

Jin-Ao Olson Zhang

Z5211414

Question3:

Suppose  $\text{Flies}(i)$  means the maximum flies frog can eat from first lily pad to the  $i$ th lily pad.

Base case is

$\text{Flies}(1) = f_1$

$\text{Flies}(2) = 0$

$\text{Flies}(3) = 0$

$\text{Flies}(4) = f_1 + f_4$

Since if  $i > 5$   $F(i)$  is the destination from lily pad either  $i-3$  or  $i-4$

So Recursively  $\text{Flies}(i)$  can be represent by

$\text{Flies}(i) = \text{Max}(\text{Flies}(i-3) + f_i, \text{Flies}(i-4) + f_i)$

In the worst case

It take  $O(n)$  times