

Project Euler Solutions

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This document originally appeared as a blog post on my website. Find it at gautammanohar.com/euler.

1 Introduction

Welcome to the homepage of my [Project Euler](#) solutions. Once I solve the original problem, I also take on the modified version from [ProjectEuler+](#) on Hackerrank, where the problems usually have multiple, harder test cases. The time limits are much stricter, and brute force is rarely an option.

2 Why do I publish my solutions?

To solve a Project Euler problem, you have to be clever with not only a good mathematical understanding but also an efficient use of algorithms. There are plenty of Project Euler *answers* online. I aim to explain my thought process in coming up with a solution and my use of data structures and algorithms; write fully commented Python code; and link to relevant sources where you can learn more, such as [Wolfram MathWorld](#), [Wikipedia](#), and [OEIS](#).

And, of course, maintaining this website helps me, too. Explaining your process to other people helps you understand it better.

2.1 But you shouldn't publish your solutions!

After you solve a problem, Project Euler shows the following text:

We hope that you enjoyed solving this problem. Please do not deprive others of going through the same process by publishing your solution outside Project Euler. If you want to share your insights, then please go to [thread] in the discussion forum.

I don't quite agree with this. I learned the vast majority of what I know from other people. We all stand on the shoulders of giants. If someone is on my site looking at my solutions, it means they realized they needed some help with the problem, and so they decided to ask the greatest source of information we have today: the Internet. At the end of the day, it doesn't matter whether the answer is 27189 or 27819; it's the process that counts, and that's what I try to share. That's why you'll find algorithms and code on my website, but never a big flashing box with the answer in it.