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CPSC-242-A

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Homework 7

**QUESTION A**

def func1(mlist):

x = len(mlist) **1**

i = 0 **1**

while i < x: n

j = 0 **1\*n**

while j < x/2: (Divide loop number by 2), if x = 10, loop runs 5 times

mlist[(i + j)%x] = mlist[(i\*5)%x] + mlist[(j\*3)%x] **1\*n\*n**

j += 1 **1\*n\*n**

i +=1 1\***n**

print(mlist)

T(n) = (2n2 / 2) + 2n + 2

**Simplified T(n)**  = n2 + 2n + 2

O(n2) – quadratic asymptotic upper bound

Chart, line chart

Description automatically generated

**QUESTION B**

import random

def func2(n):

a = [] **1**

for j in range(n\*n):

a += [random.randint(0, n)] 1 \* **n2**

print(a)

i = 0 **1**

sum = 0 **1**

while i < a[2\*n]):

sum += a[i] **1 \* 2n**

i += 1 **1 \* 2n**

print(sum)

**T(n) = n2 + 4n + 3**

O(n2) – quadratic asymptotic upper bound

Chart, line chart

Description automatically generated