

```
student_name = "Hoang Long Tran" # fill your name
student_id = "s223128143" # fill your student ID
print("Student name: " + student_name)
print("Student ID: " + student_id)
```

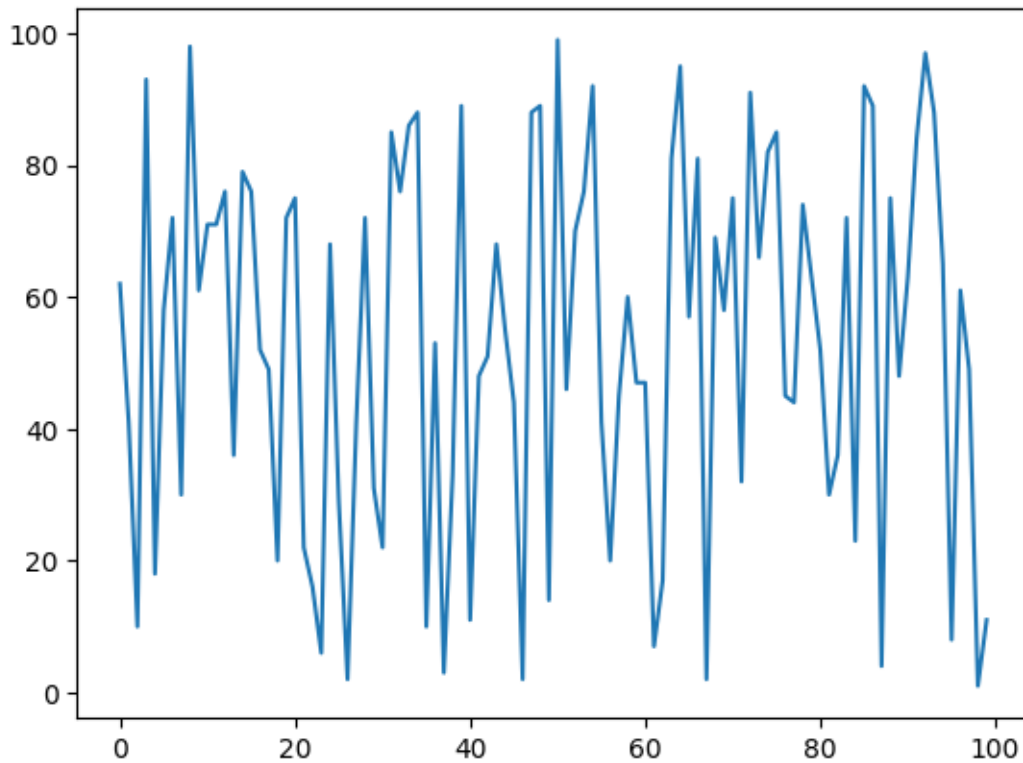
Student name: Hoang Long Tran  
Student ID: s223128143

```
import random
import matplotlib.pyplot as plt

n_values = 100
y_values = []

