servo 3 is at 114.21695869234354 degrees. t=18.78696298599243.
Servo 4 is at 134.37695869234352 degrees. t=18.78696298599243.
Servo 7 is at 111.09695869234353 degrees. t=18.78696298599243.
Servo 8 is at 101.73695869234353 degrees. t=18.78696298599243.

Servo 1 is at 166.64476955173276 degrees. t=19.292691946029663.
Servo 2 is at 69.51523044826726 degrees. t=19.292691946029663.
Servo 5 is at 134.72476955173275 degrees. t=19.292691946029663.
Servo 6 is at 153.5152304482673 degrees. t=19.292691946029663.
Servo 3 is at 152.96476955173276 degrees. t=19.292691946029663.
Servo 4 is at 173.12476955173275 degrees. t=19.292691946029663.
Servo 7 is at 149.84476955173275 degrees. t=19.292691946029663.
Servo 8 is at 140.48476955173277 degrees. t=19.292691946029663.

Servo 1 is at 128.35575128519025 degrees. t=19.800432920455933.
Servo 2 is at 107.80424871480975 degrees. t=19.800432920455933.
Servo 5 is at 96.43575128519024 degrees. t=19.800432920455933.
Servo 6 is at 191.80424871480975 degrees. t=19.800432920455933.
Servo 3 is at 114.67575128519024 degrees. t=19.800432920455933.
Servo 4 is at 134.83575128519024 degrees. t=19.800432920455933.
Servo 7 is at 111.55575128519024 degrees. t=19.800432920455933.
Servo 8 is at 102.19575128519024 degrees. t=19.800432920455933.
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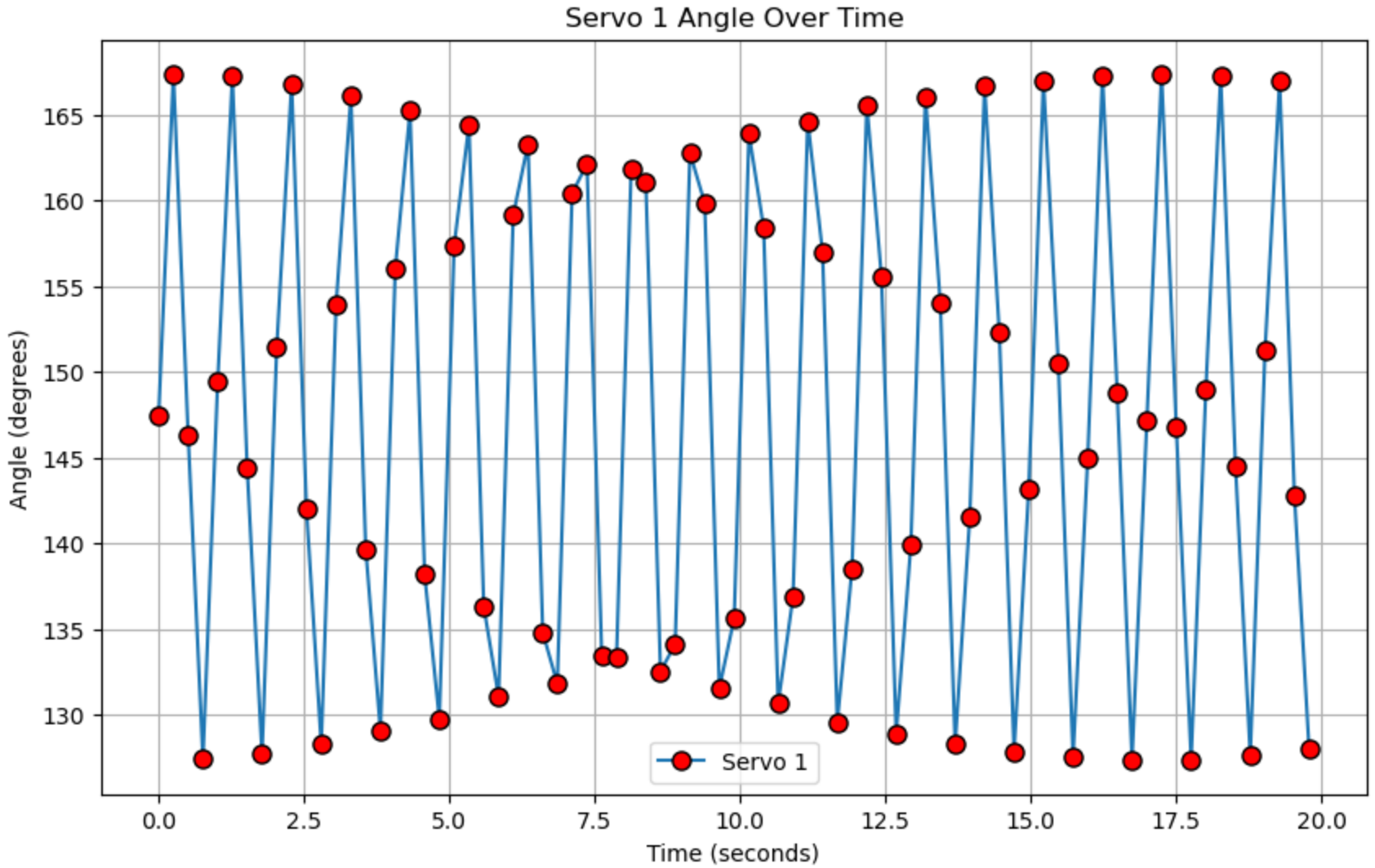
Servo 1 Angle Over Time
Angle (degrees)
165
160
155
150
145
140
135
130
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Time (seconds)
Servo 1

```
Servo 1's angles are:
[147.40146538846636, 167.34933712111564, 146.30040174521724, 127.42604993079821, 149.40014504863097, 167.20
69015540593, 144.36864917936674, 127.69009870384645, 151.4782773907396, 166.78992157924208, 142.03383039590
173, 128.26058696759617, 153.89280213828235, 166.05068296298003, 139.65871964662327, 129.07421473326085, 15
6.03775190665414, 165.19311282345288, 138.16513279541218, 129.75850014821984, 157.33722754591327, 164.36805
832842043, 136.2999404746136, 131.0559014337644, 159.13003998559577, 163.26306745590534, 134.7966786622522
5, 131.8073387612394, 160.38516595852346, 162.11466984203724, 133.40721422649702, 133.39067385177995, 161.8
1066506972036, 161.08376650113274, 132.5347619130235, 134.10807126138997, 162.74966599774, 159.826148229269
6, 131.54710041405247, 135.62474717000745, 163.86820979287003, 158.38861206117068, 130.66546419531807, 136.
86101428618477, 164.61299676307613, 156.95471247089864, 129.58797067669278, 138.52265564974275, 165.5648332
3361385, 155.56000641969268, 128.90561939461148, 139.8881672978202, 166.01205998517239, 153.97890317132567,
128.28569001527214, 141.57911127908235, 166.64760159941076, 152.2989328924718, 127.8634733642183, 143.11521
231839325, 166.9991300876041, 150.51311189046106, 127.53092944463008, 144.94937621197414, 167.2714662890477
4, 148.73476401890915, 127.37862857353984, 147.13470133707, 167.35969543635022, 146.7670475306517, 127.3978
2721160859, 148.97341879892164, 167.2331323716985, 144.49914579845193, 127.64581860757596, 151.279200751759
84, 166.96234781357072, 142.76883848578288, 127.97170322974698]
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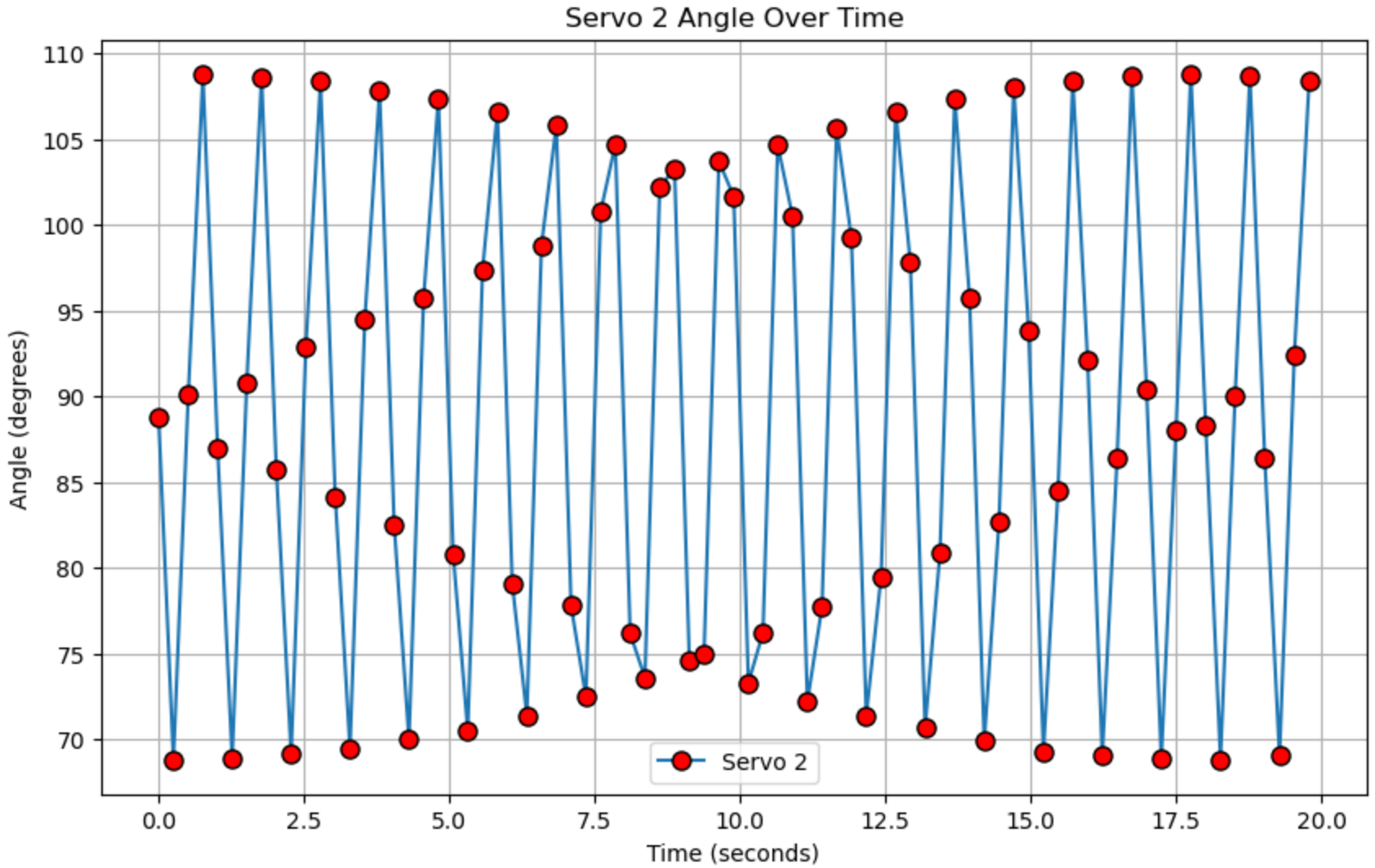
Servo 2 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 2
110
105
100
95
90
85
80
75
70
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0

