


# The Day When a Software Glitch Cost \$460 Million: The Knight Capital Catastrophe

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A young girl with brown hair is looking off to the side with a concerned expression. In the background, a building is on fire, with bright orange flames and thick black smoke rising into the air. The scene is dimly lit, suggesting it might be nighttime or dusk.

In 2012, a leading financial firm, Knight Capital Group, faced a catastrophic software glitch, leading to a loss of \$460 million in just 45 minutes.

**IN JUST 45 MINUTES**

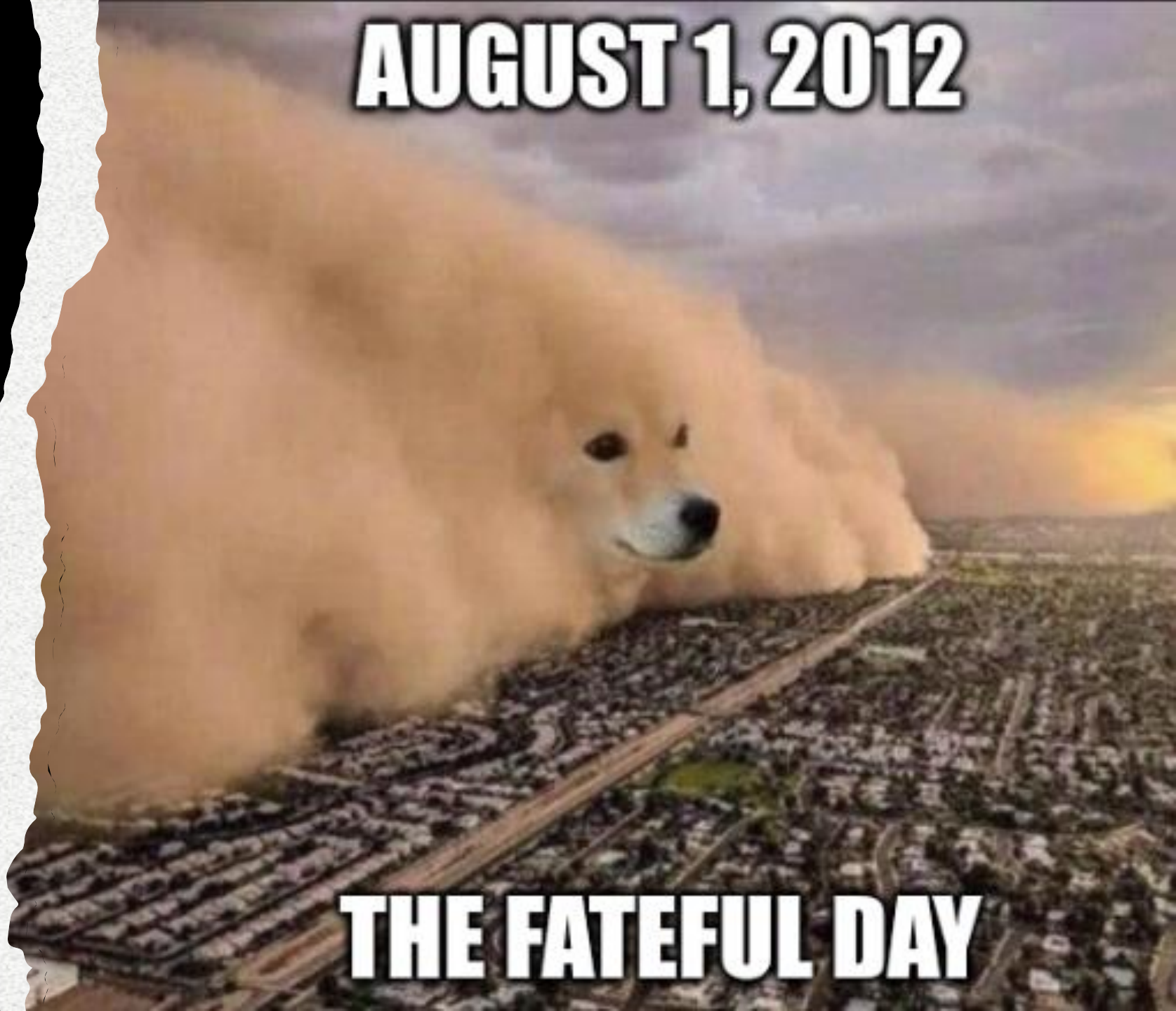


Knight Capital Group was a well-established financial services firm, known for its electronic trading platform. It executed a significant volume of trades daily on the New York Stock Exchange and NASDAQ.