# Create data (y_values) randomly between 1 and 100.
for i in range(n_values):
    y_values.append(random.randint(1, 100))

x_values = range(n_values) # X is sequence of values 0-99
plt.plot(x_values, y_values)
plt.show()
```

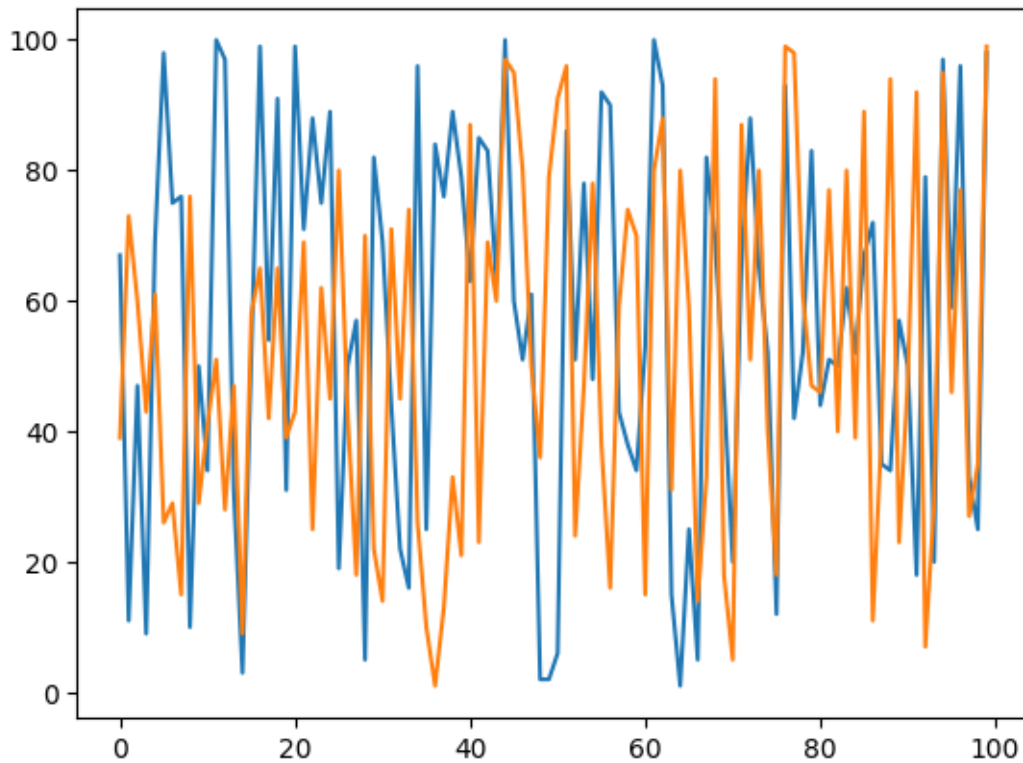


```
# Plot 2 variables
#

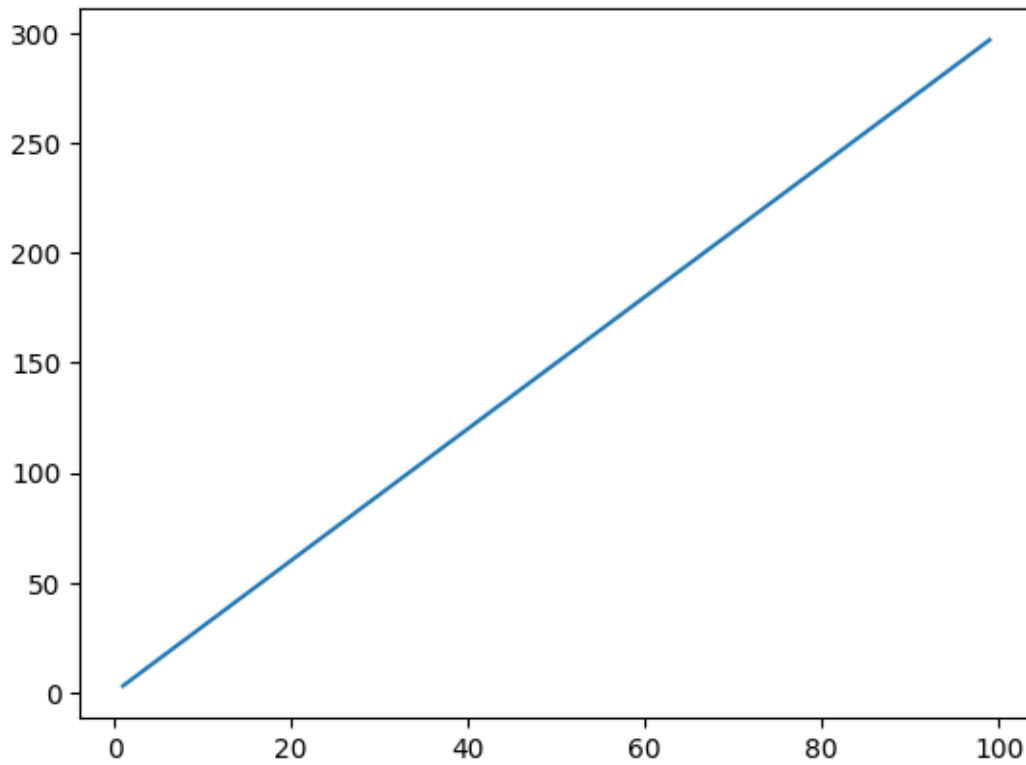
n_values = 100
y_values_1 = []
y_values_2 = []