```
Servo 2's angles are:
[88.7909519105051, 68.81031170833472, 90.07748699510915, 108.7441502309749, 86.9501263570288, 68.8891260432
5422, 90.79585087378874, 108.62712638389503, 85.70894515605124, 69.1362798688374, 92.91124068209095, 108.35
530177279918, 84.13425077447636, 69.45549357813306, 94.48108442754337, 107.81821369093615, 82.496701182486
2, 69.98608441963418, 95.68174720957525, 107.35173124928865, 80.78275058047421, 70.49167682523309, 97.37338
551881626, 106.58508022455841, 79.08728994756738, 71.39805343655503, 98.80038054783736, 105.79736210102807,
77.78868951797622, 72.46377583915552, 100.79203038916876, 104.69256019775591, 76.16408366590039, 73.5908844
9190413, 102.215010013714, 103.25551098174567, 74.58218253457962, 75.00751838557082, 103.7152159393066, 10
1.64264750539024, 73.29978285897656, 76.20933017751757, 104.64015629817493, 100.49781134767639, 72.21359274
888493, 77.71691064867974, 105.60587179117616, 99.2081576201142, 71.39892475517847, 79.49407196176034, 106.
61156430992158, 97.80201995086739, 70.7059819768115, 80.86729299983386, 107.37975120813526, 95.772782475222
84, 69.89767013334065, 82.65230073518742, 107.99266942493568, 93.81481519848876, 69.28970621857832, 84.5238
9033343871, 108.43181321784013, 92.15634400025262, 69.02696827384628, 86.37513035064774, 108.7012417306243
3, 90.41515084186813, 68.83212542167485, 88.01640234789362, 108.79944457670886, 88.32253392435753, 68.83117
852490933, 89.97826547616879, 108.71725127796994, 86.44250423134717, 69.02522975837557, 92.39715721658783,
108.37633603434739]
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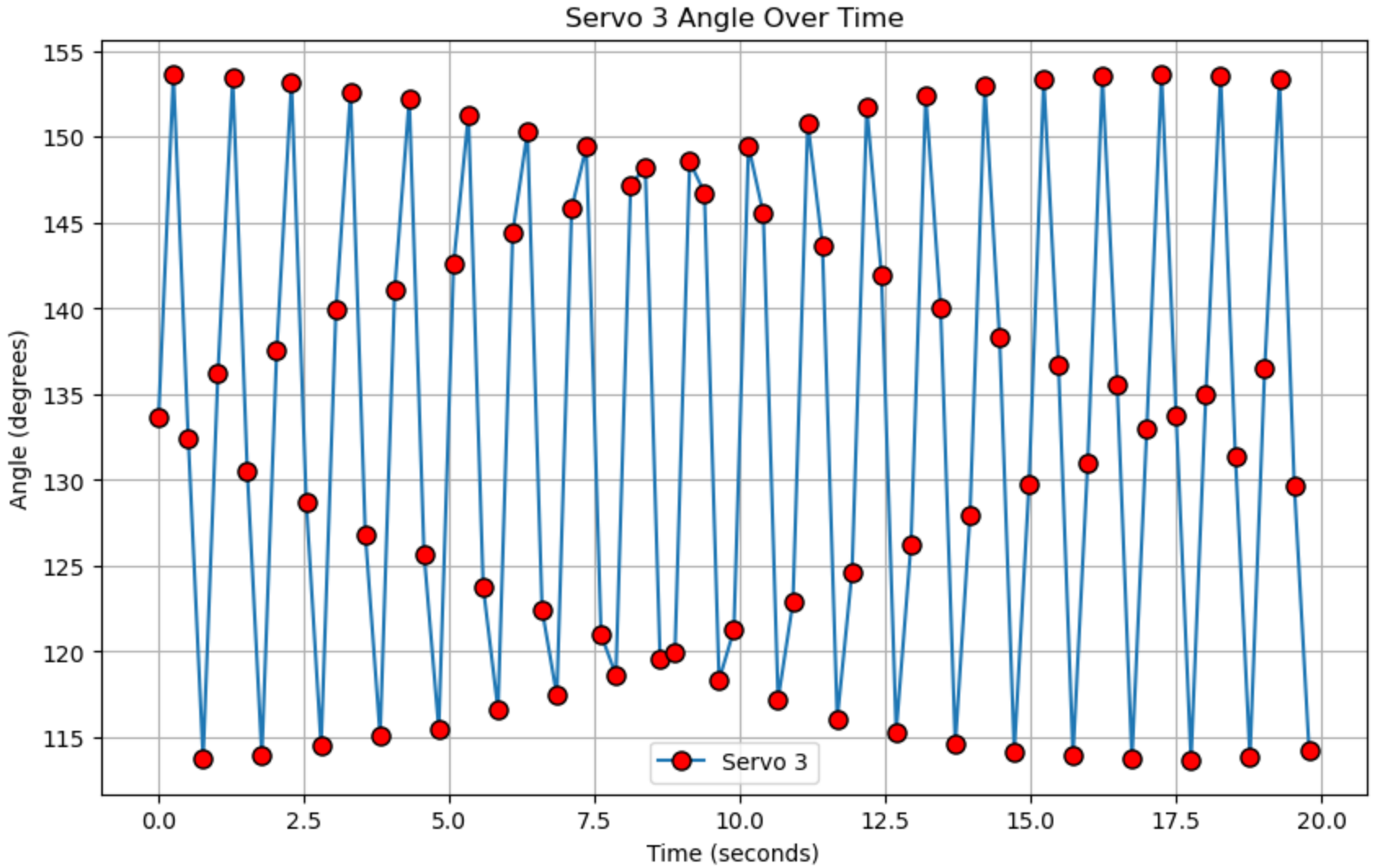
Servo 3 Angle Over Time
Angle (degrees)
155
150
145
140
135
130
125
120
115
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Time (seconds)
Servo 3

```
Servo 3's angles are:
[133.68805939103075, 153.6698129680627, 132.40825373885423, 113.76878450643042, 136.19602517305495, 153.430
88826399534, 130.49582684867795, 113.93980154822924, 137.52360730278778, 153.19679578466807, 128.6848807350
4497, 114.48263528452026, 139.8977350819429, 152.63426615130078, 126.80990038835546, 115.08410369406319, 14
1.10286642832932, 152.2287186875713, 125.68147430883273, 115.49510604182521, 142.58053098265674, 151.298472
08620967, 123.77090678749819, 116.59910272938721, 144.44085989374545, 150.2995317517038, 122.4404854071016
9, 117.42876903182982, 145.83242918560097, 149.42190132029188, 120.98930902964274, 118.6345678329059, 147.2
155570659647, 148.24041774627554, 119.52924458142306, 119.94314085054737, 148.56447768392795, 146.747426530
62435, 118.34004734564391, 121.25179561252405, 149.48124393027499, 145.53907365733556, 117.2091239793789, 1
22.86278241115045, 150.83732868574387, 143.68136649023197, 116.07366548436568, 124.63851301612549, 151.7323
832246558, 141.91587034838707, 115.32964932014039, 126.2218148048879, 152.42291499555844, 140.058626599090
4, 114.59852307801212, 127.92820119730527, 153.00910444302508, 138.27848046606397, 114.13525172899618, 129.
71057290341682, 153.38199260465322, 136.70671653687663, 113.90739605713912, 130.9841998819164, 153.54228392
105946, 135.59379425433954, 113.72256978174308, 133.0122133278134, 153.67830381561646, 133.70675477412144,
113.69274961212585, 135.02146499703045, 153.59635586690857, 131.39451865772403, 113.82266288448194, 136.485
60059292336, 153.3966742643275, 129.69327873234144, 114.20803104379775]
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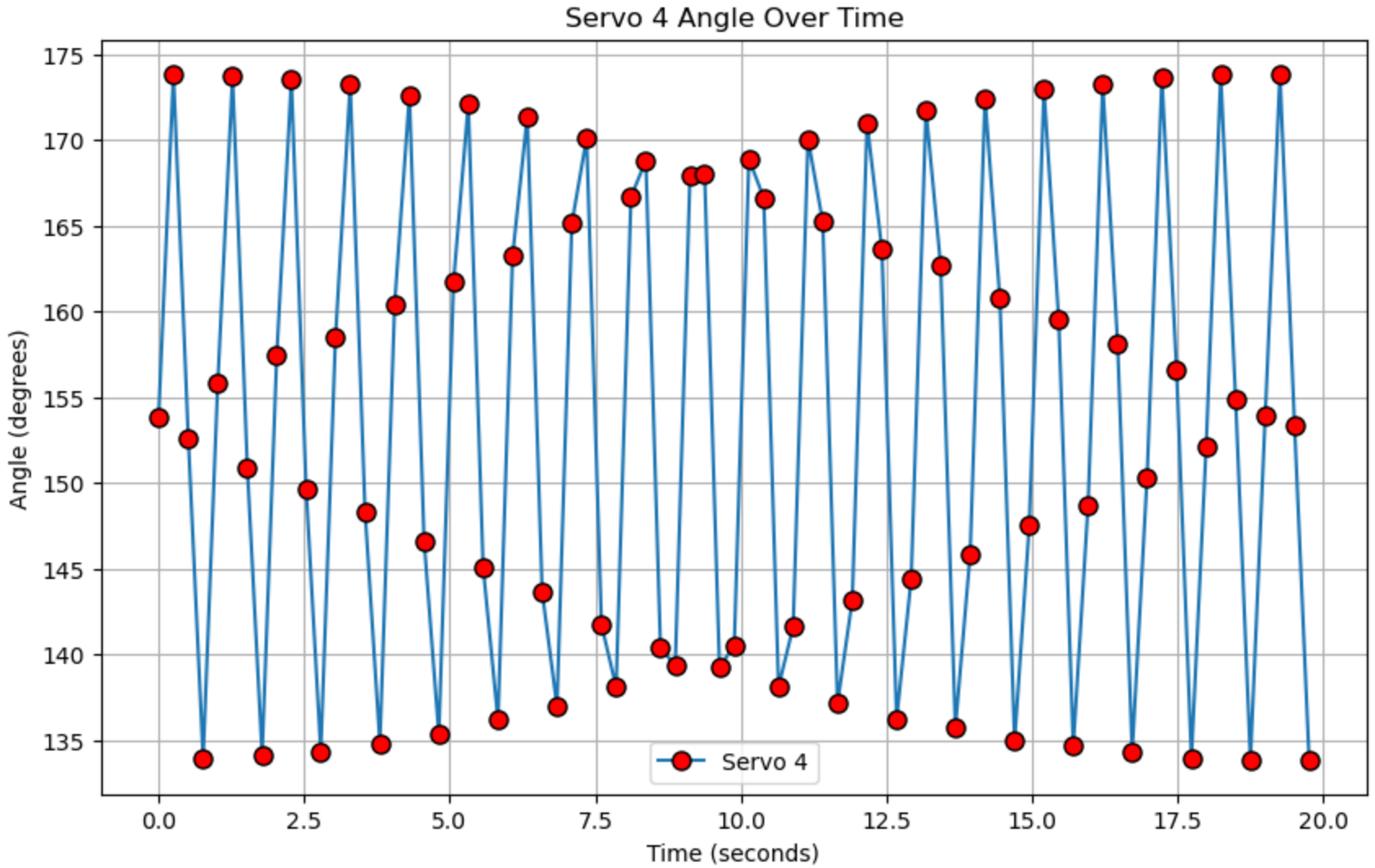
Servo 4 Angle Over Time
Angle (degrees)
175
170
165
160
155
150
145
140
135
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Time (seconds)
Servo 4

```
Servo 4's angles are:
[153.84868856278308, 173.82975264263683, 152.56484516534454, 133.92456636915682, 155.80699173063874, 173.68
617549706167, 150.831527890235, 134.13731732289807, 157.4184998364697, 173.49435566885933, 149.584380113974
42, 134.30619119117122, 158.45550690390954, 173.214685889724, 148.3381836715353, 134.79666098213292, 160.43
215095309986, 172.59681331106557, 146.57667780224574, 135.3203731845735, 161.70237868556728, 172.0837583907
9167, 145.07079863756528, 136.15463782214812, 163.22623962175285, 171.35515732868407, 143.6373072912159, 13
6.96989451826462, 165.11282353365107, 170.09981848458807, 141.7268465998068, 138.07897171782002, 166.648025
67613012, 168.79266190606796, 140.40569109965924, 139.31131374333276, 167.88219359883513, 167.9680827859142
8, 139.24137371016727, 140.50524813272045, 168.88337906509372, 166.60056226052293, 138.10593763950735, 141.
59784290030035, 170.03769309211154, 165.19728877440164, 137.14043398324452, 143.16273704381913, 170.9816665
690113, 163.59254651145233, 136.2285940029788, 144.38005631775465, 171.70515950420966, 162.70587656597166,
135.71566658428983, 145.85048224344132, 172.41683342969392, 160.73226716019414, 134.92971584403992, 147.500
20402078297, 172.921405117968, 159.54434865056183, 134.643089081288, 148.67585197318112, 173.2250645411738,
158.14077897354153, 134.27949235259078, 150.29401825317984, 173.62282184737822, 156.56031963213357, 133.949
48673522237, 152.12494925742513, 173.7698397683729, 154.89732444306082, 133.8456851481139, 153.871937945798
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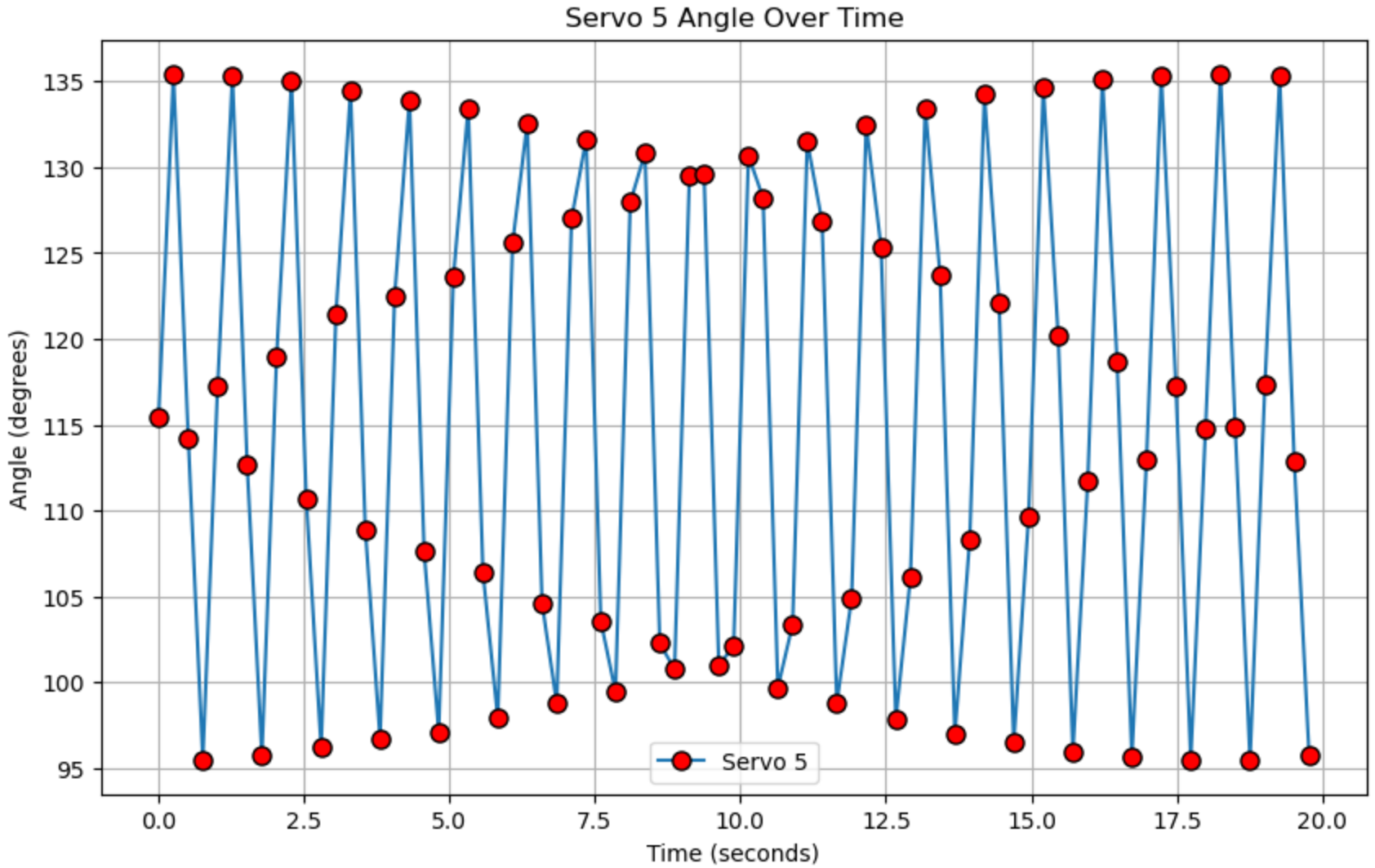
Servo 5 Angle Over Time
Angle (degrees)
135
130
125
120
115
110
105
100
95
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Time (seconds)
Servo 5

```
Servo 5's angles are:
[115.44814927271014, 135.4297536015739, 114.16487506495064, 95.48143642798831, 117.24094341722945, 135.2969
2244638898, 112.63205594637304, 95.70163868519518, 118.97964209503296, 135.00262263886947, 110.664985617708
8, 96.17933578562698, 121.43634677017663, 134.4669933692256, 108.90974646811667, 96.67373131084202, 122.483
13157210923, 133.9284526495505, 107.5919764065144, 97.07254603155774, 123.61433864692324, 133.4456032290495
4, 106.38002471026259, 97.90823566838958, 125.564197999942, 132.57695709988877, 104.59351619307557, 98.7638
9952170476, 127.0056893065551, 131.6521972593501, 103.53790505867696, 99.44250908855057, 127.9473857148085
8, 130.84146560655842, 102.2497352276041, 100.73880178017473, 129.4888695913822, 129.57770719946922, 100.95
943878411423, 102.11288653167496, 130.6757382908623, 128.21647375784073, 99.67720125636377, 103.35463907282
113, 131.51458523914886, 126.83841277805394, 98.78080635974649, 104.8420980362189, 132.4854352471867, 125.3
6993190430506, 97.82974423350643, 106.10650273750258, 133.41681274377544, 123.7294837595213, 96.98422226951
865, 108.32524661432981, 134.22473520839895, 122.07173725662597, 96.46272057772681, 109.58956776461953, 13
4.69916228733777, 120.21969839820926, 95.9200802297973, 111.70803512414051, 135.16254330103928, 118.7088857
2104761, 95.6265891292567, 112.90863874975881, 135.33880331817977, 117.19030112818169, 95.47118688685836, 1
14.79868427508903, 135.43999726667815, 114.81946655574133, 95.47930749026769, 117.32841326538397, 135.28603
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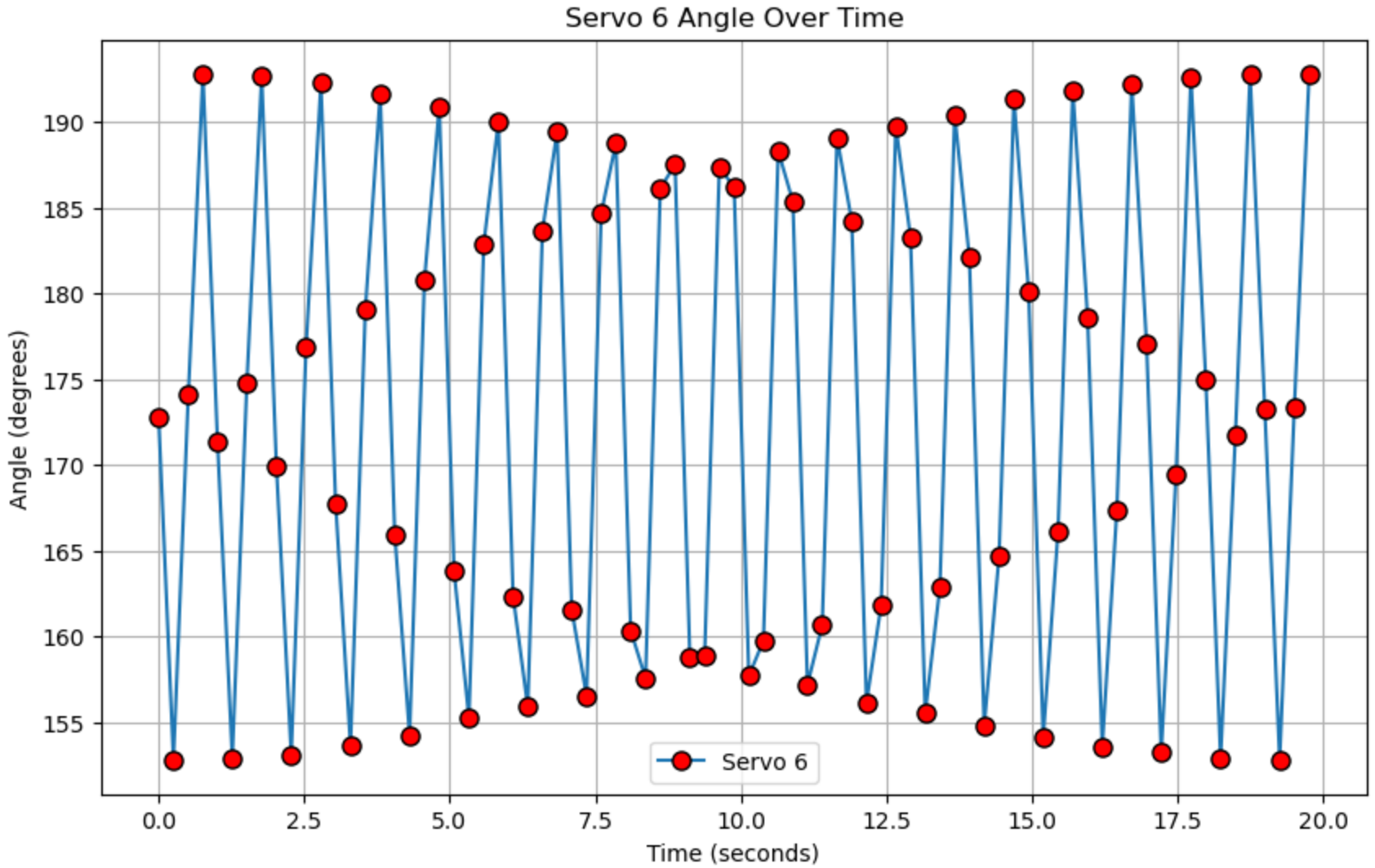
Servo 6 Angle Over Time
Angle (degrees)
190
185
180
175
170
165
160
155
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Time (seconds)
Servo 6

