#Average Displacement Error (ADE) and Final Displacement Error (FDE

import matplotlib.pyplot as plt

import numpy as np

# Placeholder data for demonstration

epochs = np.arange(0, 220, 10)

lshwgan\_train\_ade = np.random.uniform(0.9, 0.7, len(epochs))  # Replace with actual training ADE data for LSGAN

lsgan\_train\_ade = np.random.uniform(0.4, 0.5, len(epochs))   # Replace with actual training ADE data for SGAN

lshwgan\_test\_ade = np.random.uniform(0.8, 0.6, len(epochs))   # Replace with actual testing ADE data for LSGAN

lsgan\_test\_ade = np.random.uniform(0.3, 0.4, len(epochs))    # Replace with actual testing ADE data for SGAN

lshwgan\_train\_fde = np.random.uniform(1.4, 1.6, len(epochs))  # Replace with actual training FDE data for LSGAN

lsgan\_train\_fde = np.random.uniform(0.6, 0.7, len(epochs))   # Replace with actual training FDE data for SGAN

lshwgan\_test\_fde = np.random.uniform(1.4, 1.6, len(epochs))   # Replace with actual testing FDE data for LSGAN

lsgan\_test\_fde = np.random.uniform(0.6, 0.7, len(epochs))    # Replace with actual testing FDE data for SGAN

# Plot configurations

fig, axs = plt.subplots(2, 2, figsize=(10, 9))

# Average Displacement Error (ADE) - Training

axs[0, 0].plot(epochs, lshwgan\_train\_ade, color='purple', label='LSHWGAN')

axs[0, 0].plot(epochs, lsgan\_train\_ade, color='maroon', label='SGAN')

axs[0, 0].set\_title("LSHWGAN - Training Phase")

axs[0, 0].set\_xlabel("EPOCHS")

axs[0, 0].set\_ylabel("ACCURACY")

axs[0, 0].legend()

# Final Displacement Error (FDE) - Training

axs[0, 1].plot(epochs, lshwgan\_train\_fde, color='purple', label='LSHWGAN')

axs[0, 1].plot(epochs, lsgan\_train\_fde, color='maroon', label='LSGAN')

axs[0, 1].set\_title("LSHWGAN - Training Phase")

axs[0, 1].set\_xlabel("EPOCHS")

axs[0, 1].set\_ylabel("ACCURACY")

axs[0, 1].legend()

# Average Displacement Error (ADE) - Testing

axs[1, 0].plot(epochs, lshwgan\_test\_ade, color='purple', label='LSHWGAN')

axs[1, 0].plot(epochs, lsgan\_test\_ade, color='maroon', label='LSGAN')

axs[1, 0].set\_title("LSHWGAN - Testing Phase")

axs[1, 0].set\_xlabel("EPOCHS")

axs[1, 0].set\_ylabel("ACCURACY")

axs[1, 0].legend()

# Final Displacement Error (FDE) - Testing

axs[1, 1].plot(epochs, lshwgan\_test\_fde, color='purple', label='LSHWGAN')

axs[1, 1].plot(epochs, lsgan\_test\_fde, color='maroon', label='LSGAN')

axs[1, 1].set\_title("LSHWGAN - Testing Phase")

axs[1, 1].set\_xlabel("EPOCHS")

axs[1, 1].set\_ylabel("ACCURACY")

axs[1, 1].legend()

# Adjust layout and display

plt.tight\_layout()

plt.show()