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DEPARTMENT OF COMPUTER ENGINEERING
SUBJECT: Cloud and Internet Technology

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Experiment 8

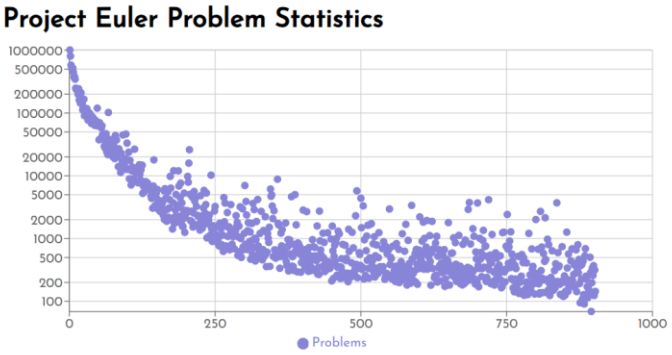
AIM :

Project Euler (https://projecteuler.net) is a collection of mathematical computing problems. Each problem is listed with an ID, a description/title, and the number of users that have solved the problem. Record the number of people who have solved each of the 700+ problems in the archive at https://projecteuler.net/archives. Plot the number of people who have solved each problem against the problem IDs, using a log scale for the y-axis. Display the scatter plot, then state the IDs of which problems have been solved most and least number of times. Display the table and scatter plot on a webpage.

Theory:

Web crawling, also known as web scraping, is an automated process used to systematically browse the internet and extract information from websites. A web crawler, or spider, starts with a set of seed URLs, downloads their HTML content, and parses the pages to gather data and discover new links to follow. This process continues iteratively, enabling the crawler to collect vast amounts of data from various web pages. Ethical web crawling requires adherence to the `robots.txt` file, which outlines the rules for crawling a site, ensuring that the crawler respects the site's preferences regarding data extraction. Web crawling is commonly used for purposes such as search engine indexing, market research, and data analysis.

OUTPUT:



Most Solved Problem
Problem ID: 1
Title: Multiples of 3 or 5
Number of Solvers: 1010874

Least Solved Problem
Problem ID: 895
Title: Gold & Silver Coin Game II
Number of Solvers: 69

All Problems Data

Problem ID	Title	Solvers Count
1	Multiples of 3 or 5	1010874
2	Even Fibonacci Numbers	805639
3	Largest Prime Factor	580298
4	Largest Palindrome Product	513030
5	Smallest Multiple	515655

	6	Sum Square Difference	519126
	7	10001st Prime	444090
	8	Largest Product in a Series	372318
	9	Special Pythagorean Triplet	377393
	10	Summation of Primes	346452
	11	Largest Product in a Grid	248860
	12	Highly Divisible Triangular Number	235460
	13	Large Sum	240679
	14	Longest Collatz Sequence	241156
	15	Lattice Paths	199382
	16	Power Digit Sum	243380
	17	Number Letter Counts	161992
	18	Maximum Path Sum I	155122
	19	Counting Sundays	144016
	20	Factorial Digit Sum	210632
	21	Amicable Numbers	156408
	22	Names Scores	143727
	23	Non-Abundant Sums	112251
	24	Lexicographic Permutations	122956
	25	1000-digit Fibonacci Number	165907
	26	Reciprocal Cycles	90763
	27	Quadratic Primes	94231
	28	Number Spiral Diagonals	115441
	29	Distinct Powers	113287
	30	Digit Fifth Powers	117848
	31	Coin Sums	91926
	32	Pandigital Products	77120
	33	Digit Cancelling Fractions	77393
	34	Digit Factorials	101189
	35	Circular Primes	91109
	36	Double-base Palindromes	95276
	37	Truncatable Primes	79360
	38	Pandigital Multiples	68142
	39	Integer Right Triangles	78838
	40	Champernowne's Constant	86010
	41	Pandigital Prime	73645
	42	Coded Triangle Numbers	79944
	43	Sub-string Divisibility	64844
	44	Pentagon Numbers	63466
	45	Trianaular, Pentaaonal, and Hexaaonal	76277