```
Servo 6's angles are:
[172.79173088505092, 152.81026270645702, 174.07587242434315, 192.75165725613633, 171.3388380280657, 152.897
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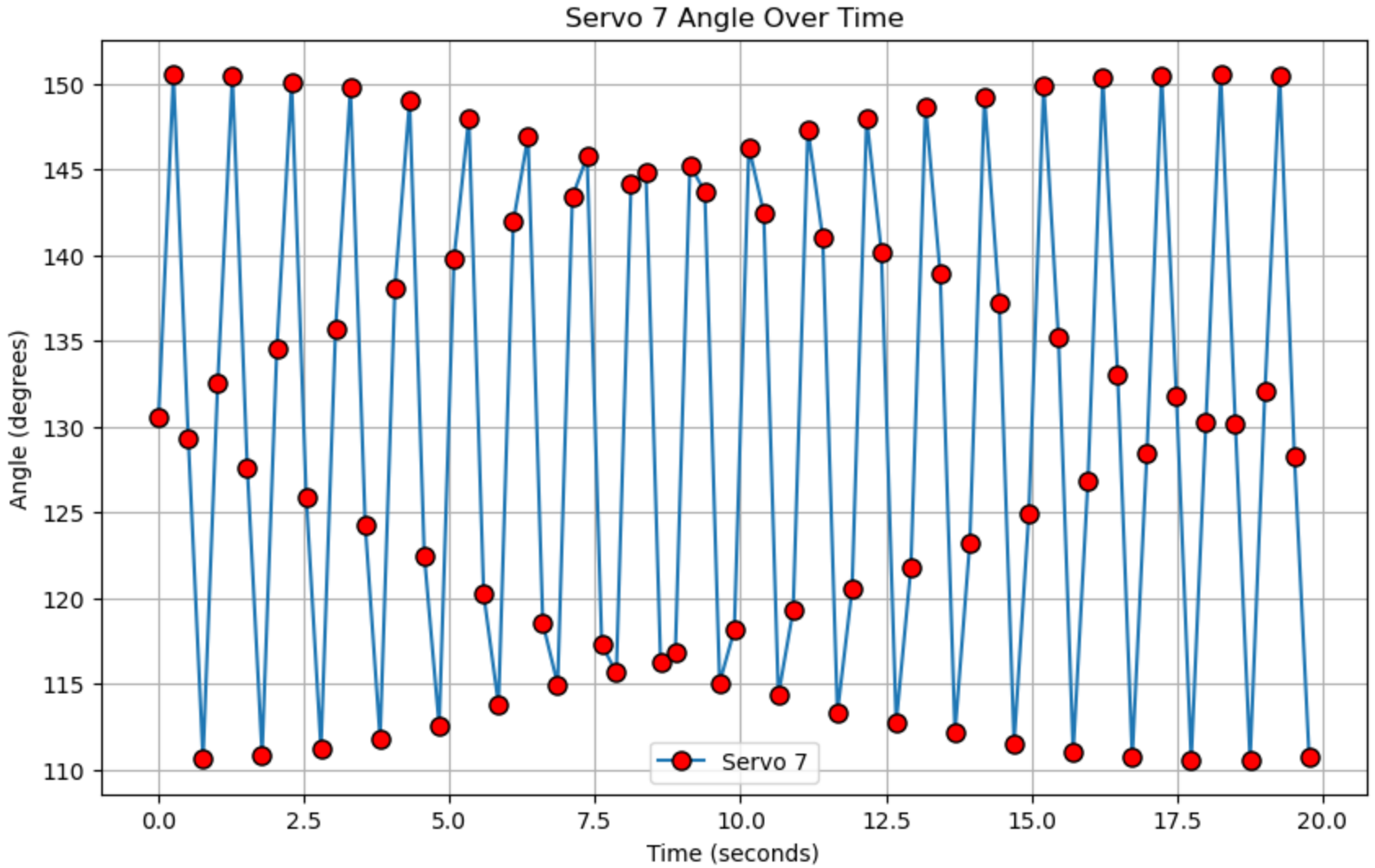
274, 192.24775085790446, 167.707756935793, 153.61444096780227, 179.05881128327997, 191.59804905147072, 165.
95413247302966, 154.21912904259506, 180.74477913807826, 190.89097889467286, 163.800254221677, 155.235192131
99523, 182.85279796722887, 189.99889482855883, 162.3293853275066, 155.89764124614913, 183.62749724547422, 1
89.41954841896728, 161.54752787689165, 156.53411275131302, 184.6629092500114, 188.75506344043137, 160.33483
579104217, 157.5560934321747, 186.11929277162366, 187.48739786887137, 158.81573704695563, 158.862333497880
5, 187.35704881057507, 186.16397766466602, 157.68819810211014, 159.74750409201448, 188.28433864628448, 185.
34307617301593, 157.16864487534974, 160.65306829791385, 189.05702676522978, 184.20244988217456, 156.1447696
144041, 161.78646365142058, 189.72060866930224, 183.2588699502949, 155.52609725878983, 162.88307434322954,
190.3957776818437, 182.07077107479512, 154.79485327133713, 164.67017402057434, 191.32369650974763, 180.1439
0032356778, 154.13848399058799, 166.06570098788865, 191.81793551895672, 178.6107680142256, 153.577001424349
56, 167.36380369635796, 192.20332288179554, 177.02502287036754, 153.20975026934812, 169.3964381446068, 192.
60637644302227, 174.94321019495922, 152.8608758331312, 171.7170361389573, 192.78568517538406, 173.213156723
02018, 152.8012425046987, 173.36653835974192, 192.7746448577658]
```


Servo 7 Angle Over Time
Angle (degrees)
150
145
140
135
130
125
120
115
110
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
Time (seconds)
Servo 7

```
Servo 7's angles are:
[130.56967726123347, 150.5497036773638, 129.28146652830316, 110.62716644503104, 132.52162490316385, 150.427
92176011534, 127.63191065271597, 110.87428325915222, 134.55470666319854, 150.06505465778181, 125.8689665138
0454, 111.1981635668113, 135.68312194635755, 149.72235534288922, 124.22378448222527, 111.80236535491167, 13
8.09334900063772, 149.00645982986345, 122.46692580498912, 112.53939902041941, 139.80570110771433, 147.98924
266191258, 120.2147722775721, 113.76264449117795, 141.9460510259006, 146.88873657949136, 118.5230832780871
9, 114.96288753097704, 143.3949517490938, 145.72722565077777, 117.29212411151696, 115.6382588846291, 144.13
822362891315, 144.8028697476139, 116.22364018047557, 116.8311781127984, 145.24467258701588, 143.68118912193
91, 115.06387330957305, 118.13684309447797, 146.28079194238168, 142.48089151416264, 114.33551298501794, 11
9.29754810501069, 147.3353833489594, 141.00599611841818, 113.32471442722704, 120.50199643122855, 147.961828
4265132, 140.19582645624118, 112.73598375209428, 121.76078719503538, 148.65414566731698, 138.9092059046258,
112.16895204315023, 123.23106697186928, 149.2426424600738, 137.18509444527433, 111.50597853923367, 124.9423
1698973435, 149.91252337482354, 135.18807038346364, 110.99325554444286, 126.83312739094114, 150.31844358051
45, 133.02712400572253, 110.69515182787086, 128.42390928413926, 150.48337664311723, 131.8184106093144, 110.
5698880754935, 130.21193575982522, 150.55791850601653, 130.18024273599983, 110.5770030840219, 132.020833286
25523, 150.45929637645872, 128.24067998189298, 110.73725618063435]
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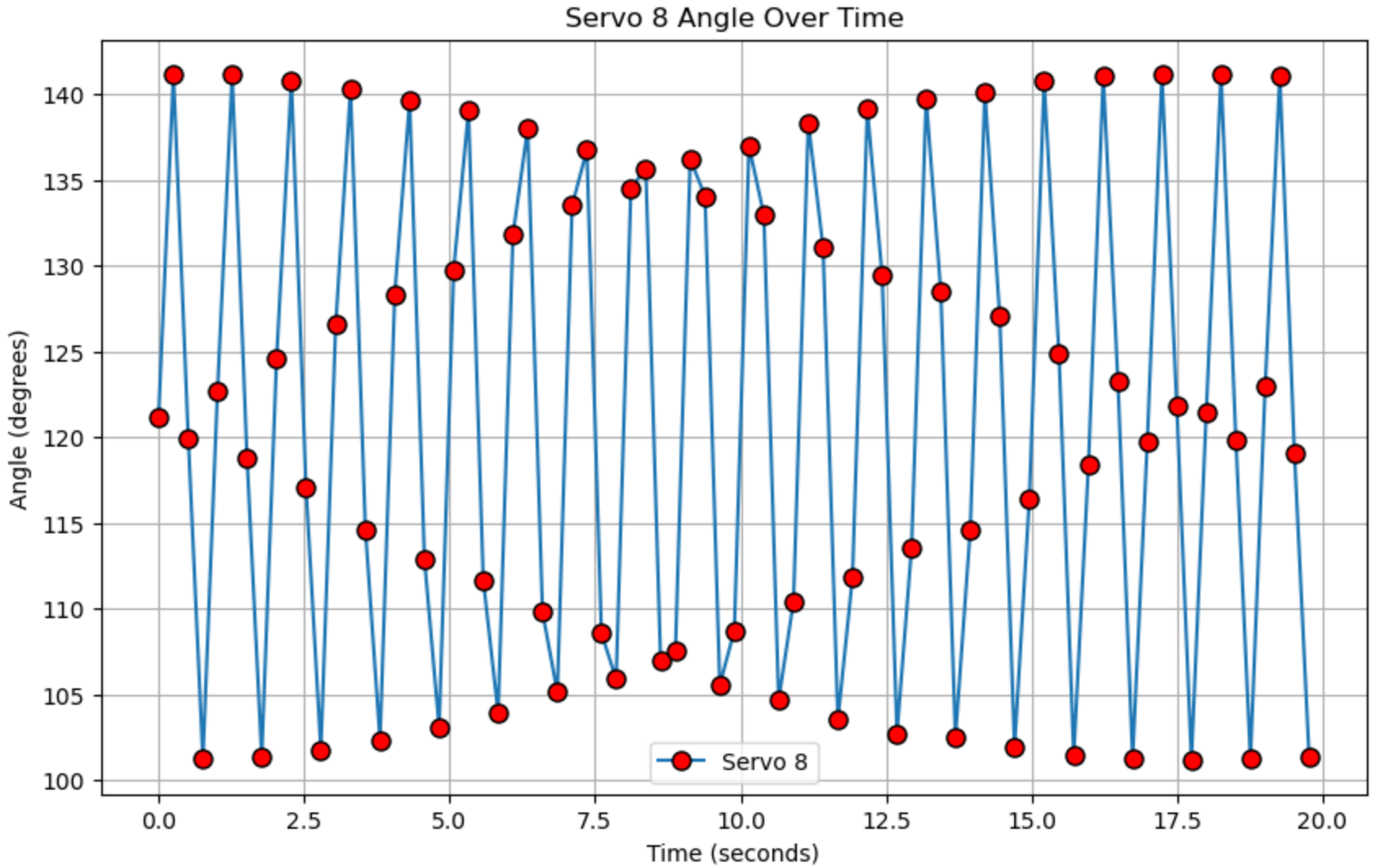

