**Assignment 1**

**CYBR 505 Computer Science Foundations for Cybersecurity**

**Sep 10, 2024**

'''

**1. List Manipulation:**

'''

# Create a list of numbers from 1 to 10.

create\_list = [1,2,3,4,5,6,7,8,9,10]

print("Original:", create\_list)

#Append the number 11 to the list.

create\_list.append(11)

#Insert the number 0 at the beginning of the list.

create\_list.insert(0,0)

# Remove the number 5 from the list.

create\_list.remove(5)

#Sort the list in descending order.

#default is reverse=false

create\_list.sort(reverse=True)

#Print the final list.

print("Descending:", create\_list)

print('\* \* '\*20)

'''

**2. Range and Loops:**

'''

even\_num=[]

#between 1 and 20, inclusive

for i in range(21):

#Use an if statement

if i %2 ==0:

even\_num.append(i)

#print the even numbers

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

print('\* \* '\*20)

'''

**3. While Loop with Condition:**

'''

#Initialize variables

number = 1

sum\_track = 0

#using while loop

while sum\_track + number <= 500:

#sum\_track = sum\_track + number

sum\_track += number

number += 1

#print the sum

print("The sum of numbers from 1 to 100 that does not exceed 500 is: ",sum\_track)

print('\* \* '\*20)

'''

**4. Nested Loops and Matrix Printing:**

'''

# Create a 3x3 matrix (a list of lists) containing integers from 1 to 9

total\_sum = 0

matrix = [

[1,2,3],

[4,5,6],

[7,8,9]

]

# printing matrix directly

print(matrix)

# nested for loop

# traversing the list

for row in matrix:

for element in row:

print(element, end=' ') #seperate by space

# print new line after each row

print()

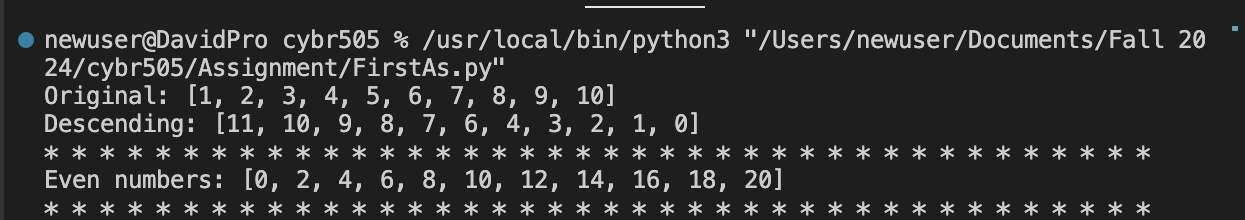
for row in matrix:

for element in row:

total\_sum += element

print("Total sum is: ", total\_sum)

print('\* \* '\*20)

Output:  


A screen shot of a computer

Description automatically generated