

Introduction

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Our Project is a solution to a problem found on Project Euler (specifically problem #18) where given a network of random number ranging from 1 to 99, one should find the path with the largest sum from top to bottom. Ex.

```
  3
 7 4
2 4 6
8 5 9 3
```

This gives a Maximum Value of **23**.

However, instead of simply solving the problem for the triangle we provide, we allow you, the user, the ability to try and figure out the path for yourself by clicking on nodes starting at the top and working your way down. If you feel you will not get the correct path we do offer you the chance to see the solution or Try again!

Our Code

To code our project, we used JavaScript and html. We first tried solving the problem programmatically, and using a max function to help with deciding which route to take. However, that didn't get us to the correct answer.

Tips for guessing the correct path

As this is the highest possible value for the network it may be tempting to try a greedy approach and pick the highest element available for each node. This however may not be the solution and one should consider the values at the lower end of the tree and possibly sacrificing a larger value for a lesser one earlier on to get access to potentially larger values toward the bottom. Ex.

```
  75
 95 64
35 47 81
87 35 87 10
18 98 82 47 65
```

The path highlighted in red above gives a maximum sum of 390 however, the path below which utilizes a greedy approach only gives a value of **386**.

```
  75
 95 64
35 47 81
87 35 87 10
18 98 82 47 65
```

In conclusion, do not focus on the largest values at each stop in the path. Pay attention to large values farther down the triangle and which paths lead to these large values. Also, note patches of large values.