CODE – DISPLAYING SIGNAL 1

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x1 = np.cos(6\* np.pi \* t)

axs.set\_title(" x1 Signal")

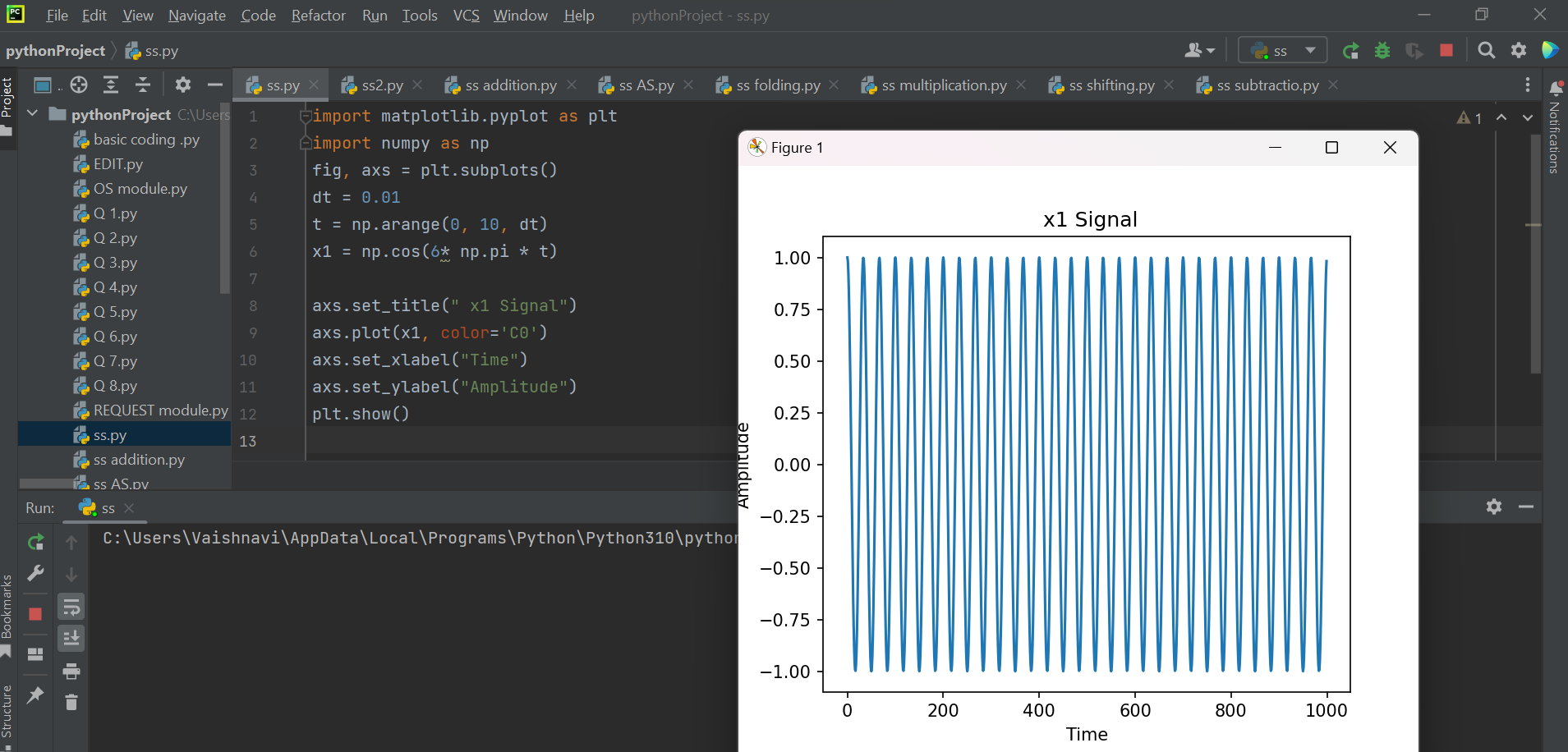
axs.plot(x1, color='C0')

axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

plt.show()

OUTPUT –



CODE – DISPLAYING SIGNAL 2

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x2 = np.sin(2 \* np.pi \* t)

axs.set\_title("x2 Signal")