Servo 8 Angle Over Time
Angle (degrees)
Time (seconds)
Servo 8
140
135
130
125
120
115
110
105
100
0.0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0

```
Servo 8's angles are:
[121.2086885627831, 141.18974017237284, 119.92409767612233, 101.25080063560446, 122.70101961250656, 141.116
45711425862, 118.82254204090812, 101.39273457648738, 124.55079116210884, 140.8008781234754, 117.07239979040
175, 101.77123667810469, 126.56020917462264, 140.29482044441286, 114.64822863858014, 102.36393626662401, 12
8.34526466955026, 139.64457217094684, 112.88663842025369, 103.09886564338547, 129.7678632029071, 139.044410
92373594, 111.6684927770011, 103.92881598764482, 131.79904531995908, 137.99184041494732, 109.8104761978997
2, 105.1294444462246, 133.50704083678946, 136.7473667323713, 108.58355489024348, 105.90474002513965, 134.52
380687779134, 135.68533417458812, 106.95746678978256, 107.53160205961143, 136.21942562089635, 134.061884213
41673, 105.5698037233112, 108.73813964867277, 136.98190262789882, 132.97398798165344, 104.68867870860466, 1
10.44305480956385, 138.3429012472426, 131.04808237231967, 103.54153139880914, 111.8224391274803, 139.153573
7481565, 129.43772686726876, 102.73082463363913, 113.53553747890898, 139.74104492794223, 128.4663369213004,
102.51718644535785, 114.62284286585877, 140.1261761655743, 127.05699275352545, 101.92355203487755, 116.3809
4942454605, 140.75305600764452, 124.87375689593141, 101.4576256039, 118.42216794850475, 141.0711605097048,
123.27537048818806, 101.27654477466884, 119.71705602046372, 141.15858669994083, 121.85158682808834, 101.204
3356462074, 121.41903729179397, 141.1874920358262, 119.8564126009798, 101.2473527264415, 122.9667753043275
8, 141.10369453344396, 119.11801428879096, 101.34797299945004]
```

In [30]:
```
# graph servo 1 angles - 0.05 sleep
start_time = time.time()
duration = 10.0

times = []
servo1_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"Servo 1 is at angle {servo1} while t={current_time}")
    servo1_angles.append(servo1)
    time.sleep(0.05)
```

```
Servo 1 is at angle 147.40724776274195 while t=0.00037598609924316406
Servo 1 is at angle 154.1238840912493 while t=0.054908037185668945
Servo 1 is at angle 160.0301632689859 while t=0.1091928482055664
Servo 1 is at angle 164.49894941033338 while t=0.16382098197937012
Servo 1 is at angle 166.8848856436077 while t=0.2152397632598877
Servo 1 is at angle 167.22429125425472 while t=0.2685511112213135
Servo 1 is at angle 165.25044977633888 while t=0.3237578868865967
Servo 1 is at angle 161.31602666475663 while t=0.37708091735839844
Servo 1 is at angle 155.6395031795614 while t=0.4320700168609619
Servo 1 is at angle 148.99542677908988 while t=0.4869711399078369
Servo 1 is at angle 142.31673784210525 while t=0.5405709743499756
Servo 1 is at angle 136.03770640530675 while t=0.5957770347595215
Servo 1 is at angle 131.2229781314424 while t=0.6494150161743164
Servo 1 is at angle 128.2337178239608 while t=0.7027828693389893
Servo 1 is at angle 127.38293631667162 while t=0.7576229572296143
Servo 1 is at angle 128.80292300707657 while t=0.8108258247375488
Servo 1 is at angle 132.3222688479782 while t=0.8645720481872559
Servo 1 is at angle 137.3783325486736 while t=0.9168350696563721
Servo 1 is at angle 143.44461868137 while t=0.9686398506164551
Servo 1 is at angle 150.33470132671206 while t=1.0237600803375244
Servo 1 is at angle 156.32349989696604 while t=1.073962926864624
Servo 1 is at angle 161.56959721947618 while t=1.1257610321044922
Servo 1 is at angle 165.38849482494052 while t=1.1787388324737549
Servo 1 is at angle 167.1998403536751 while t=1.2298448085784912
Servo 1 is at angle 166.90092672150462 while t=1.2841660976409912
Servo 1 is at angle 164.32023190847454 while t=1.338899850845337
Servo 1 is at angle 159.71798792895638 while t=1.3939919471740723
Servo 1 is at angle 153.78302032756795 while t=1.447965145111084
Servo 1 is at angle 146.99962390037524 while t=1.5028679370880127
Servo 1 is at angle 140.44130188158152 while t=1.5562191009521484
Servo 1 is at angle 134.47761591737014 while t=1.6113879680633545
Servo 1 is at angle 130.0465769451746 while t=1.6665539741516113
Servo 1 is at angle 127.68911824166639 while t=1.7210869789123535
Servo 1 is at angle 127.633358997053 while t=1.7763440608978271
Servo 1 is at angle 129.92551387963243 while t=1.8315010070800781
Servo 1 is at angle 134.22068591920655 while t=1.8859198093414307
Servo 1 is at angle 140.11482598433852 while t=1.9410028457641602
Servo 1 is at angle 146.8704333951379 while t=1.9961037635803223
Servo 1 is at angle 153.49763436546698 while t=2.04964280128479
Servo 1 is at angle 159.34003832679684 while t=2.10221791267395
Servo 1 is at angle 164.0539748438052 while t=2.157179117202759
Servo 1 is at angle 166.79891340361823 while t=2.212211847305298
```

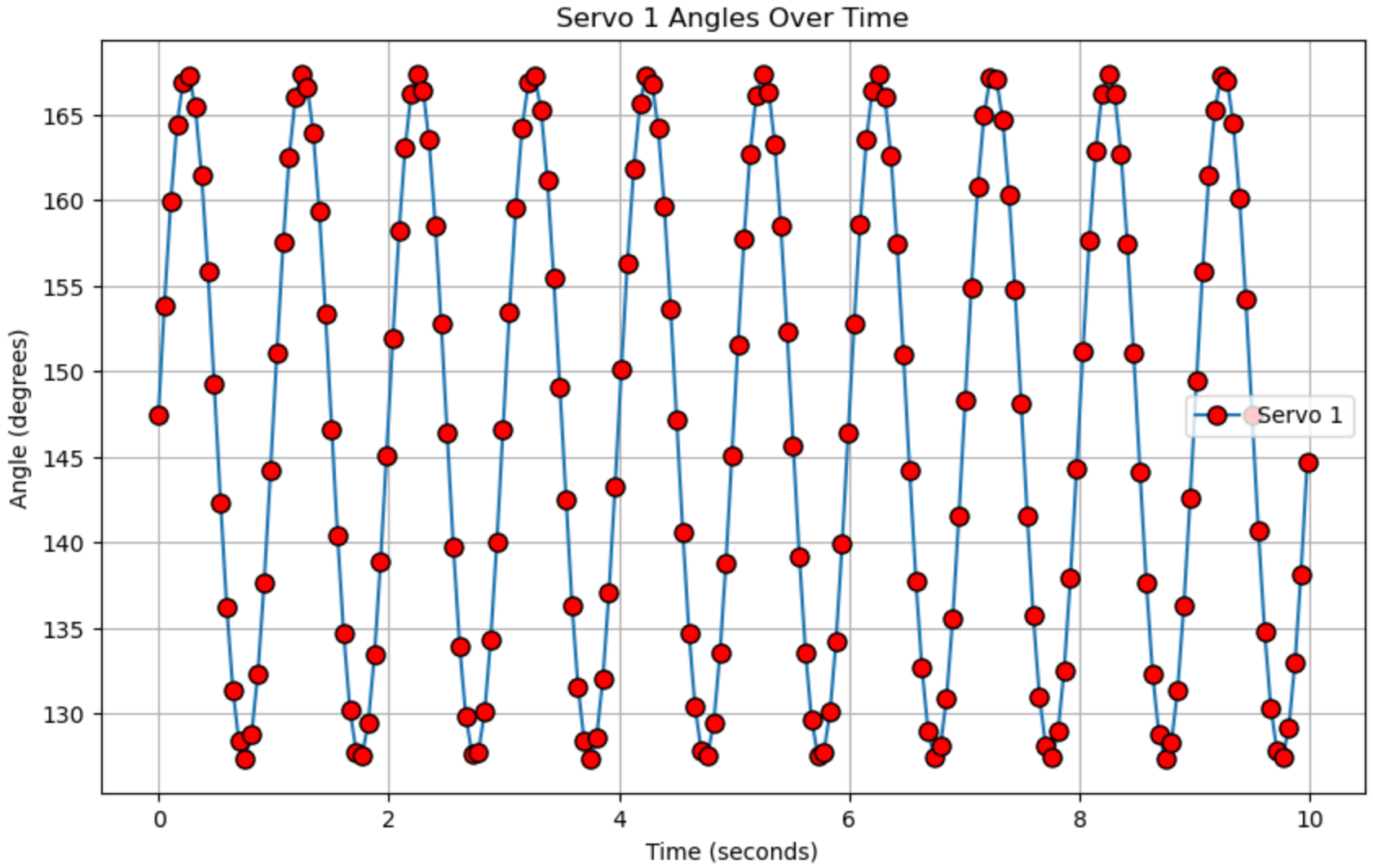
```
Servo 1 is at angle 167.25440401125962 while t=2.266361951828003
Servo 1 is at angle 165.37352539354254 while t=2.32153582572937
Servo 1 is at angle 161.34974524064242 while t=2.3767058849334717
Servo 1 is at angle 155.76595643524132 while t=2.4309628009796143
Servo 1 is at angle 149.21226020003846 while t=2.485239028930664
Servo 1 is at angle 142.33839830239387 while t=2.5403928756713867
Servo 1 is at angle 136.15118482237492 while t=2.59468412399292
Servo 1 is at angle 131.19334727737134 while t=2.6498148441314697
Servo 1 is at angle 128.15619488576004 while t=2.7049410343170166
Servo 1 is at angle 127.38801546679522 while t=2.758424997329712
Servo 1 is at angle 128.72181478780604 while t=2.8090710639953613
Servo 1 is at angle 132.2229290101 while t=2.863367795944214
Servo 1 is at angle 137.24296007993883 while t=2.9155890941619873
Servo 1 is at angle 143.70126406854226 while t=2.970719814300537
Servo 1 is at angle 150.3369233564328 while t=3.023777961730957
Servo 1 is at angle 156.48276791826876 while t=3.0753839015960693
Servo 1 is at angle 161.8410365232792 while t=3.12886118888855
Servo 1 is at angle 165.6364649768853 while t=3.1834421157836914
Servo 1 is at angle 167.307794109165 while t=3.2384979724884033
Servo 1 is at angle 166.71398197023456 while t=3.2905619144439697
Servo 1 is at angle 164.18943241276384 while t=3.3408448696136475
Servo 1 is at angle 159.51761595226205 while t=3.396009922027588
Servo 1 is at angle 153.40645932412139 while t=3.4511189460754395
Servo 1 is at angle 146.6467603188488 while t=3.5056769847869873
Servo 1 is at angle 139.90075843819642 while t=3.560828924179077
Servo 1 is at angle 134.00382572082455 while t=3.6163837909698486
Servo 1 is at angle 129.776599411676 while t=3.6709511280059814
Servo 1 is at angle 127.58944594053509 while t=3.7258689403533936
Servo 1 is at angle 127.71732051295672 while t=3.780129909515381
Servo 1 is at angle 130.12090063138675 while t=3.8346199989318848
Servo 1 is at angle 134.55052469263939 while t=3.889369010925293
Servo 1 is at angle 140.21202102801178 while t=3.9418318271636963
Servo 1 is at angle 146.94244002421894 while t=3.9966769218444824
Servo 1 is at angle 153.64265224248882 while t=4.050856828689575
Servo 1 is at angle 159.61904253955433 while t=4.105009078979492
Servo 1 is at angle 164.26256696273336 while t=4.160238027572632
Servo 1 is at angle 166.88958702542791 while t=4.215412855148315
Servo 1 is at angle 167.19527513114292 while t=4.2704408168792725
Servo 1 is at angle 165.2506238827121 while t=4.323754787445068
Servo 1 is at angle 161.29450753825736 while t=4.377319812774658
Servo 1 is at angle 155.59327653920982 while t=4.43247389793396
Servo 1 is at angle 149.19949181102004 while t=4.4853410720825195
```

```
Servo 1 is at angle 142.415551103011 while t=4.539758920669556
Servo 1 is at angle 136.54983941584155 while t=4.59088397026062
Servo 1 is at angle 131.80978783450502 while t=4.641758918762207
Servo 1 is at angle 128.56272853719162 while t=4.694524049758911
Servo 1 is at angle 127.36095835771395 while t=4.748441934585571
Servo 1 is at angle 128.44979388207787 while t=4.802781820297241
Servo 1 is at angle 131.7411001986764 while t=4.8573689460754395
Servo 1 is at angle 136.8894619074198 while t=4.912307977676392
Servo 1 is at angle 142.84200516161752 while t=4.963733911514282
Servo 1 is at angle 149.50258464503 while t=5.017082929611206
Servo 1 is at angle 155.94020609769768 while t=5.070568799972534
Servo 1 is at angle 161.33374234236047 while t=5.1231160163879395
Servo 1 is at angle 165.3154612422968 while t=5.17740797996521
Servo 1 is at angle 167.16380196008006 while t=5.227688789367676
Servo 1 is at angle 166.93811306643997 while t=5.282747983932495
Servo 1 is at angle 164.44038292938927 while t=5.337079048156738
Servo 1 is at angle 159.91998747738097 while t=5.391937017440796
Servo 1 is at angle 153.93421446390258 while t=5.446692943572998
Servo 1 is at angle 147.72804473165317 while t=5.497071027755737
Servo 1 is at angle 141.26232849040653 while t=5.549308776855469
Servo 1 is at angle 135.60166279733156 while t=5.60002589225769
Servo 1 is at angle 130.80146794504205 while t=5.655239820480347
Servo 1 is at angle 128.0786011660393 while t=5.707206964492798
Servo 1 is at angle 127.3888056545209 while t=5.758543014526367
Servo 1 is at angle 128.93843378854052 while t=5.813654899597168
Servo 1 is at angle 132.68430061512274 while t=5.868875980377197
Servo 1 is at angle 138.17388746080553 while t=5.924049139022827
Servo 1 is at angle 144.6955825634611 while t=5.978734016418457
Servo 1 is at angle 151.4963065247107 while t=6.0331549644470215
Servo 1 is at angle 157.37996358805023 while t=6.083516836166382
Servo 1 is at angle 162.63417895755103 while t=6.138311862945557
Servo 1 is at angle 166.03877928609757 while t=6.191826105117798
Servo 1 is at angle 167.33962854239383 while t=6.242815971374512
Servo 1 is at angle 166.47068555022446 while t=6.297639846801758
Servo 1 is at angle 163.33354398308416 while t=6.352766752243042
Servo 1 is at angle 158.34328286022043 while t=6.407473087310791
Servo 1 is at angle 152.44592664399502 while t=6.459078073501587
Servo 1 is at angle 145.59146394013936 while t=6.514091968536377
Servo 1 is at angle 139.12432076870272 while t=6.567547082901001
Servo 1 is at angle 133.43000643938802 while t=6.6226301193237305
Servo 1 is at angle 129.38637927624643 while t=6.677736759185791
Servo 1 is at angle 127.47410506432658 while t=6.732990980148315
```

```
Servo 1 is at angle 127.83663459943779 while t=6.784816026687622
Servo 1 is at angle 130.4372512879453 while t=6.839461088180542
Servo 1 is at angle 135.0657397220905 while t=6.894635915756226
Servo 1 is at angle 140.80610562848585 while t=6.946864128112793
Servo 1 is at angle 147.49643934222814 while t=7.0010857582092285
Servo 1 is at angle 154.28280212279572 while t=7.056253910064697
Servo 1 is at angle 160.05893282724702 while t=7.1094889640808105
Servo 1 is at angle 164.2814711566135 while t=7.16051983833313
Servo 1 is at angle 166.86364273795536 while t=7.214468002319336
Servo 1 is at angle 167.26444485187238 while t=7.26556396484375
Servo 1 is at angle 165.4204869359123 while t=7.32067084312439
Servo 1 is at angle 161.42069961913512 while t=7.375913858413696
Servo 1 is at angle 156.1856509644601 while t=7.427261829376221
Servo 1 is at angle 149.56941700478987 while t=7.48238205909729
Servo 1 is at angle 142.97899834333984 while t=7.5351479053497314
Servo 1 is at angle 136.93168955617375 while t=7.5872979164123535
Servo 1 is at angle 131.92439568487504 while t=7.640316724777222
Servo 1 is at angle 128.59412501898362 while t=7.6937971115112305
Servo 1 is at angle 127.36403295857676 while t=7.7468037605285645
Servo 1 is at angle 128.39924213293642 while t=7.801532030105591
Servo 1 is at angle 131.68342484437792 while t=7.8566319942474365
Servo 1 is at angle 136.74827935990984 while t=7.910985946655273
Servo 1 is at angle 142.85105333896465 while t=7.963807821273804
Servo 1 is at angle 149.6880092557046 while t=8.01856780052185
Servo 1 is at angle 156.12955141275265 while t=8.072241067886353
Servo 1 is at angle 161.714897726154 while t=8.127412796020508
Servo 1 is at angle 165.59286489982748 while t=8.182592868804932
Servo 1 is at angle 167.28878273847104 while t=8.236564874649048
Servo 1 is at angle 166.71622338414454 while t=8.290491104125977
Servo 1 is at angle 163.85797020987542 while t=8.345616102218628
Servo 1 is at angle 159.04300694254434 while t=8.400713920593262
Servo 1 is at angle 152.826550230968 while t=8.45593786239624
Servo 1 is at angle 145.9670337299257 while t=8.511093854904175
Servo 1 is at angle 139.64694218810726 while t=8.563011884689331
Servo 1 is at angle 134.00558756438113 while t=8.6163649559021
Servo 1 is at angle 130.01983642652672 while t=8.666980028152466
Servo 1 is at angle 127.67226550689168 while t=8.72183895111084
Servo 1 is at angle 127.62808262662736 while t=8.776087999343872
Servo 1 is at angle 129.90815951062103 while t=8.831218719482422
Servo 1 is at angle 134.13546988515625 while t=8.885018110275269
Servo 1 is at angle 139.80664481860651 while t=8.938363075256348
Servo 1 is at angle 146.43667412579507 while t=8.992649793624878
```

```
Servo 1 is at angle 153.199229061066 while t=9.047153949737549
Servo 1 is at angle 159.08906546118666 while t=9.099738121032715
Servo 1 is at angle 163.80358523714287 while t=9.153620958328247
Servo 1 is at angle 166.69267789383596 while t=9.208770990371704
Servo 1 is at angle 167.30665436997978 while t=9.261626958847046
Servo 1 is at angle 165.66987849383747 while t=9.315900087356567
Servo 1 is at angle 161.96515731478473 while t=9.369699954986572
Servo 1 is at angle 156.83335070459984 while t=9.421464920043945
Servo 1 is at angle 150.39980591843883 while t=9.47571587562561
Servo 1 is at angle 143.49666584254717 while t=9.530937910079956
Servo 1 is at angle 137.46228172879927 while t=9.582395076751709
Servo 1 is at angle 132.29742686520783 while t=9.635728120803833
Servo 1 is at angle 128.76446763522375 while t=9.690000057220459
Servo 1 is at angle 127.37166965030974 while t=9.744562864303589
Servo 1 is at angle 128.26700729718283 while t=9.798115015029907
Servo 1 is at angle 131.07849037479974 while t=9.84862208366394
Servo 1 is at angle 135.8497157879711 while t=9.902400970458984
Servo 1 is at angle 141.50707525955647 while t=9.95273208618164
```

