This assignment relates to finding Time Complexity of snippets of C++ like code.

In each of the questions, do the following

1. Find the **operations**/**cost** and **frequency** of each line of code
2. Develop the equation T(n)
3. Asymptotic Complexity O(g(n))

Sample Solution

Q: Operations/Cost Freq.

for (int i=1; i<=n; ++i) c1 n+1

   display (i)    c2 n

1. T(n) = c1(n+1) + c2(n) = (c1+c2) (n) + c1 = c(n) + c1
2. T(n) = O(n)

Do all the following questions as shown above in the Sample Solution.

1. Operations/Cost Freq.

for (int i=1; i<=n; ++i)

   display (i)

for (int j=1; j<=n; ++j)

   display (j)

1. Operations/Cost Freq.

for (int i=1; i<=n; i=i+2)

    display (i)

for (int j=1; j<=n; j=j+2)

   display (j)

1. Operations/Cost Freq.

for (int i=1; i<=n; i=i\*2)

   display (i)

for (int j=1; j<=n; j=j\*2)

   display (j)

1. Operations/Cost Freq.

for (int i=1; i<=n; ++i)

  for (int j=1; j<=n; j=j\*2)

  for (int k=1; k<=20; k=k\*2)

    display (j)

1. Operations/Cost Freq.

for (int i=1; i<=n; i=i+2)

 for (int j=1; j<=n; j=j+2)

    display (j)

1. Operations/Cost Freq.

for (int i=1; i<=n; i=i+2)

 for (int j=1; j<=n; j=j+2)

 for (int k=1; k<=n; k=k+2)

display (j)

1. Operations/Cost Freq.

for (int i=1; i<=n; i=i+2)

 for (int j=1; j<=n; j=j+2)

 for (int k=1; k<=50; k=k+2)

display (j)

1. Operations/Cost Freq.

for (int i=1; i<=n; i=i+2)

 for (int j=1; j<=2\*i; j=j+2)

display (j)