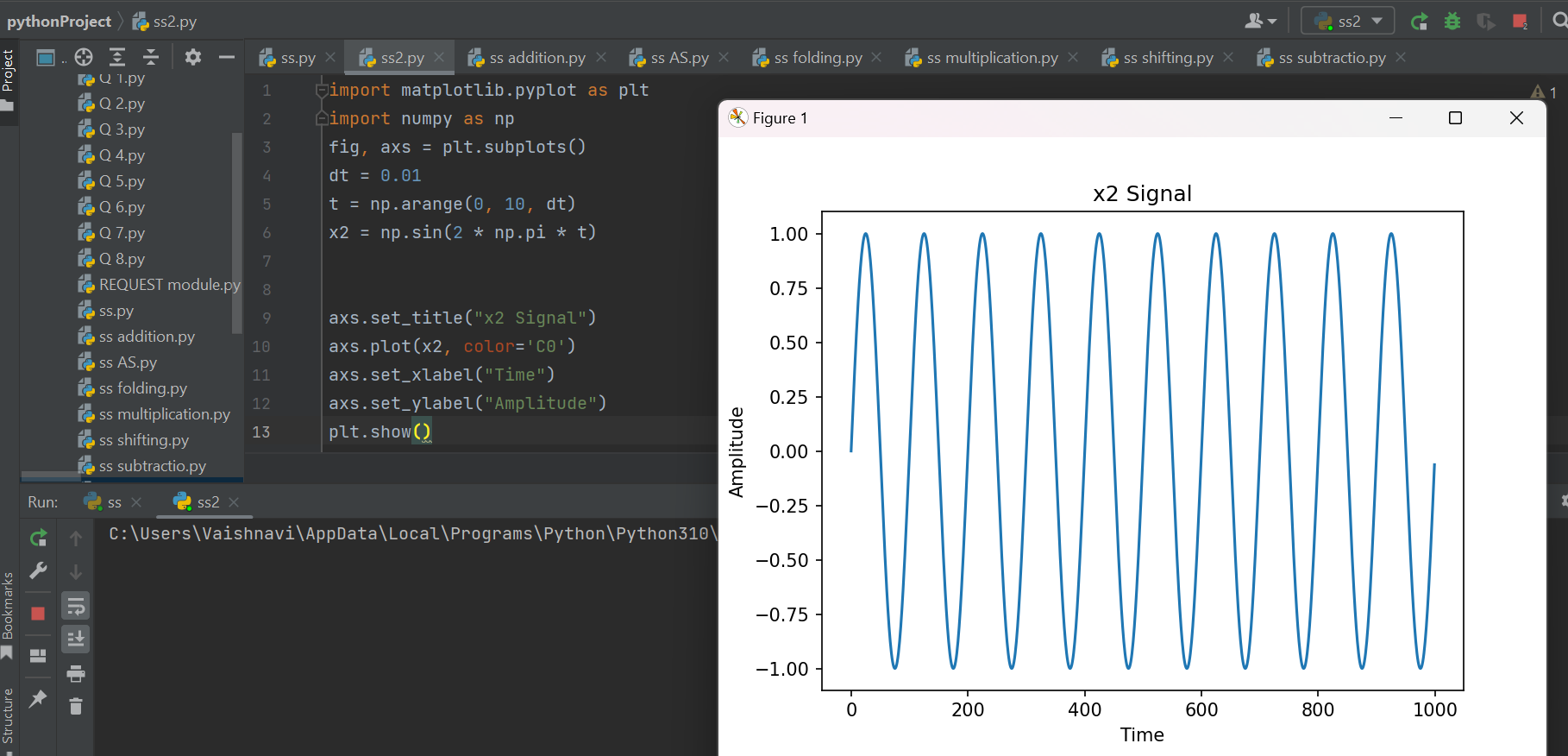
axs.plot(x2, color='C0')

axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

plt.show()

OUTPUT –



CODE – ADDITION OF 2 SIGNALS

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x1 = np.cos(6\* np.pi \* t)

x2 = np.sin(2 \* np.pi \* t)

y1 = x1+x2

axs.set\_title("Addition of Signals")