In [17]:
```
# graph servo 1 angles
plt.figure(figsize=(10, 6))
plt.plot(times, servo1_angles, label='Servo 1', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 1 Angles Over Time')
plt.legend()
plt.grid(True)plt.show()
```




In [49]:
```
# Calculate the angles to complete one period of motion for each motor
```

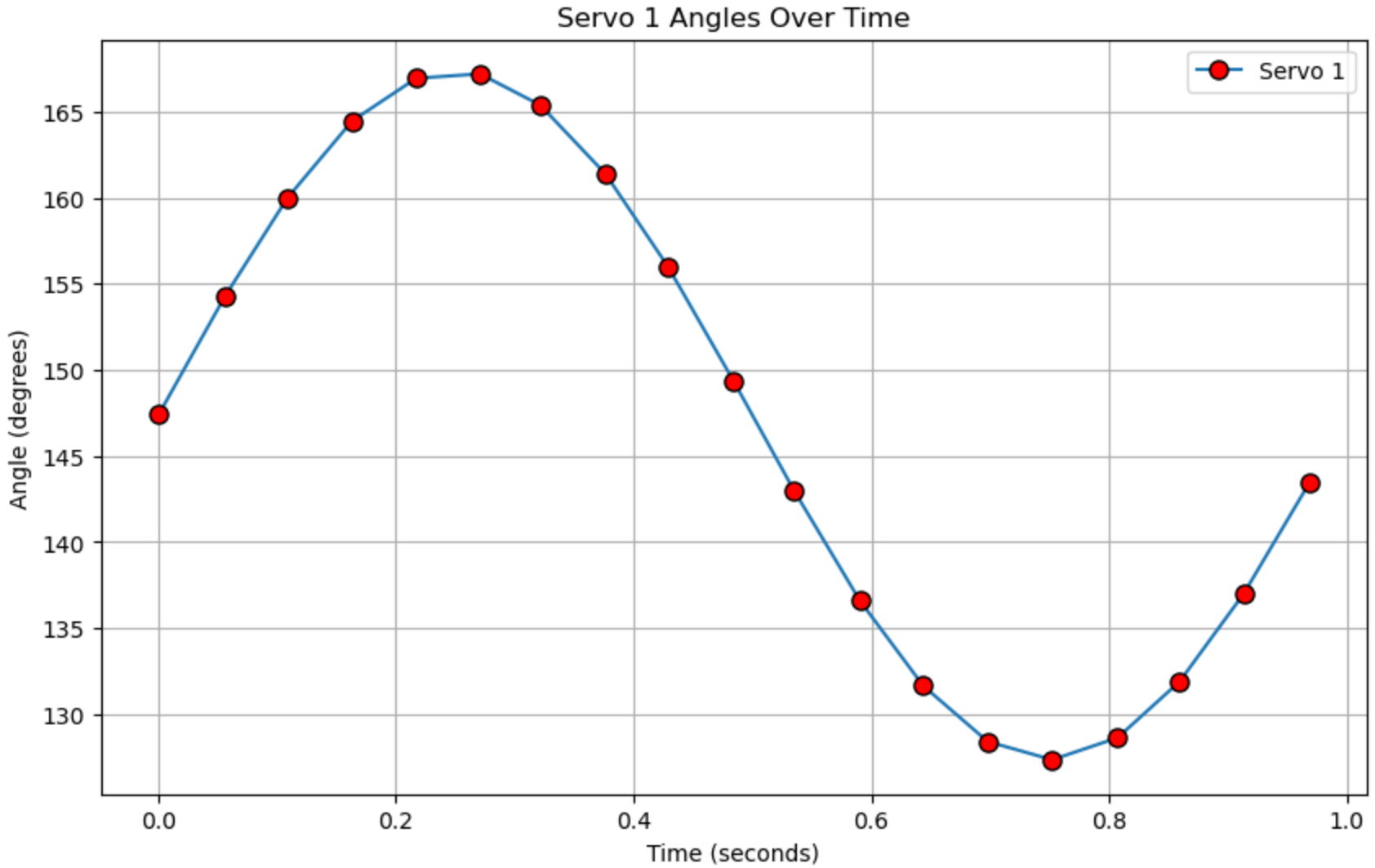
In [39]:
```
# graph servo 1 angles - 0.1 sleep
start_time = time.time()
duration = 1.0

times = []
servo1_angles = []
```

```
while time.time() - start_time < duration:
    current_time = time.time() - start_time
    times.append(current_time)
    servo1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"{servo1} while t={current_time}")
    servo1_angles.append(servo1)
    time.sleep(0.05)

plt.figure(figsize=(10, 6))
plt.plot(times, servo1_angles, label='Servo 1', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 1 Angles Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
147.40047669198634 while t=0.00032210350036621094
154.29272344967188 while t=0.05633807182312012
159.99231635470315 while t=0.10880398750305176
164.45540627185648 while t=0.16315102577209473
166.9334297065477 while t=0.2170701026916504
167.19164834088713 while t=0.27066493034362793
165.38284861211946 while t=0.3213648796081543
161.3710124244554 while t=0.3764688968658447
156.01655603105948 while t=0.428757905960083
149.37045772826247 while t=0.4839742183685303
142.96292172144587 while t=0.5352790355682373
136.59416548192715 while t=0.5904650688171387
131.6548337118326 while t=0.6437349319458008
128.419805747141 while t=0.6979560852050781
127.36196516444011 while t=0.7522311210632324
128.64030241177215 while t=0.8072559833526611
131.8987646172379 while t=0.8593621253967285
136.99857175879558 while t=0.9133250713348389
143.41914881460016 while t=0.968433141708374
```




In [41]:
```
# graph servo 2 angles
start_time = time.time()
duration = 1.0

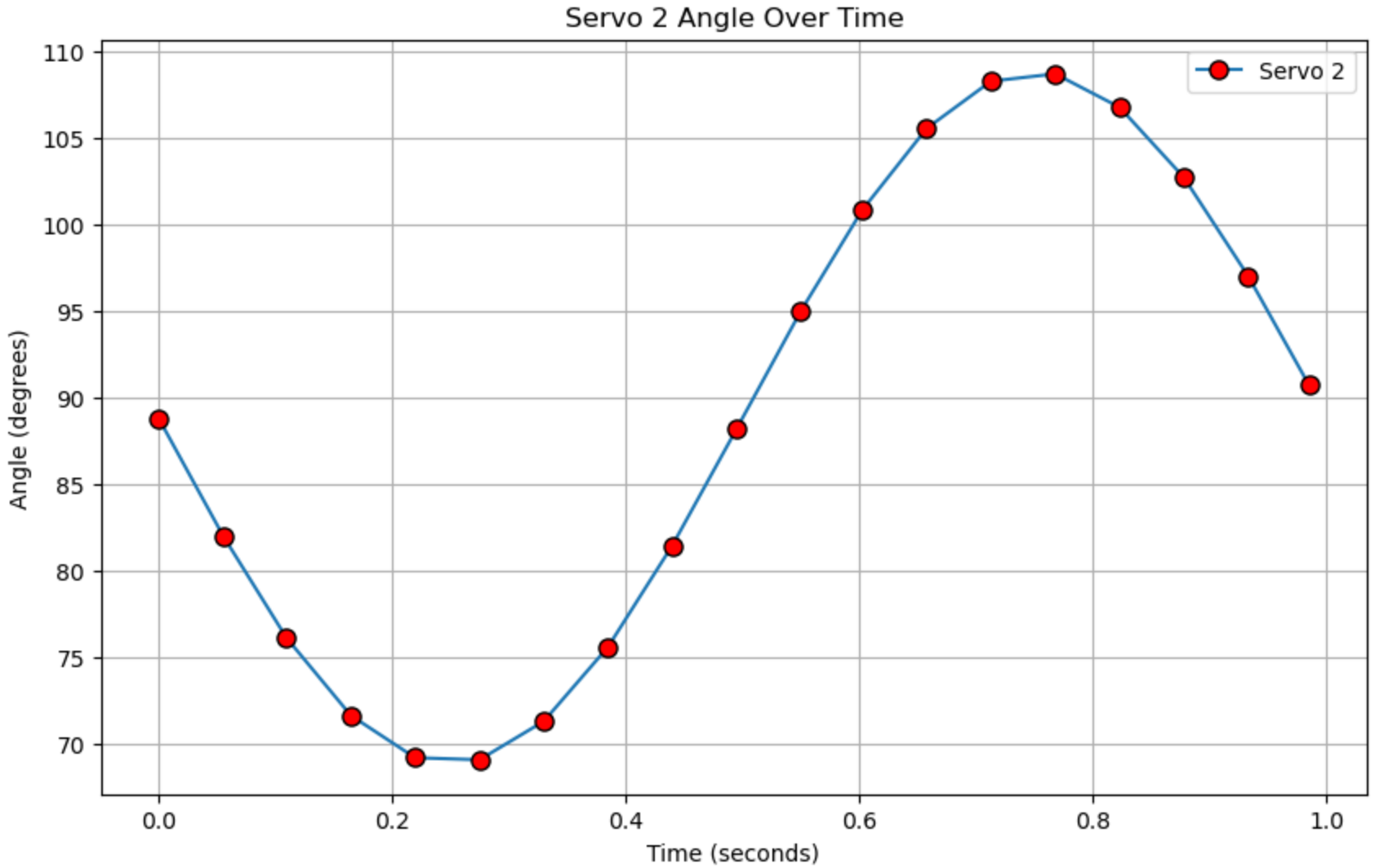
times = []
servo2_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo2 = 88.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    print(f"{servo2} while t={current_time}")
    servo2_angles.append(servo2)
    time.sleep(0.05)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo2_angles, label='Servo 2', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 2 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
88.7780988333626 while t=0.0001742839813232422
81.96578819452999 while t=0.055503129959106445
76.08503369371587 while t=0.10965418815612793
71.60295572377197 while t=0.16472220420837402
69.16020732137466 while t=0.21974825859069824
69.0426718759987 while t=0.27481818199157715
71.26450265946666 while t=0.3298451900482178
75.56133835156801 while t=0.38486814498901367
81.42551095966611 while t=0.4398972988128662
88.16778766850416 while t=0.4949681758880615
94.97509102285207 while t=0.5499560832977295
100.81084435152843 while t=0.6025242805480957
105.52035892305798 while t=0.6575610637664795
108.25161770313255 while t=0.712644100189209
108.6766521622526 while t=0.7676851749420166
106.74785344480406 while t=0.8227293491363525
102.69467260836672 while t=0.8777611255645752
96.98557541624996 while t=0.9328901767730713
90.67776486032298 while t=0.9850351810455322
```




