Q3

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The problem can be solved by solving the following subproblem.

Subproblem: for every lily pad that the frog could reach(the number of lily pad I is divisible by 4 or 5), find the largest number of flies that the frog can catch.

* For Q3 Assume that all the arrays are started from index 1

* For Q3 For every lily pad, Store the number of files n of lily that pad i to array A, as array[i] = n;

Recursion function:

maxNum(i) = max{maxNum(i+4) + A[i], maxNum(i+5) + A[i] },  i >= 1

BaseCase: maxNum(i) = 0 if i > n;

*The initial value i will be 1;

The TimeComplexity is $O(n^2)$, because there are $(n/4 + n/5 - n/20)$ subproblems,and each of these subproblems are calling 2 subproblems which makes the overall time complexity $(n/4 + n/5 - n/20)^2$.