Lets upgrade

Data structures & Algorithm.
Assignment No:-1

Q.1] what is time, space complexity of
given code.

```
int a=0, b=0
for (i=0; i<N; i++){
a=a+1;
}

for (j=0; j<M; j++)
{
b=b+j;
}
```

→ 1) Here the time complexity will be,

$$O(N+M) \quad\quad\quad \cdots (I)$$

In the given code we don't know if
'N' is greater than 'M' or vice versa.
∴ The time complexity will be as given
in eqn (I)

To be precise the time complexity will
be $O(max(N, M))$ $\quad\quad \cdots (II)$

2) In case of space complexity as no
extra space is utilized, the space
complexity will be constant which is
$O(1)$

Q.2] What does it mean when we say that an algorithm X is asymptotically more efficient than Y.

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