In [43]:
```
# graph servo 3 angles
start_time = time.time()
duration = 1.0

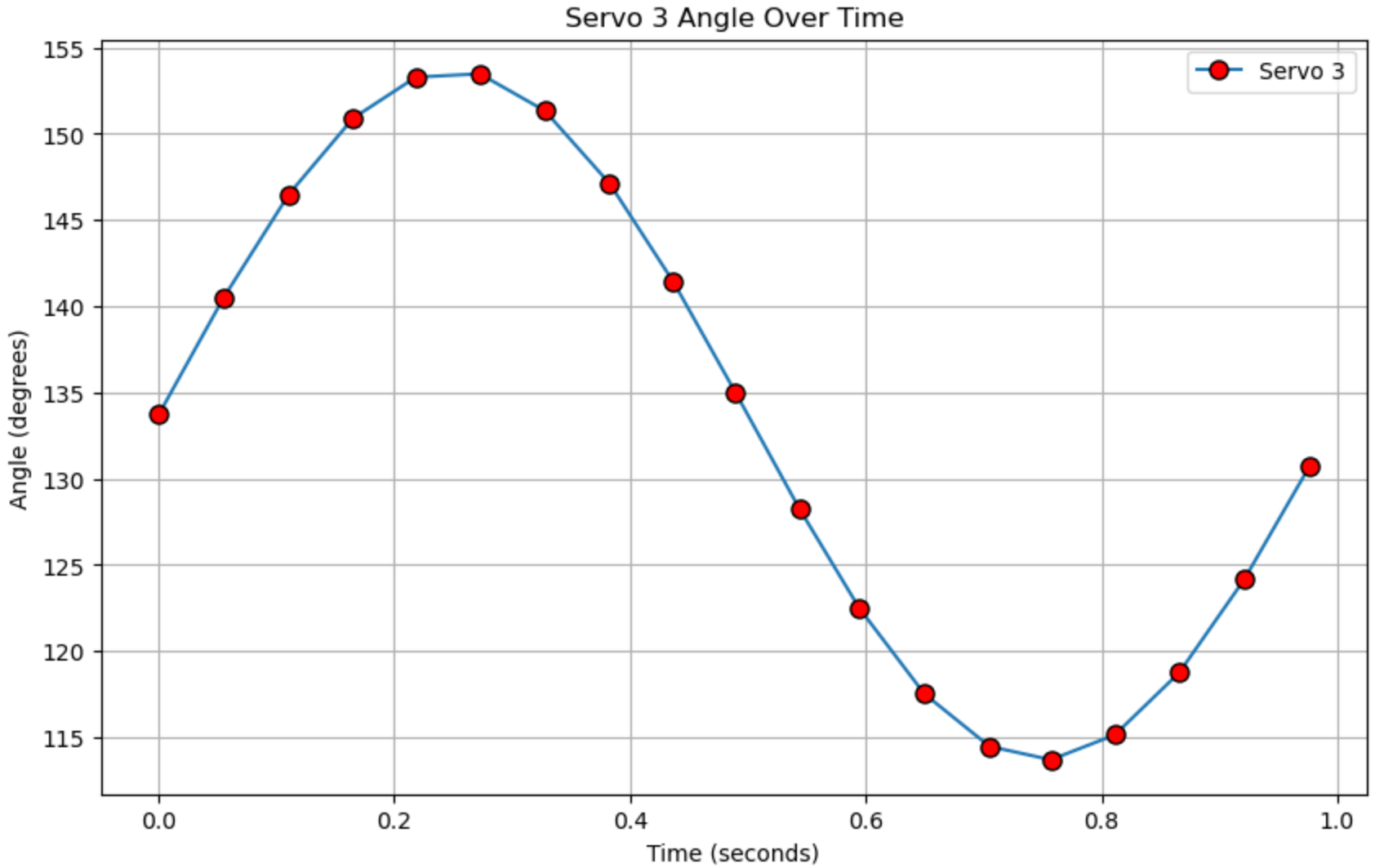
times = []
servo3_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo3 = 133.68 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"{servo3} while t={current_time}")
    servo3_angles.append(servo3)
    time.sleep(0.05)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo3_angles, label='Servo 3', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 3 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
133.7042680494782 while t=0.00019311904907226562
140.5145496894835 while t=0.055505990982055664
146.48908414826755 while t=0.1106269359588623
150.90506293862595 while t=0.1651599407196045
153.28883681409758 while t=0.21847105026245117
153.47756183193448 while t=0.27266383171081543
151.33393697513418 while t=0.3278627395629883
147.11271077773804 while t=0.382796049118042
141.4028146877862 while t=0.4369039535522461
135.00917868245284 while t=0.48941493034362793
128.2498588063595 while t=0.5437610149383545
122.48359455208742 while t=0.5945649147033691
117.52081163480523 while t=0.6497139930725098
114.4759103514349 while t=0.704949140548706
113.69934113782226 while t=0.7569999694824219
115.1423493892868 while t=0.8112390041351318
118.74436243363729 while t=0.8657989501953125
124.1425406330596 while t=0.9208850860595703
130.6834355383827 while t=0.9760639667510986
```




In [44]:
```
# graph servo 4 angles
start_time = time.time()
duration = 1.0

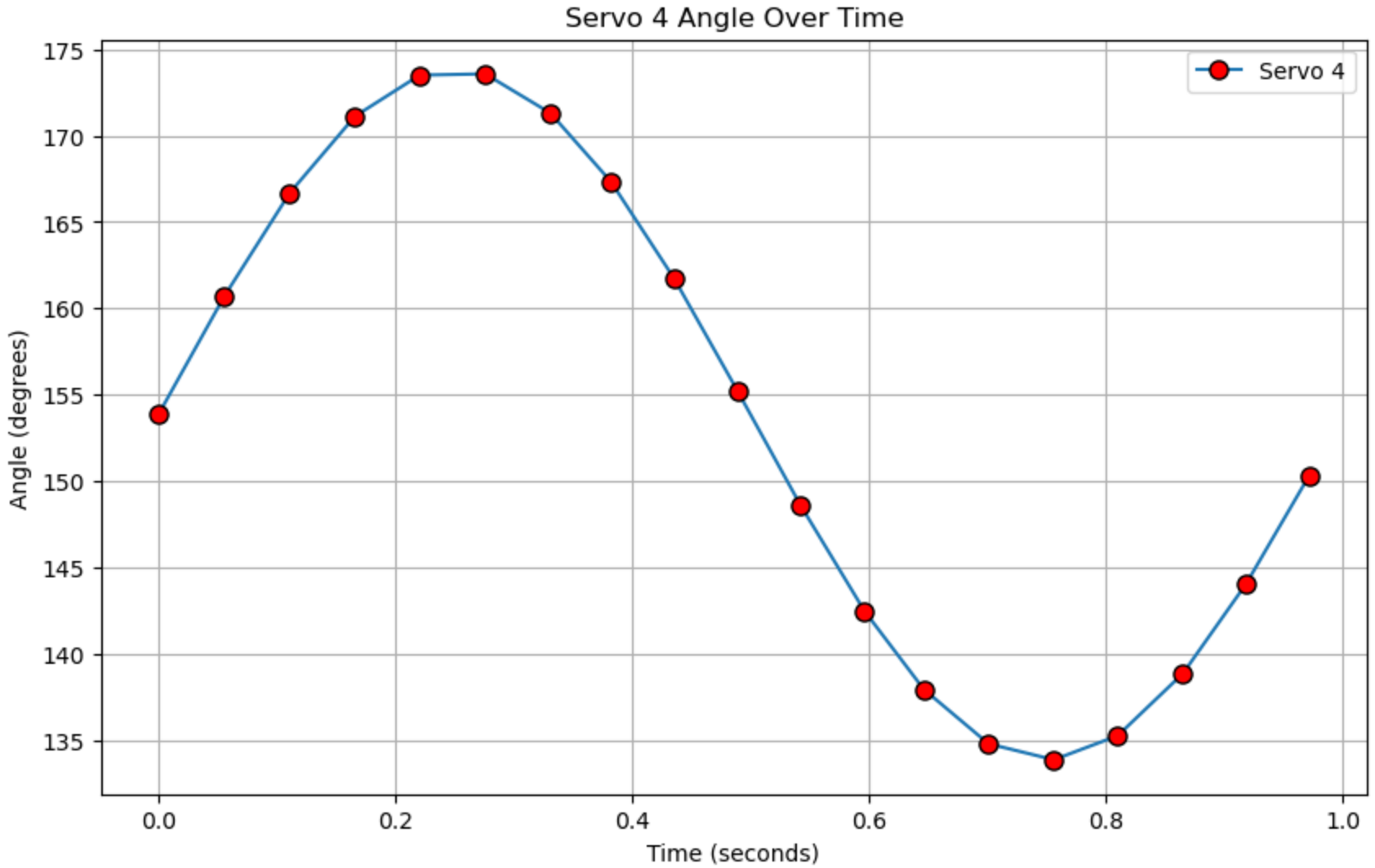
times = []
servo4_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo4 = 153.84 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"{servo4} while t={current_time}")
    servo4_angles.append(servo4)
    time.sleep(0.05)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo4_angles, label='Servo 4', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 4 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
153.86573611588165 while t=0.0002048015594482422
160.69828050781643 while t=0.05570697784423828
166.67244705968335 while t=0.11086916923522949
171.11770685155207 while t=0.16598796844482422
173.50118232625326 while t=0.22066283226013184
173.5751685161617 while t=0.27592897415161133
171.29887502254846 while t=0.331104040145874
167.34192968777546 while t=0.3820509910583496
161.73715817912085 while t=0.4353969097137451
155.17668206371278 while t=0.48935508728027344
148.61370584697622 while t=0.5420780181884766
142.47072889305008 while t=0.5962309837341309
137.9330998197373 while t=0.646355152130127
134.7813313222977 while t=0.7009758949279785
133.85488595158054 while t=0.756140947341919
135.2465529009338 while t=0.8100450038909912
138.85133955427912 while t=0.8651630878448486
144.04980994826025 while t=0.9185879230499268
150.30699281746007 while t=0.9717369079589844
```




In [45]:
```
# graph servo 5 angles
start_time = time.time()
duration = 1.0

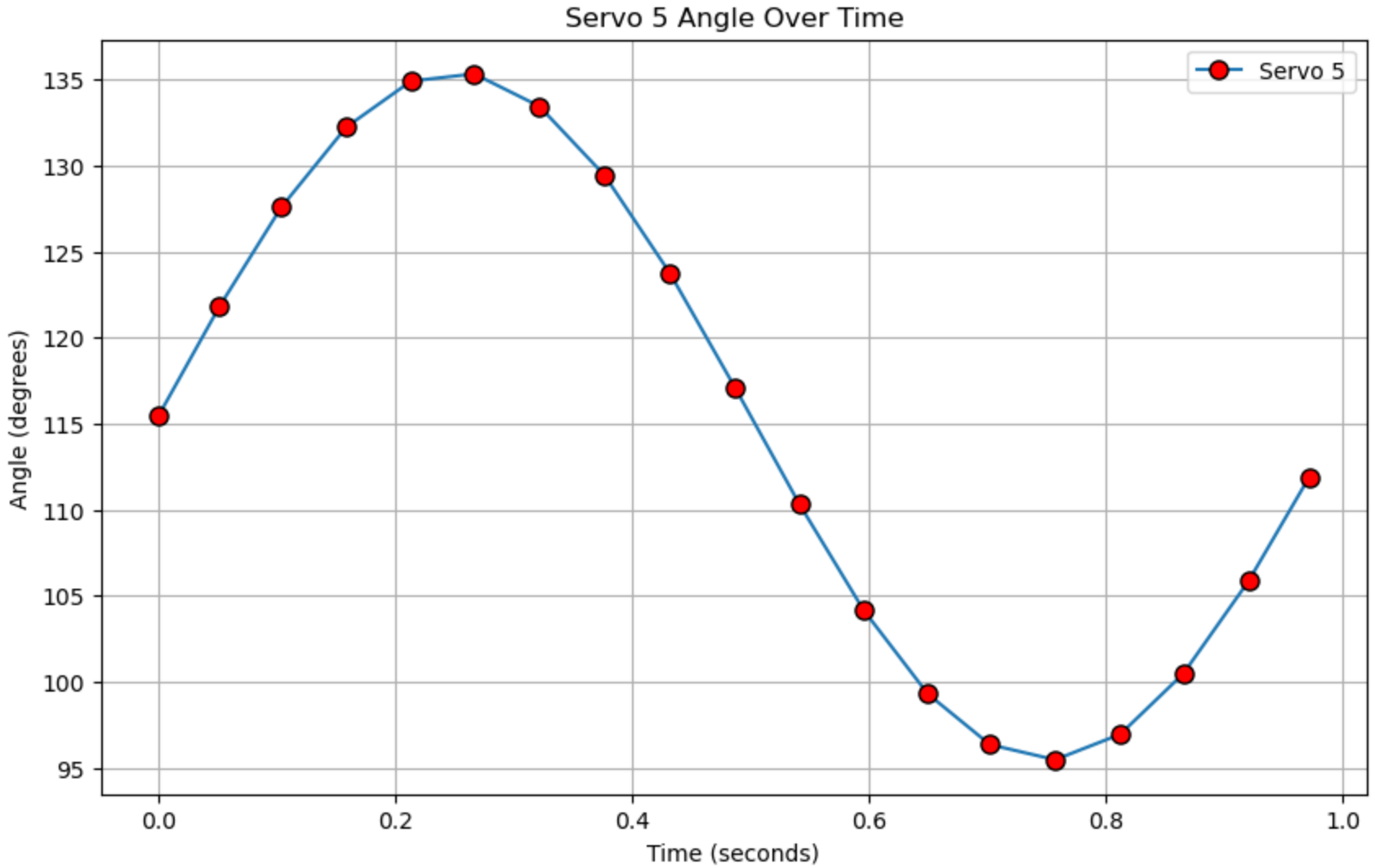
times = []
servo5_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo5 = 115.44 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"{servo5} while t={current_time}")
    servo5_angles.append(servo5)
    time.sleep(0.05)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo5_angles, label='Servo 5', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 5 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
115.46399840461412 while t=0.00019097328186035156
121.7826374545227 while t=0.05135989189147949
127.57502740645123 while t=0.10376381874084473
132.2336141771351 while t=0.1586289405822754
134.90935326121445 while t=0.2132558822631836
135.33133820280378 while t=0.2665979862213135
133.44894069817673 while t=0.32161974906921387
129.42676878502886 while t=0.3767390251159668
123.74559467999879 while t=0.4318418502807617
117.06181013469035 while t=0.4870798587799072
110.31128880623311 while t=0.5412740707397461
104.1625985163297 while t=0.595344066619873
99.29031468309888 while t=0.6495857238769531
96.34330910213846 while t=0.7019839286804199
95.459970576826 while t=0.757112979888916
96.94461938331591 while t=0.812129020690918
100.4583041651432 while t=0.8652467727661133
105.85485771042721 while t=0.9204530715942383
111.88461265709199 while t=0.9715559482574463
```




