Lets Upgrade

Assignment-1

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Questions:-

Question 1

What is the time, space complexity of following code:

int a = 0, b = 0;

for (i = 0; i < N; i++) {

a = a + 1;

}

for (j = 0; j < M; j++) {

b = b + j;

}

Question 2

What does it mean when we say that an algorithm X is asymptotically more efficient than Y?

a)X will be a better choice for all inputs

b)X will be a better choice for all inputs except possibly small inputs

c)X will be a better choice for all inputs except possibly large inputs

d)Y will be a better choice for small inputs

Solutions:-

Sol.1 Since the program contain 2 loops executing for the range of 0-N and 0-M respectively,

the Time Complexity for the program will be:  
O(N+M),

Space Complexity will be:-

O(1).

Sol 2. b) X will be a better choice for inputs except possibly small inputs