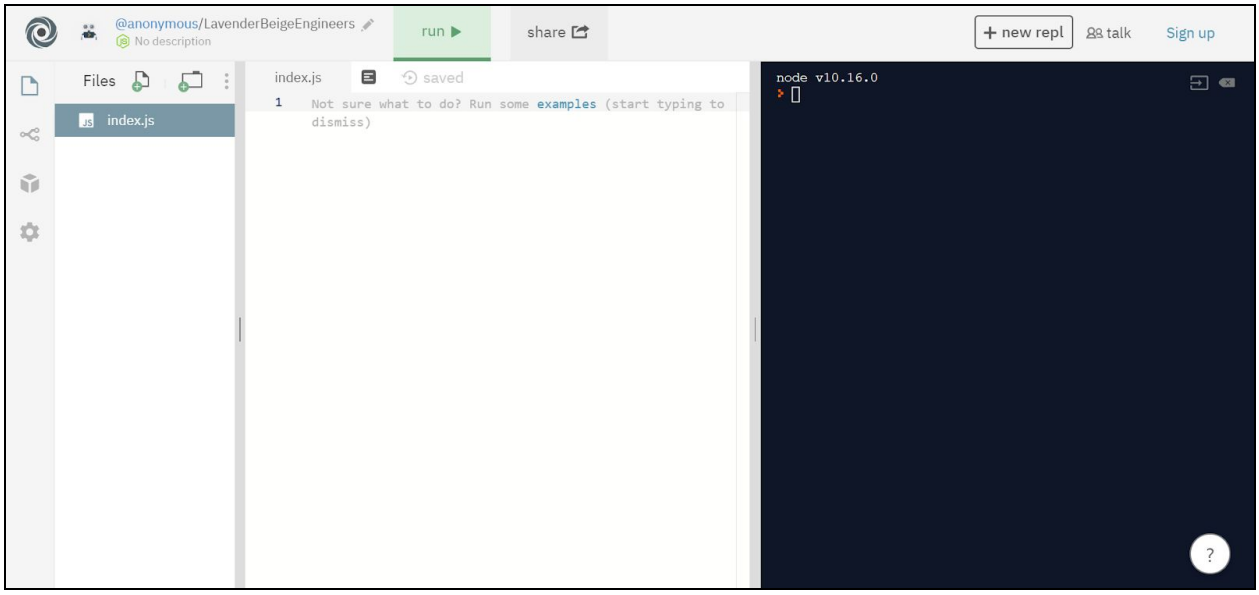
Getting Repl Set Up

1. Go to https://repl.it/
2. In the right hand corner, push the blue button that says new repl.
3. Type JavaScript where it says Language. Press enter or click on the JavaScript button.
4. Press the Create Repl button.
5. You should be redirected to a page that looks like this:



6. The white page that says index.js where you will write your code. The black screen is where you see the output of your code. To run your code, press the green run button.

Create a Calculator

Use the JavaScript basics to create a simple calculator.
Your calculator should:

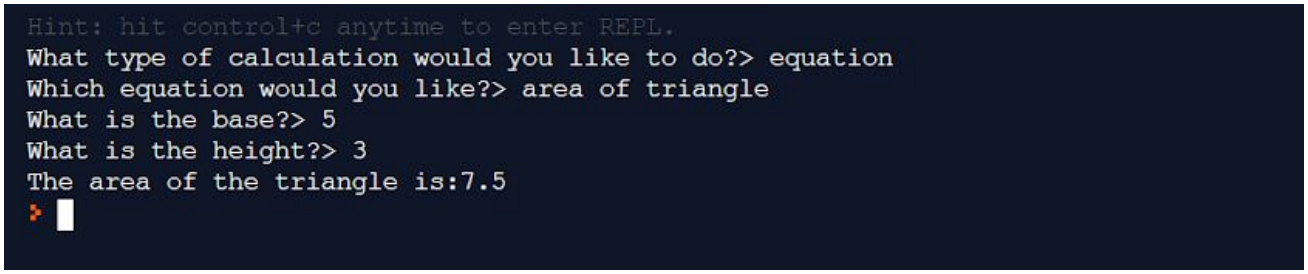
- Ask the user what if they want to do addition, subtraction, multiplication, or division.
- Take in two numbers that it will use for the calculation.
- Complete the calculation and print the answer to the screen.

