Developer's Documentation:
Hello Fellow developer!
A detailed developer log is kept in the repo along with our progress at each step and also any decision we made. You may find it here: Link to the meeting.md file

An overall explanation of this project:
This is an interactive learning tool to use for learning cryptosystems. This could be used to aid students taking MATH458 at the University of Oregon, especially in the midst of the pandemic. This web application is unique in that it uses interactive learning tools and communicates with the user at each step. In addition, the user must input the correct number for one step to be able to go to the next. This will be extremely helpful in aiding students with homework problems in addition to helping them understand the cryptosystems and prepare for exams.
We have separated this project into 3 modules:

1. Backend -- Python
    a. The backend is responsible for creating and running the cryptosystems. Eac cryptosystem will return an array of the corresponding numbers.
        i. These lists will be different in case of an error. More info can be found in the comments of each cryptosystem.
    b. Frontend -- Input page and method portion
        i. This section uses HTML, Javascript, and CSS for the page design. In addition, it uses flask to call the backend module.
    c. Frontend -- Interactive portion
        i. This section uses Javascript and jquery calls to create an interactive module that interacts with the user.

TESTING:
Our testing had 4 stages:

1. Backend testing
    a. We tested the backend section by running the code on different large and small numbers and made sure all outputs were correct. We used edge cases and normal ones to make sure the backend is functioning correctly and without any errors.
2. Frontend -- input and method
    a. How did Xuehai test
3. Frontend -- Interactive portion
    a. How did John test
4. Outside testing
    a. We had friends who are not computer scientists and have no knowledge of cryptosystems test our product and give us some feedback about the accessibility, the instructions, and how to make out product better.

Future Extensions to this project:

- Adding more cryptosystems
    - We have provided a cryptography textbook you could use.

    - You would have to make the corresponding changes in Xuehai's code to add them to the main page, John's code to add the javascript and jquery calls, in addition to coding the new crypto system.
- Creating an app for iOS or Android.
- Possibly creating a video or voice explanation option that would walk them through the method and example.

As for a general mapping of our repo:

- Info directory:
    - In this folder you will find direction for the front end developers, along with examples and methods used for each cryptosystem.
- Config directory:
    - This is the config file used by users to download the required libraries.
    - Also used in heroku to set up the environment
- Csys directory:
    - Used for md file to use for our user documentation
- Images:
    - Used for front end developers, and also user documentation
- mathCrypto.pdf
    - This is the cryptography textbook used as a guide and reference. We recommend you read this book and implement some cryptosystems you see fit!
- Meeting.md
    - Detailed developers log which includes our progress for each week in addition to any obstacles we faced.
- .py files:
    - These are the cryptosystems we designed. They are commented in detail and have a very thorough explanation of each output in addition to the code.
- Xuehai's section
- John's section