Okanda, Ryu T.

CS3C

Exercise 8

1. Python program find difference between each number in the array and the average of all numbers.

def diff\_avg(arr):

avg = sum(arr) / len(arr)

return [abs(num - avg) for num in arr]

arr = [5, 6, 7, 8, 9]

result1 = diff\_avg(arr)

print("1. Difference Between Each Number and Average:", result1)

print()

2. Python program to convert a string in an array.

def str\_to\_array(s):

return list(s)

s = "helloworld"

result2 = str\_to\_array(s)

print("2. Convert String to Array:", result2)

print()

# 3. Python program to split an array in two and store even numbers in one array and odd numbers in the other.

def split\_array(arr):

evens = [x for x in arr if x % 2 == 0]

odds = [x for x in arr if x % 2 != 0]

return evens, odds

arr = [11, 22, 33, 44, 55]

even\_numbers, odd\_numbers = split\_array(arr)

print("3. Split Array into Even and Odd:")

print("Even numbers:", even\_numbers)

print("Odd numbers:", odd\_numbers)

print()

4. Python program to perform insertion sort on an array.

def insertion\_sort(arr):

for i in range(1, len(arr)):

j = i - 1

nxt\_element = arr[i]

while (arr[j] > nxt\_element) and (j >= 0):

arr[j + 1] = arr[j]

j -= 1

arr[j + 1] = nxt\_element

return arr

arr = [1, 2, 3, 4, 5, 6, 7, 8, 9]

result4 = insertion\_sort(arr)

print("4. Insertion Sort on an Array:", result4)