

Week 9 Lab: Fibonacci Design

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Pseudocode:

```
FUNCTION printPrimes(array,num)
    SET string = "\nPrime numbers less than "+str(num)+" :\n    "
    FOR i in array:
        IF not i == 0
            string += str(i)+"  "
    PUT string

GET n from USER

SET arr <- list(range(1,n))

FOR i <- 2 ... floor(sqrt(n))
    FOR a <- i ... arr.length
        IF arr[a] > i and arr[a] % i == 0:
            SET arr[a] <- 0

printPrimes(arr,n)
```

Algorithm Efficiency:

I am kind of guessing that the algorithm efficiency is $O(n \log n)$, because we have one loop that goes through about \sqrt{n} times (the lab instructions said that this is approximately $O(\log n)$) and then inside the loop we have another loop that goes through a max of 2 less than the length (this would be about $O(n)$).

[This](#) is a chart that shows the number inputted and the count of iterations. It also has a column with an estimated count number based on the value of n .

Trace Table:

You can see the live preview of the lab trace [here](#).