Possible output:

```
Hint: hit control+c anytime to enter REPL.
What type of calculation would you like to do?> +
What number would you like? > 3
What second number would you like? > 5
Your answer:8
>
```

Add More Features to your Calculator

Now, you are going to add more to your calculator. In math, there are many equations that we have to use. You are going to program these equations into the calculator.
Here is some example output for finding the area of a triangle:



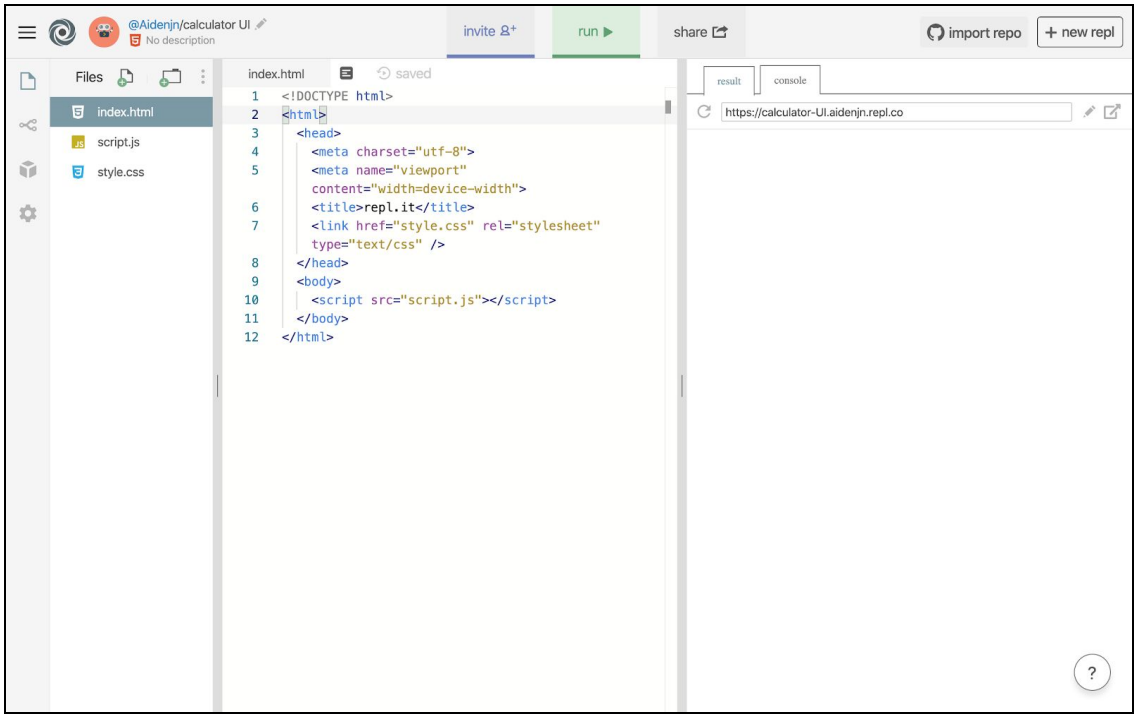
You should pick two or more equations to add to your calculator:

- **Area of a Triangle:**
  *1/2 * base * height*
- **Area of a Circle:**
  *3.14 * r^2*
- **Speed Formula:**
  Distance/Time
- **Slope Formula:**
  $y_2 - y_1 \ / \ x_2 - x_1$
- **Distance Formula:**
  $sqrt((x_2 - x_1)^2 + (y_2 - y_1)^2$
- **Exponential:**
  x^y

Setting Up a Web Page on Repl

Now that you have a calculator with lots of functionality, you are going to build a user interface so that your calculator will be easier to use. You will start by setting up a simple web page.

1. In the right hand corner, push the blue button that says new repl.
2. Type “HTML, CSS, JS” where it says Language. Press enter.
3. Press the Create Repl button.
4. You should be redirected to a page that looks like this:



5. The white page that says index.html where your HTML code will go. This code determines what content will be on your page. The white screen to the right is where your webpage will be shown.
6. Below index.html under Files is script.js, this is where your Javascript code will go.
7. Below script.js is style.css, which is where your CSS code will go. This code will determine how your page content is styled.

Add a UI to Your Calculator

The next page of this handout is a list of resources you can use to create your very own webpage. For this webpage, try to create a user interface for a calculator program. This can include text boxes for number inputs and buttons for mathematical operations (addition, subtraction, etc…). For now, just try to set up your page using the traditional three languages for the web: HTML for structure, CSS for styling, and Javascript for program logic.

Learning Resources

HTML:

- W3Schools Tutorial: https://www.w3schools.com/html/default.asp
- MDN Documentation: https://docs.google.com/document/d/1RB_zhgQNrXyWiLBS7YQHMM3pTckI0lssYjkq2D5Sag8/edit
- Dr. Hess's Lecture Notes: https://developer.mozilla.org/en-US/docs/Learn/HTML/Introduction_to_HTML

CSS:

- W3Schools Tutorial: https://www.w3schools.com/css/
- MDN Documentation: https://developer.mozilla.org/en-US/docs/Learn/CSS/First_steps
- Dr. Hess's Lecture Notes: https://docs.google.com/document/d/1DTpjDB2K4EF2sz4MwhPOYfC8CUhpZn9ykEVkwNZY8wM/edit

JavaScript:

- W3Schools Tutorial:
- https://www.w3schools.com/js/default.asp
- MDN Documentation: https://developer.mozilla.org/en-US/docs/Learn/JavaScript/First_steps
- Dr. Hess's Lecture Notes: https://docs.google.com/document/d/1C5fgsWQjTaPDOyqjecMZ2d554iOePCrDcZ5nzUykG_U/edit