In [46]:
```
# graph servo 6 angles
start_time = time.time()
duration = 1.0

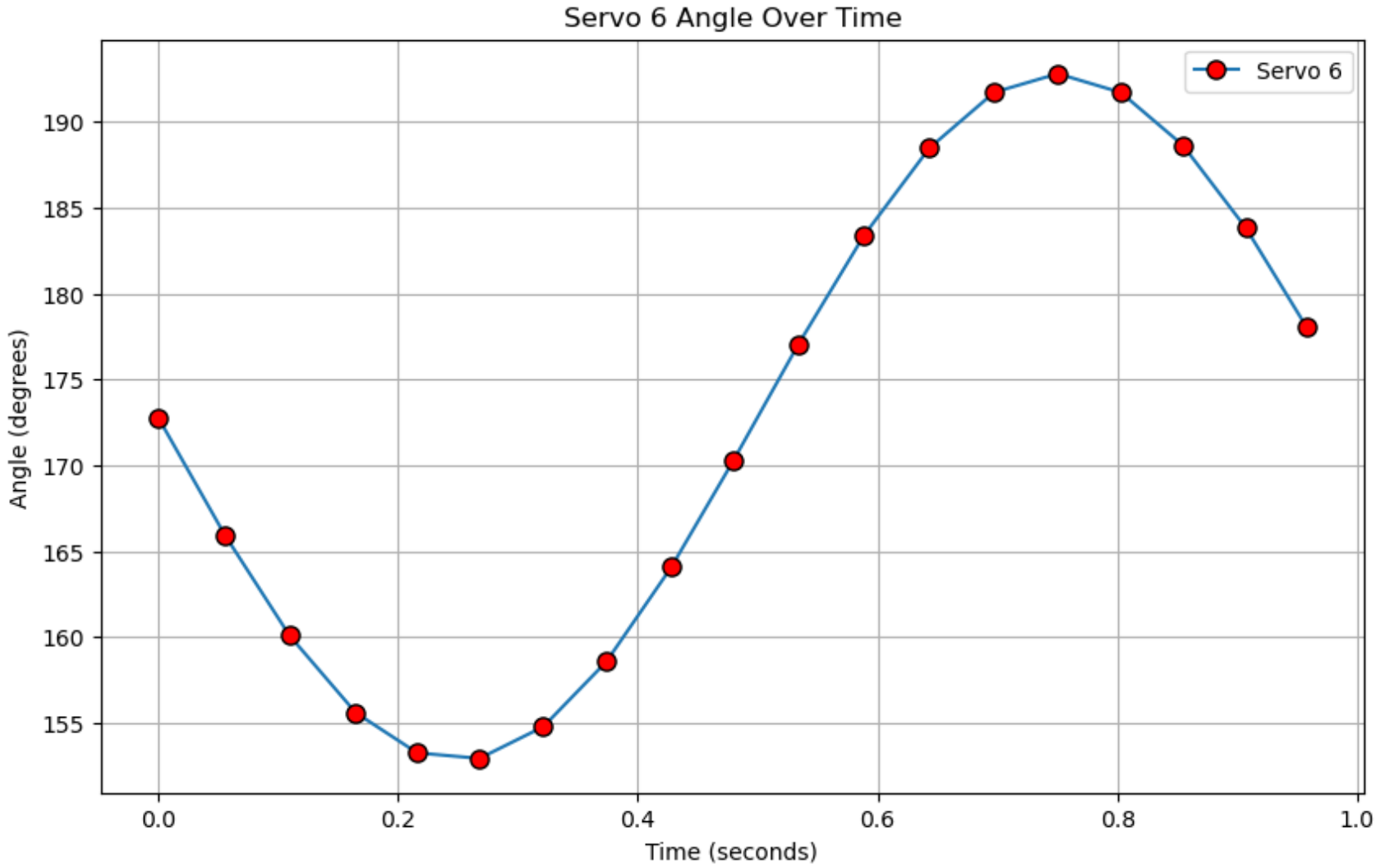
times = []
servo6_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo6 = 172.80 + (20 * math.sin((2 * math.pi / 1) * current_time + math.pi))
    print(f"{servo6} while t={current_time}")
    servo6_angles.append(servo6)
    time.sleep(0.05)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo6_angles, label='Servo 6', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 6 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
172.7750128975727 while t=0.00019884109497070312
165.95303460591654 while t=0.05561113357543945
160.07543867439264 while t=0.10975313186645508
155.59041058921656 while t=0.1649179458618164
153.24992808699693 while t=0.21617722511291504
152.92923704171784 while t=0.26810288429260254
154.7731268662487 while t=0.3212909698486328
158.55896027318957 while t=0.3738830089569092
164.06040336417556 while t=0.4280240535736084
170.236871738351 while t=0.47954702377319336
177.00832922029429 while t=0.5337409973144531
183.37825413076507 while t=0.5887000560760498
188.46533142814786 while t=0.6432240009307861
191.71432865417654 while t=0.6973190307617188
192.7999450372553 while t=0.750373125076294
191.7035238237277 while t=0.8029448986053467
188.63109777466758 while t=0.8546359539031982
183.8173873855411 while t=0.9071481227874756
178.06604740870915 while t=0.9575941562652588
```




In [47]:
```
# graph servo 7 angles
start_time = time.time()
duration = 1.0

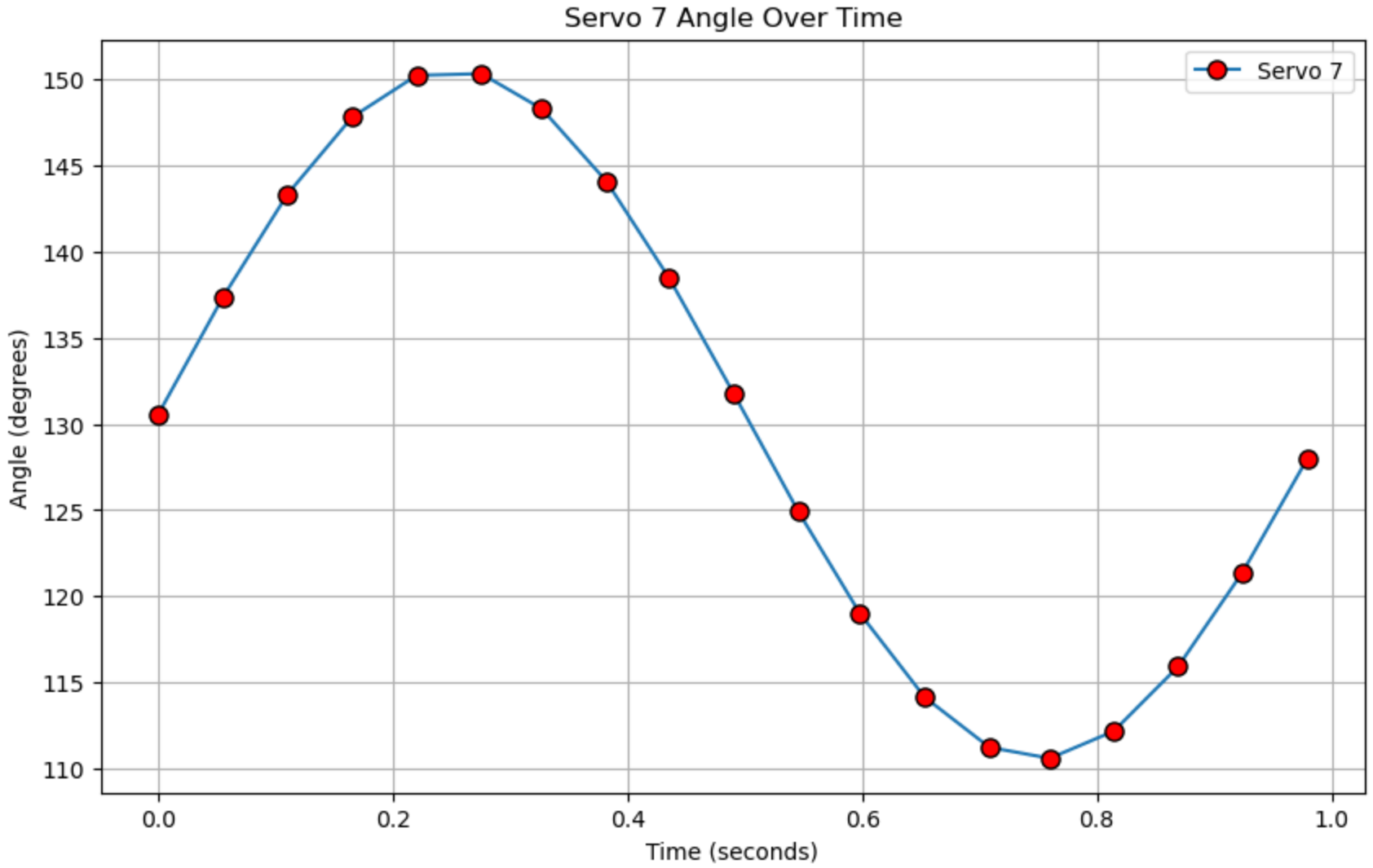
times = []
servo7_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo7 = 130.56 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"{servo7} while t={current_time}")
    servo7_angles.append(servo7)
    time.sleep(0.05)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo7_angles, label='Servo 7', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 7 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
130.5676998643115 while t=6.127357482910156e-05
137.34719630550387 while t=0.05510520935058594
143.3236764528662 while t=0.11015701293945312
147.7871940939133 while t=0.1651933193206787
150.21119285338642 while t=0.22023224830627441
150.30743522776953 while t=0.27532005310058594
148.27319514336622 while t=0.32685327529907227
144.0745233538325 while t=0.3819150924682617
138.45319424667105 while t=0.43543124198913574
131.75357829233408 while t=0.4904961585998535
124.91454613060573 while t=0.5455441474914551
119.00761145986412 while t=0.5980091094970703
114.14987798537356 while t=0.6531541347503662
111.24002900198232 while t=0.7083780765533447
110.59869781373588 while t=0.7599022388458252
112.17371191487005 while t=0.8143720626831055
115.91595108903545 while t=0.869246244430542
121.3951048169437 while t=0.9242391586303711
127.97233035041558 while t=0.9793500900268555
```




