The Code Whisperer's Quest

Alex, the Code Whisperer, lived in Techville, a city with 1.5 million lines of code running its infrastructure.

At age 10, Alex wrote their first program, which had 500 lines of code. By 15, Alex had written over 50,000 lines of code.

One day, Techville's mainframe, which processed 3 billion transactions daily, encountered a critical error.

The error affected 25% of the city's systems, causing 750 million transactions to fail.

Alex discovered that the issue was due to a miscalculation in an algorithm that handled 10,000 operations per second.

Alex's solution required optimizing the code, reducing the number of operations to 8,500 per second,

which saved the city $1.2 million in processing costs annually. The fix also reduced the error rate by 99.9%,

making the system 10 times more reliable.

The Mayor of Techville awarded Alex with a medal and a prize of $10,000. Alex invested the money into

learning advanced coding techniques, attending 5 coding bootcamps and completing 20 online courses.

Thanks to Alex, Techville's mainframe now handles 4 billion transactions daily with a 0.001% error

rate,

solidifying Alex's legacy as the greatest coder in the city's history.

Questions:

1. How many lines of code had Alex written by the age of 15?

2. What percentage of the city's systems were affected by the critical error?

3. How many operations per second did the optimized code handle?

4. How much money did the optimization save the city annually?

5. How many online courses did Alex complete after winning the prize?