

1. **Brute – Force Algorithm:** - It was the first method tried to solve the problem in which made a loop to try different number placements and running it in code to get the biggest result possible.

**Result & Issues:** - The problem of using brute force is that it is not efficient, takes too much space & time which increases its complexity, The scalability is also an issue and can't get the best solution with this and may end up with infinite looping if coded incorrectly.

2. **Pen-Paper approach:** - Tried to solve it on pen paper and then get the most optimal solution and did used hit & trial approach to reach the most optimal solution by using logics and changing the inputs to get the most optimal solution possible.

**Result & Issues:** - The problem of using this approach is that it is not scalable, have chances of human error and not efficient as need a person to think and try it and then run the code to check, also it can't guarantee the best solution as it is only possible upto a limited number of digits.

3. **Greedy – approach:** - The logic used in this is to get the greatest possible value from the growth rate of bamboo array to cut and let others grow and iterate this process to get the largest possible value from array and regrow the bamboo, this will give the best possible solution possible.

**Result & Issues:** - It was indeed the most optimal solution found but the issue faced are that in the start it is considered to be infinity which might rig the logic of array and cause error, also need to make logic more robust as sometimes due to the same value in two indexes it selects the first one instead of most optimal one which can be improved. Also set it such that when pattern starts repeating then break the array and that will be most optimal solution, but it causes the array to go to near infinite loop.

**Conclusion:** - Need to find the most optimal logical solution to solve it and the closest method to find optimal and efficient solution is through greedy approach as used in the code base which is shared in the same submission folder with demo.py file consisting of that logic.