In [64]:
```
# graph servo 8 angles
start_time = time.time()
duration = 1.0

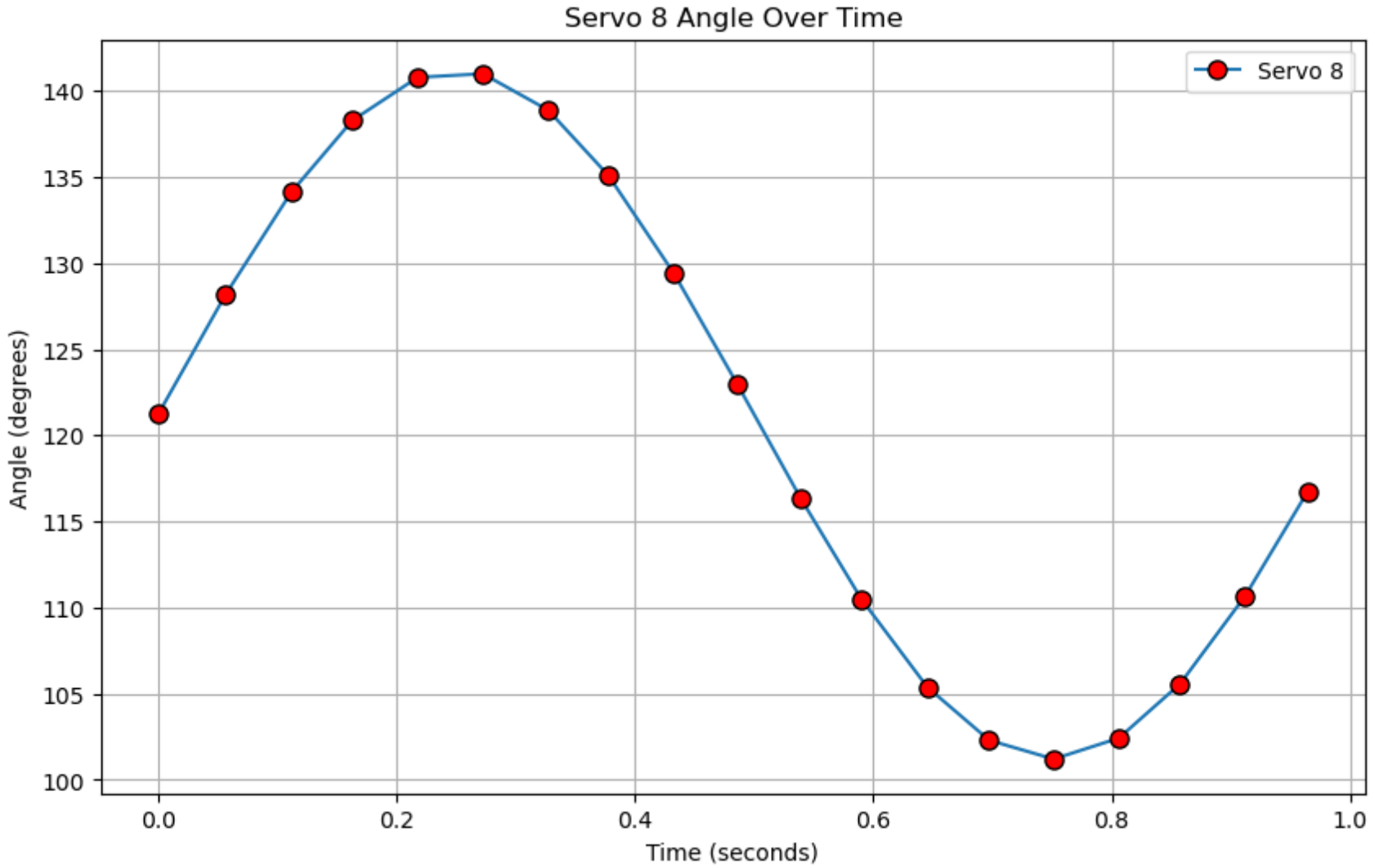
times = []
servo8_angles = []

while time.time() - start_time < duration:
    current_time = time.time() - start_time
```

```
    times.append(current_time)
    servo8 = 121.20 + (20 * math.sin((2 * math.pi / 1) * current_time + 0))
    print(f"{servo8} while t={current_time}")
    servo8_angles.append(servo8)
    time.sleep(0.05)  # Ensure this is correct and consistent

plt.figure(figsize=(10, 6))
plt.plot(times, servo8_angles, label='Servo 8', linestyle='-', marker='o', markersize=8, markerfacecolor='
plt.xlabel('Time (seconds)')
plt.ylabel('Angle (degrees)')
plt.title('Servo 8 Angle Over Time')
plt.legend()
plt.grid(True)
plt.show()
```

```
121.24859598417326 while t=0.0003867149353027344
128.17733135101778 while t=0.0567166805267334
134.12377177900677 while t=0.11181902885437012
138.28809366420734 while t=0.163038969039917
140.79234072950126 while t=0.21781086921691895
141.000742563076 while t=0.27248477935791016
138.88941789023733 while t=0.32725977897644043
135.08973692168038 while t=0.37781572341918945
129.36979931632897 while t=0.4330277442932129
122.93588524189803 while t=0.48616886138916016
116.31099056359903 while t=0.5393037796020508
110.47520252205618 while t=0.5900778770446777
105.37873919475012 while t=0.6452360153198242
102.29267343121396 while t=0.6971478462219238
101.20056259138073 while t=0.7511937618255615
102.41735342640425 while t=0.8058156967163086
105.56729928564422 while t=0.8571929931640625
110.67916906848875 while t=0.9118378162384033
116.7321909891583 while t=0.9641437530517578
```




In [63]:
```
for _ in range(1):

    # Move front and back legs from start to point 1
    servo1_angle1_time = 0.10880398750305176
    servo1_angle1 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle1_time + 0))
    #servo1.move(servo1_angle1, 100)
    print(f"Servo 1 is at {servo1_angle1} degrees.")
    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.")
    servo5_angle1_time = 0.10376381874084473
    servo5_angle1 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle1_time + 0))
    #servo5.move(servo5_angle1, 100)
    print(f"Servo 5 is at {servo5_angle1} degrees.")
    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.")
    time.sleep(0.1)

    # Move left and right legs from start to point 1
    servo3_angle1_time = 0.1106269359588623
    servo3_angle1 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle1_time + 0))
    # servo3.move(servo3_angle1, 100)
    print(f"Servo 3 is at {servo3_angle1} degrees.")
    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.")
    servo7_angle1_time = 0.11015701293945312
    servo7_angle1 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle1_time + 0))
    # servo7.move(servo7_angle1, 100)
    print(f"Servo 7 is at {servo7_angle1} degrees.")
    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.")
    time.sleep(0.25)

    print(f"Servos moved from home to point 1.\n")

    # Move front and back legs from point 1 to point 2
    servo1_angle2_time = 0.27066493034362793
    servo1_angle2 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle2_time + 0))
    #servo1.move(servo1_angle2, 100)
    print(f"Servo 1 is at {servo1_angle2} degrees.")
    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.")
```

```
    servo5_angle2_time = 0.2665979862213135
    servo5_angle2 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle2_time + 0))
    #servo5.move(servo5_angle2, 100)
    print(f"Servo 5 is at {servo5_angle2} degrees.")
    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.")
    time.sleep(0.25)

    # Move left and right legs from point 1 to point 2
    servo3_angle2_time = 0.27266383171081543
    servo3_angle2 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle2_time + 0))
    # servo3.move(servo3_angle2, 100)
    print(f"Servo 3 is at {servo3_angle2} degrees.")
    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.")
    servo7_angle2_time = 0.27532005310058594
    servo7_angle2 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle2_time + 0))
    # servo7.move(servo7_angle2, 100)
    print(f"Servo 7 is at {servo7_angle2} degrees.")
    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.")
    time.sleep(0.25)

    print(f"Servos moved from point 1 to point 2.\n")

    # Move front and back legs from point 2 to point 3
    servo1_angle3_time = 0.428757905960083
    servo1_angle3 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle3_time + 0))
    #servo1.move(servo1_angle3, 100)
    print(f"Servo 1 is at {servo1_angle3} degrees.")
    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.")
    servo5_angle3_time = 0.4318418502807617
    servo5_angle3 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle3_time + 0))
```

```
    #servo5.move(servo5_angle3, 100)
    print(f"Servo 5 is at {servo5_angle3} degrees.")
    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.")
    time.sleep(0.25)

    # Move left and right legs from point 2 to point 3
    servo3_angle3_time = 0.4369039535522461
    servo3_angle3 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle3_time + 0))
    # servo3.move(servo3_angle3, 100)
    print(f"Servo 3 is at {servo3_angle3} degrees.")
    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.")
    servo7_angle3_time = 0.43543124198913574
    servo7_angle3 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle3_time + 0))
    # servo7.move(servo7_angle3, 100)
    print(f"Servo 7 is at {servo7_angle3} degrees.")
    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.")
    time.sleep(0.25)

    print(f"Servos moved from point 2 to point 3.\n")

    # Move front and back legs from point 3 to point 4
    servo1_angle4_time = 0.5904650688171387
    servo1_angle4 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle4_time + 0))
    #servo1.move(servo1_angle4, 100)
    print(f"Servo 1 is at {servo1_angle4} degrees.")
    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.")
    servo5_angle4_time = 0.595344066619873
    servo5_angle4 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle4_time + 0))
    #servo5.move(servo5_angle4, 100)
    print(f"Servo 5 is at {servo5_angle4} degrees.")
```

```
    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.")
    time.sleep(0.25)

    # Move left and right legs from point 3 to point 4
    servo3_angle4_time = 0.5945649147033691
    servo3_angle4 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle4_time + 0))
    # servo3.move(servo3_angle4, 100)
    print(f"Servo 3 is at {servo3_angle4} degrees.")
    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.")
    servo7_angle4_time = 0.5980091094970703
    servo7_angle4 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle4_time + 0))
    # servo7.move(servo7_angle4, 100)
    print(f"Servo 7 is at {servo7_angle4} degrees.")
    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.")
    time.sleep(0.25)

    print(f"Servos moved from point 3 to point 4.\n")

    # Move front and back legs from point 4 to point 5
    servo1_angle5_time = 0.7522311210632324
    servo1_angle5 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle5_time + 0))
    #servo1.move(servo1_angle5, 100)
    print(f"Servo 1 is at {servo1_angle5} degrees.")
    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.")
    servo5_angle5_time = 0.757112979888916
    servo5_angle5 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle5_time + 0))
    #servo5.move(servo5_angle5, 100)
    print(f"Servo 5 is at {servo5_angle5} degrees.")
    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.")
time.sleep(0.25)

# Move left and right legs from point 4 to point 5
servo3_angle5_time = 0.7569999694824219
servo3_angle5 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle5_time + 0))
# servo3.move(servo3_angle5, 100)
print(f"Servo 3 is at {servo3_angle5} degrees.")
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.")
servo7_angle5_time = 0.7599022388458252
servo7_angle5 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle5_time + 0))
# servo7.move(servo7_angle5, 100)
print(f"Servo 7 is at {servo7_angle5} degrees.")
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.")
time.sleep(0.25)

print(f"Servos moved from point 4 to point 5.\n")

# Move front and back legs from point 5 to point 6
servo1_angle6_time = 0.9133250713348389
servo1_angle6 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle6_time + 0))
#servo1.move(servo1_angle6, 100)
print(f"Servo 1 is at {servo1_angle6} degrees.")
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.")
servo5_angle6_time = 0.9204530715942383
servo5_angle6 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle6_time + 0))
#servo5.move(servo5_angle6, 100)
print(f"Servo 5 is at {servo5_angle6} degrees.")
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.")
```

```
time.sleep(0.25)

# Move left and right legs from point 5 to point 6
servo3_angle6_time = 0.9208850860595703
servo3_angle6 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle6_time + 0))
# servo3.move(servo3_angle6, 100)
print(f"Servo 3 is at {servo3_angle6} degrees.")
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.")
servo7_angle6_time = 0.9242391586303711
servo7_angle6 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle6_time + 0))
# servo7.move(servo7_angle6, 100)
print(f"Servo 7 is at {servo7_angle6} degrees.")
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.")
time.sleep(0.25)

print(f"Servos moved from point 5 to point 6.\n")

# Move front and back legs from point 6 to home
servo1_angle7_time = 0.00032210350036621094
servo1_angle7 = 147.36 + (20 * math.sin((2 * math.pi / 1) * servo1_angle7_time + 0))
#servo1.move(servo1_angle7, 100)
print(f"Servo 1 is at {servo1_angle7} degrees.")
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.")
servo5_angle7_time = 0.00019097328186035156
servo5_angle7 = 115.44 + (20 * math.sin((2 * math.pi / 1) * servo5_angle7_time + 0))
#servo5.move(servo5_angle7, 100)
print(f"Servo 5 is at {servo5_angle7} degrees.")
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.")
time.sleep(0.25)
```

```
    # Move left and right legs from point 6 to home
    servo3_angle7_time = 0.00019311904907226562
    servo3_angle7 = 133.68 + (20 * math.sin((2 * math.pi / 1) * servo3_angle7_time + 0))
    # servo3.move(servo3_angle7, 100)
    print(f"Servo 3 is at {servo3_angle7} degrees.")
    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.")
    servo7_angle7_time = 0.0002048015594482422
    servo7_angle7 = 130.56 + (20 * math.sin((2 * math.pi / 1) * servo7_angle7_time + 0))
    # servo7.move(servo7_angle7, 100)
    print(f"Servo 7 is at {servo7_angle7} degrees.")
    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.")
    time.sleep(0.25)

    print(f"Servos moved from point 6 back home.\n")

    print(f"\nOne step completed.\n")
```

```
Servo 1 is at 159.99231635470315 degrees.
Servo 2 is at 76.08503369371587 degrees.
Servo 5 is at 127.57502740645123 degrees.
Servo 6 is at 160.07543867439264 degrees.
Servo 3 is at 146.48908414826755 degrees.
Servo 4 is at 166.67244705968335 degrees.
Servo 7 is at 143.3236764528662 degrees.
Servo 8 is at 133.70231179069782 degrees.
Servos moved from home to point 1.

Servo 1 is at 167.19164834088713 degrees.
Servo 2 is at 69.0426718759987 degrees.
Servo 5 is at 135.33133820280378 degrees.
Servo 6 is at 152.92923704171784 degrees.
Servo 3 is at 153.47756183193448 degrees.
Servo 4 is at 173.5751685161617 degrees.
Servo 7 is at 150.30743522776953 degrees.
Servo 8 is at 141.09673699478847 degrees.
Servos moved from point 1 to point 2.

Servo 1 is at 156.01655603105948 degrees.
Servo 2 is at 81.42551095966611 degrees.
Servo 5 is at 123.74559467999879 degrees.
Servo 6 is at 164.06040336417556 degrees.
Servo 3 is at 141.4028146877862 degrees.
Servo 4 is at 161.73715817912085 degrees.
Servo 7 is at 138.45319424667105 degrees.
Servo 8 is at 129.7483121119937 degrees.
Servos moved from point 2 to point 3.

Servo 1 is at 136.59416548192715 degrees.
Servo 2 is at 100.81084435152843 degrees.
Servo 5 is at 104.1625985163297 degrees.
Servo 6 is at 183.37825413076507 degrees.
Servo 3 is at 122.48359455208742 degrees.
Servo 4 is at 142.47072889305008 degrees.
Servo 7 is at 119.00761145986412 degrees.
Servo 8 is at 110.34787828815962 degrees.
Servos moved from point 3 to point 4.

Servo 1 is at 127.36196516444011 degrees.
Servo 2 is at 108.6766521622526 degrees.
```

```
Servo 5 is at 95.459970576826 degrees.
Servo 6 is at 192.7999450372553 degrees.
Servo 3 is at 113.69934113782226 degrees.
Servo 4 is at 133.85488595158054 degrees.
Servo 7 is at 110.59869781373588 degrees.
Servo 8 is at 101.20357449360175 degrees.
Servos moved from point 4 to point 5.

Servo 1 is at 136.99857175879558 degrees.
Servo 2 is at 96.98557541624996 degrees.
Servo 5 is at 105.85485771042721 degrees.
Servo 6 is at 183.8173873855411 degrees.
Servo 3 is at 124.1425406330596 degrees.
Servo 4 is at 144.04980994826025 degrees.
Servo 7 is at 121.3951048169437 degrees.
Servo 8 is at 110.25979464967625 degrees.
Servos moved from point 5 to point 6.

Servo 1 is at 147.40047669198634 degrees.
Servo 2 is at 88.7780988333626 degrees.
Servo 5 is at 115.46399840461412 degrees.
Servo 6 is at 172.7750128975727 degrees.
Servo 3 is at 133.7042680494782 degrees.
Servo 4 is at 153.86573611588165 degrees.
Servo 7 is at 130.58573611588164 degrees.
Servo 8 is at 121.2231295489116 degrees.
Servos moved from point 6 back home.


One step completed.
```

In [ ]: