Goldbach's Conjecture is one of the oldest and best-known unsolved problems in number theory and all of mathematics. It states that every even integer greater than 2 can be expressed as the sum of two primes. The conjecture has been shown to hold for all integers less than 4×10^{18}, but remains unproven despite considerable effort.

Test Goldbach's Conjecture on for all integers less than one hundred. For each integer, print out a single line showing how two primes can sum to the integer. For example:

$$2 = 1 + 1$$
$$4 = 2 + 2$$
$$6 = 3 + 3$$
$$8 = 3 + 5$$
...etc.

Record a three minute video in which you run the code. Then, present your code. Specifically, answer the following questions:

- Highlight the main loop in which you iterate over the integers 2 through 100.
- Explain the (nested?) loop in which you find two primes to sum to the integer.
- Show the discovery of prime numbers. How are you optimizing this?

Submission: Submit a single .py file containing all the code to the D2L. Do not zip or archive the file. Your code must include comments at the top including your name, date, video link, and the honor statement, "I have not given or received any unauthorized assistance on this assignment." Each function must include a docstring and be commented appropriately.

$$2 = 1+1$$
$$4 = 2+2$$
$$6 = 3+3$$
$$8 = 3+5$$
$$10 = 5+5$$
$$12 = 7+5$$
$$14 = 7+7$$
$$16 = 11+5$$
$$18 = 13+5$$
$$20 = 13+7$$
$$22 = 11+11$$