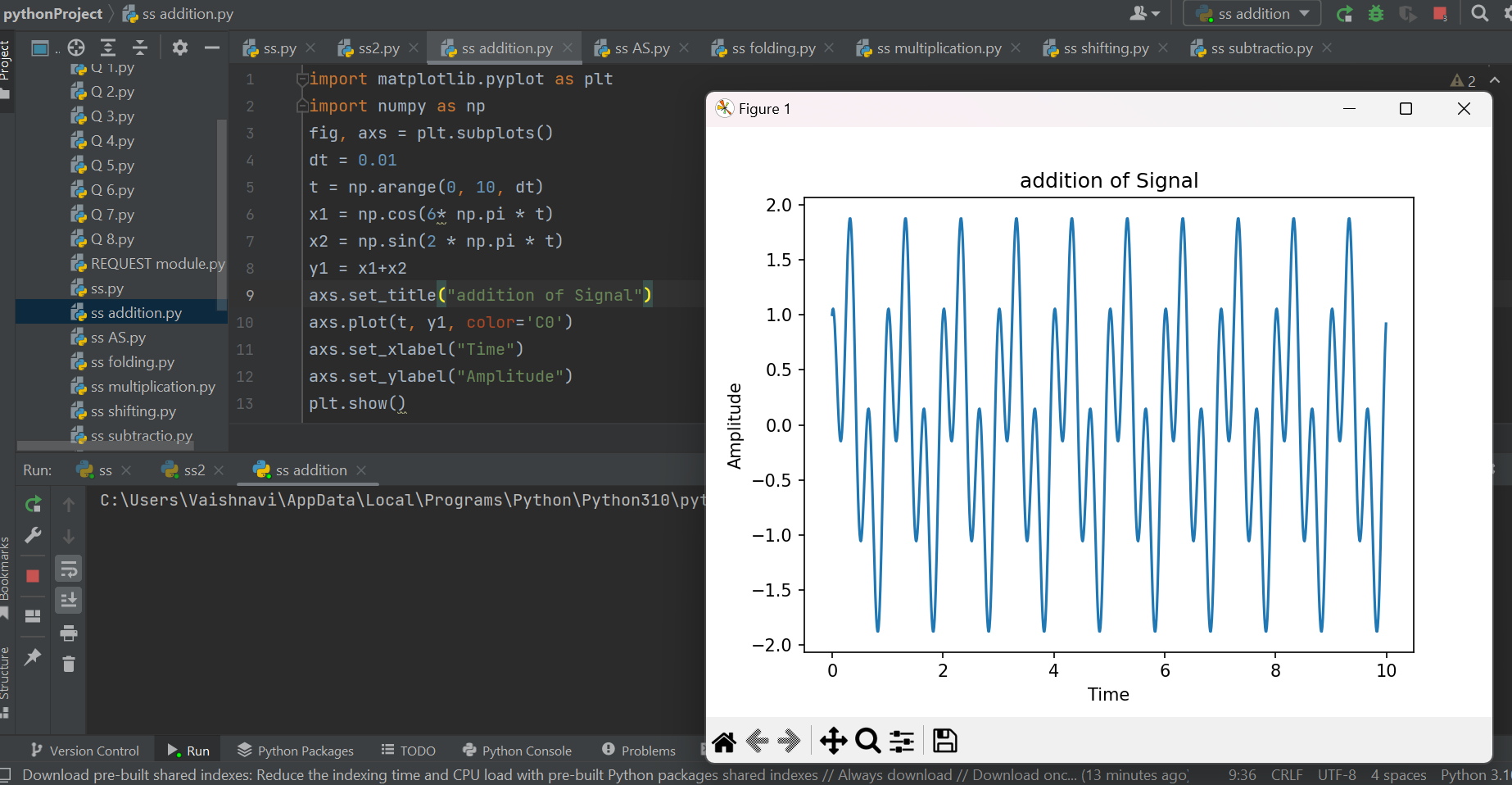
axs.plot(t, y1, color='C0')

axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

plt.show()

OUTPUT –



CODE – SUBTRACTION OF 2 SIGNALS

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x1 = np.sin(4 \* np.pi \* t)

x2 = np.cos(2 \* np.pi \* t)

y1 = x1-x2

axs.set\_title("Subtraction of Signals")

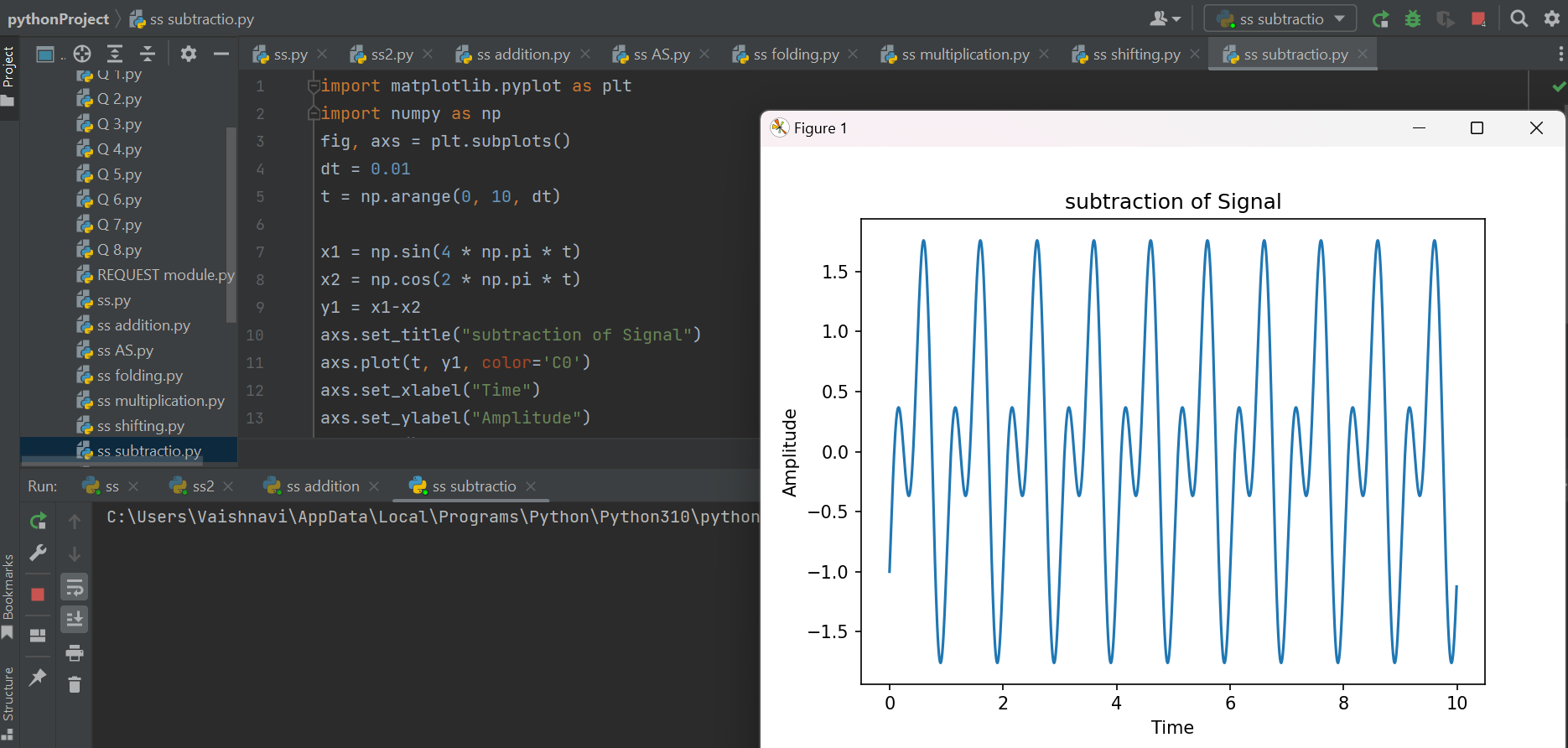
axs.plot(t, y1, color='C0')

axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

plt.show()

OUTPUT –



CODE – MULTIPLICATION OF 2 SIGNALS

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x1 = np.cos(6 \* np.pi \* t)

x2 = np.sin(4 \* np.pi \* t)

y1=x1\*x2

axs.plot(x1,x2, color='C0')

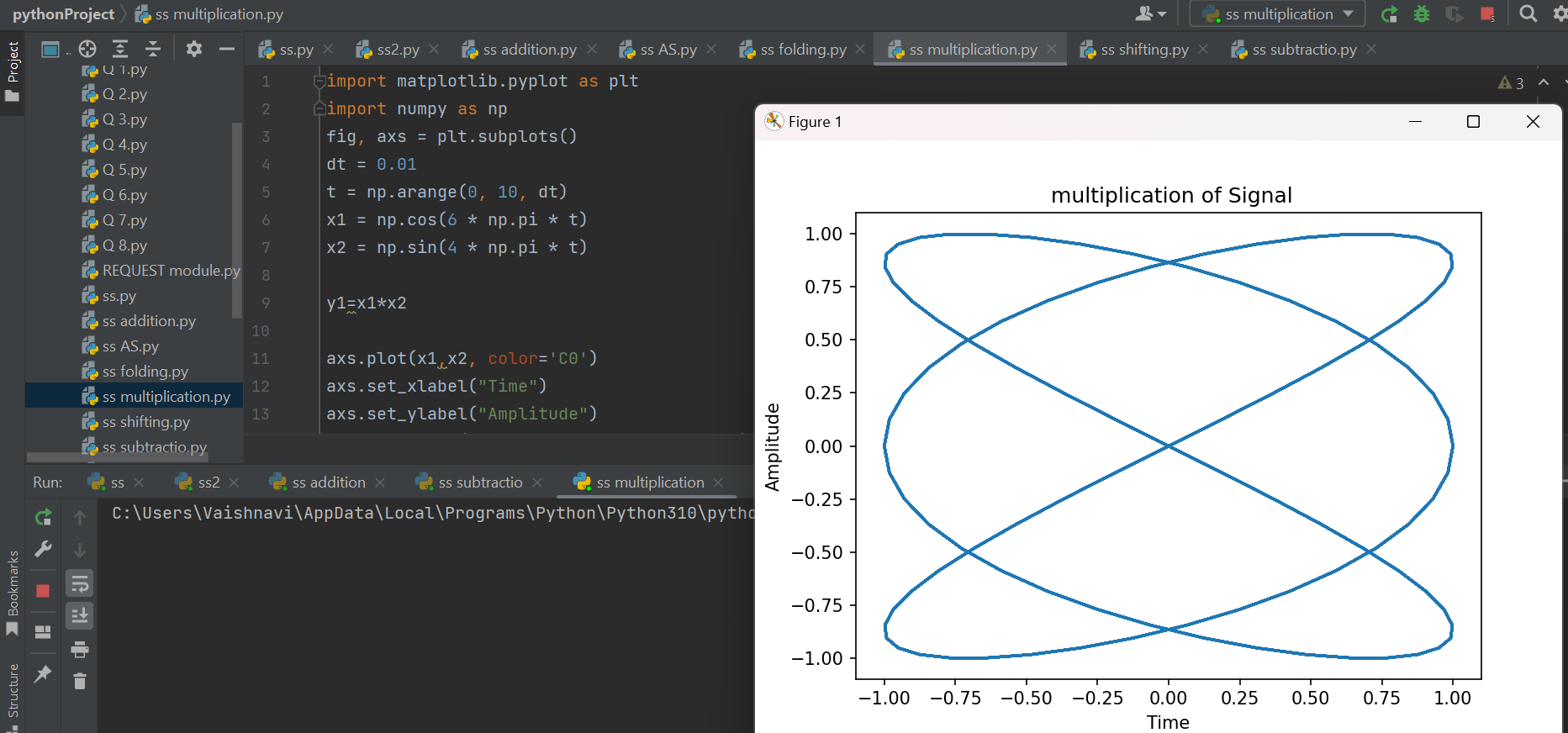
axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

axs.set\_title(" Multiplication of Signals")

plt.show()

OUTPUT -



CODE – AMPLITUDE SCALING OF 2 SIGNALS

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x1 = np.sin(4 \* np.pi \* t)

x2 = np.sin(4 \* np.pi \* t)

a = 5

y1 = a\*x2

axs.set\_title(" Amplitude Scaling of Signals")

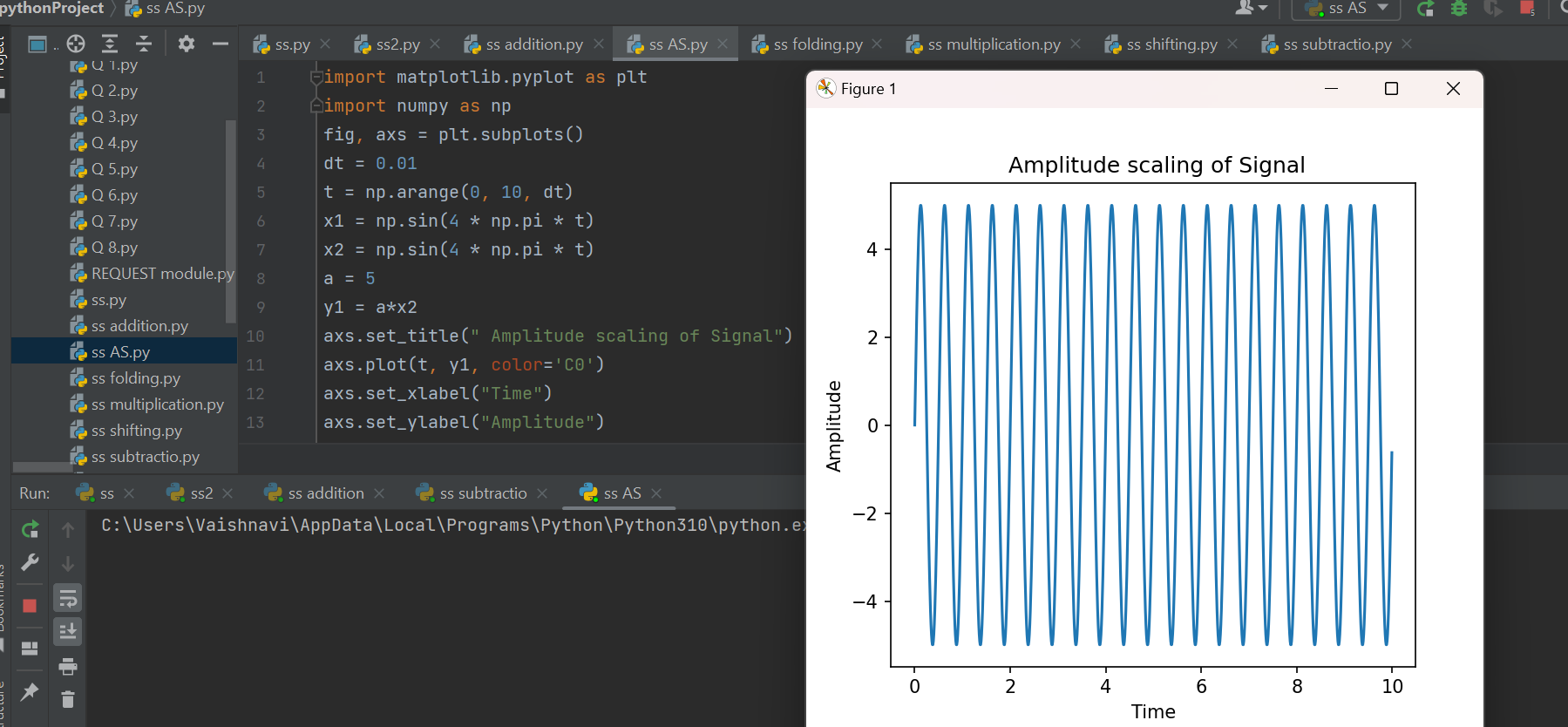
axs.plot(t, y1, color='C0')

axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

plt.show()

OUTPUT –



CODE – FOLDING OF 2 SIGNALS

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x1 = np.sin(4 \* np.pi \* t)

x2 = np.sin(4 \* np.pi \* t)

y1 = -x1;

axs.set\_title(" Folded Signal")