# Create data (y_values) randomly between 1 and 100.
for i in range(n_values):
    y_values_1.append(random.randint(1, 100))
    y_values_2.append(random.randint(1, 100))

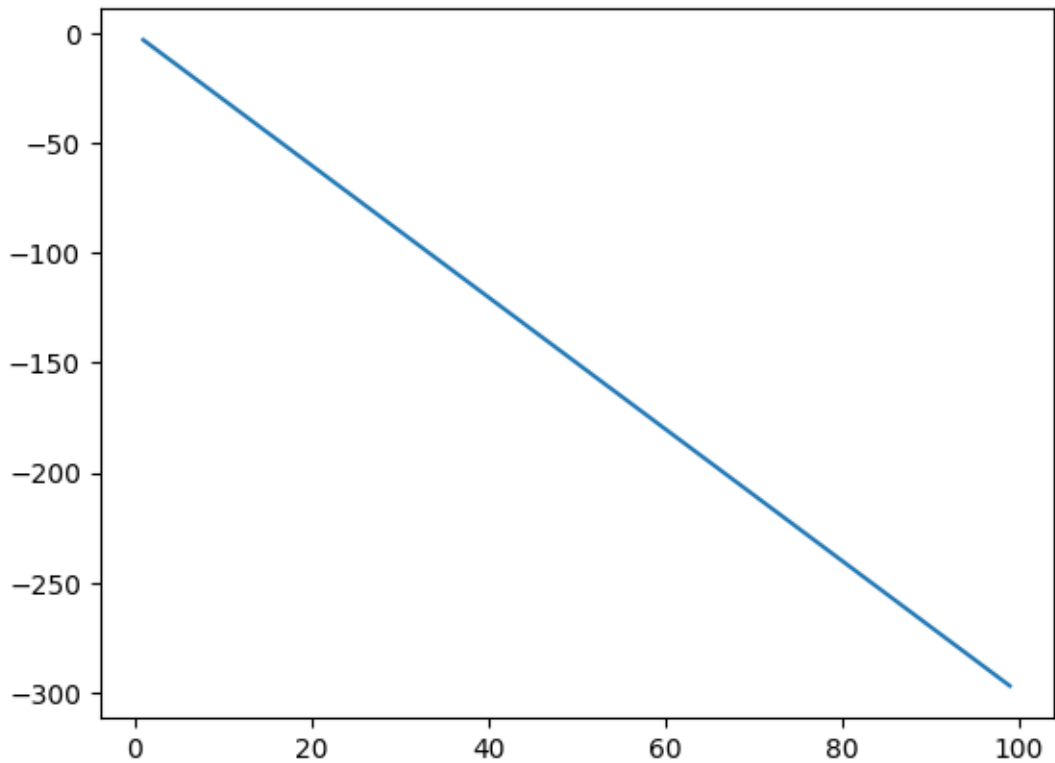
x_values = range(n_values) # X is sequence of values 0-99
plt.plot(x_values, y_values_1)
plt.plot(x_values, y_values_2) # call plot again draws in the same graph.
plt.show()
```



```
#  
# Activity 1: Create data so that the plot draws an  
# ascending line (y_values increase at any rate).  
#  
  
x_values = range(1,100)  
y_values = [x*3 for x in x_values]  
  
plt.plot(x_values, y_values)  
plt.show()
```



```
#  
# Activity 2: Create data so that the plot draws a  
# descending line (y_values decrease at any rate).  
#  
  
x_values = range(1,100)  
y_values = [x*(-3) for x in x_values]  
  
plt.plot(x_values, y_values)  
plt.show()
```



```
#
# Activity 3: Create data so that the plot draws a
# wave. You can consider using Python's math library, which has
# a sin function (detail https://www.w3schools.com/python/ref\_math\_sin.asp).
#

import numpy as np

x_values = np.linspace(start=0, stop=10 * np.pi, num=1000) # num is the number of samples to
y_values = np.cos(x_values)

plt.plot(x_values, y_values)
plt.title('Cosine Wave Plot')
plt.show()
```

