

1. Prime.java

This class just tests if a number is prime or not

Method:

- `public static boolean prime(long num);`

This method will check if a number is prime or not & is used to pass into the TwinPrimes.java class when calculating for twin primes. It will return a true or false given a number.

2. TwinPrimes.java

This class just goes through twin primes in order to prepare for the hexagon primes.

Method:

- `public ArrayList<Integer> twinprime(int N);`

This method will return an integer array of numbers that are between twin primes. The method takes a length to search through to get the array. Twin primes will be checked for in the method, but only the number in between the twin prime will be appended to the array. This will create an array that is good for determining hexagon crosses. It will have all the possibilities of numbers that could be in a hexagon cross.

3. FileIO.java

This class is used for reading in twin primes and outputting them to hexagon primes in results.txt and the console.

Method:

- `public void produceOutput(int N);`

This method will open a file results.txt and first use the array returned from the twinprime method in TwinPrimes.java by giving in a set length to search through which is bigger if N is bigger. Then that array will be used to find pairs of Hexagon crosses in the array by checking if a number in the array is there with it's doubled version. This is then printed to the console and stored in the results.txt file.

4. Driver.java

This is the main and is used to control the program and utilizes all methods.

Methods:

- `public void start(Stage primaryStage);`

This method helps build the window for the scene builder which is the stage

- `public static void main(String[] args);`

This is what runs the scene builder and the program.

5. MController.java

This creates the GUI interface and also runs it. Scene Builder created the .FXML for this.

- `public void enterClick(ActionEvent event);`

This method recognizes the user clicked the Enter button of the GUI and starts producing the results.txt file by calling the produceOutput method with the N the user entered into the text field of the GUI. This will create a file and make the hexagon primes print to the console. Next, this will read in the file it creates and then put it into the list view. Bigger N's tend to crash the program 0-100 work well with it.

- `public void resetClick(ActionEvent event);`

This method will just reset the list view.

- `public void initialize(URL arg0, ResourceBundle arg1);`

This method is there for the list view just because it is needed for the class.