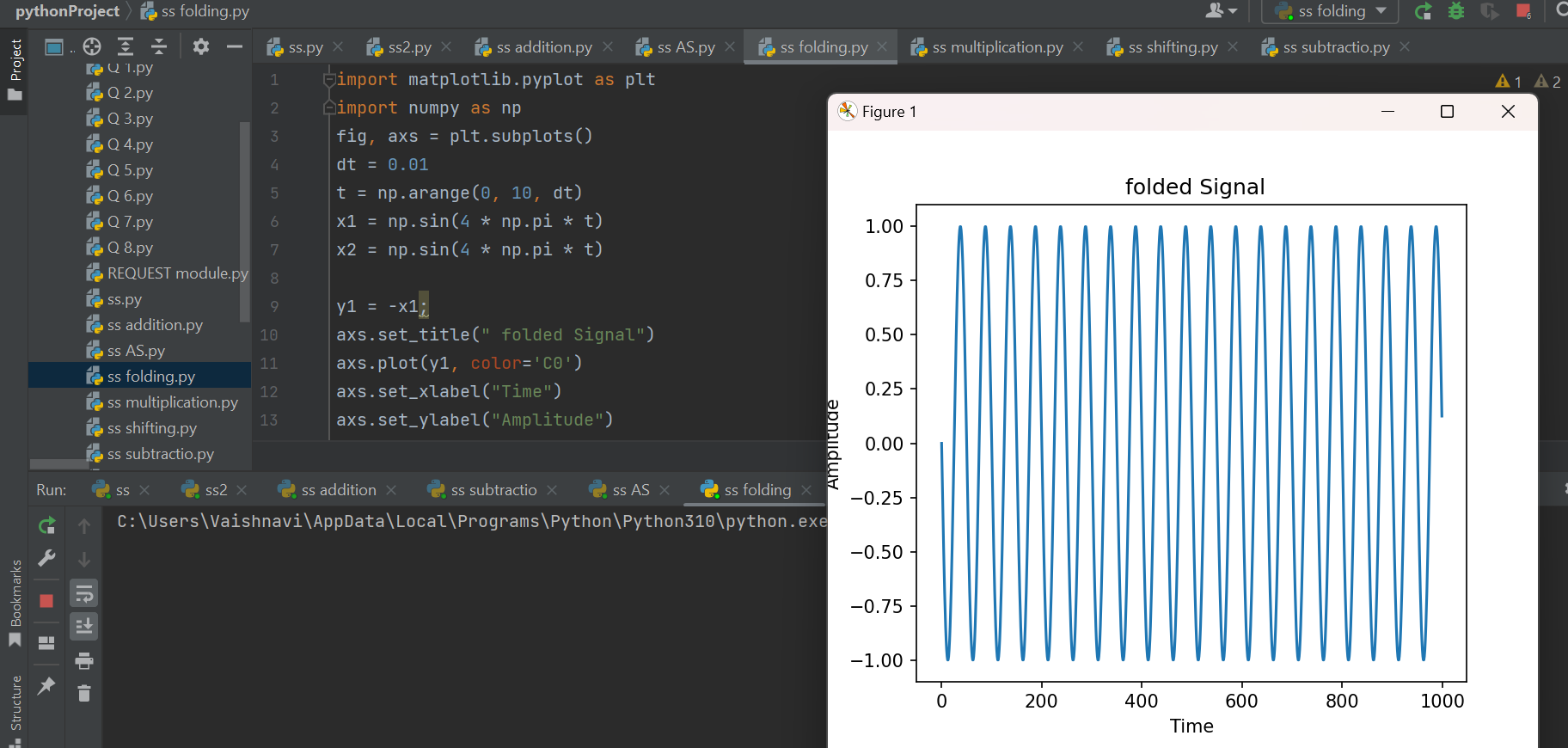
axs.plot(y1, color='C0')

axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

plt.show()

OUTPUT –



CODE – SHIFTING OF 2 SIGNALS

import matplotlib.pyplot as plt

import numpy as np

fig, axs = plt.subplots()

dt = 0.01

t = np.arange(0, 10, dt)

x1 = np.sin(4 \* np.pi \* t)

y1 = x1\*(t-3);

y2 = x1\*(t+4);

axs.set\_title("Time shifting of Signals")

axs.plot(y1,y2, color='C0')

axs.set\_xlabel("Time")

axs.set\_ylabel("Amplitude")

plt.show()

OUTPUT –