On August 1, 2012, Knight Capital deployed a new software update to their trading system. This update was intended to enhance their platform's performance

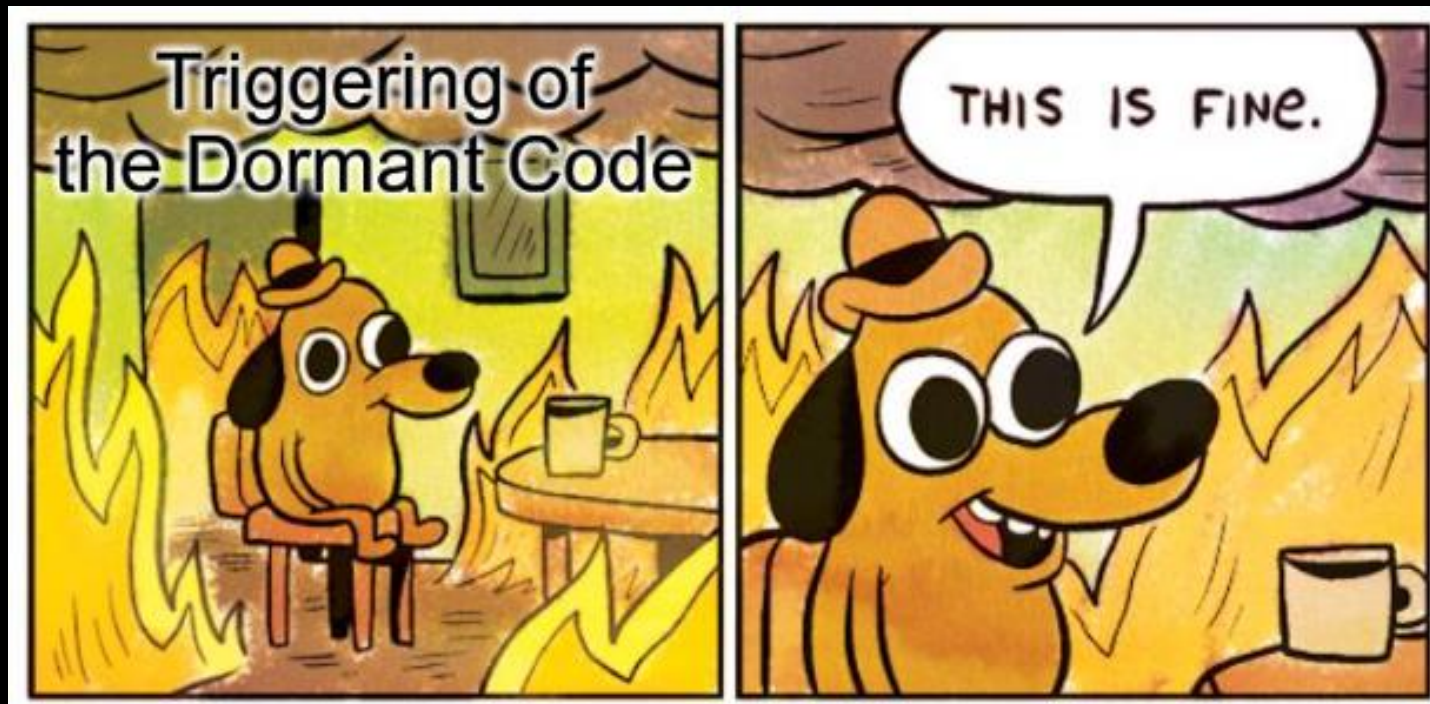
**AUGUST 1, 2012**



**THE FATEFUL DAY**

The software update inadvertently reactivated an old, unused feature of the system, known as 'Power Peg,' designed to move stock prices up or down.



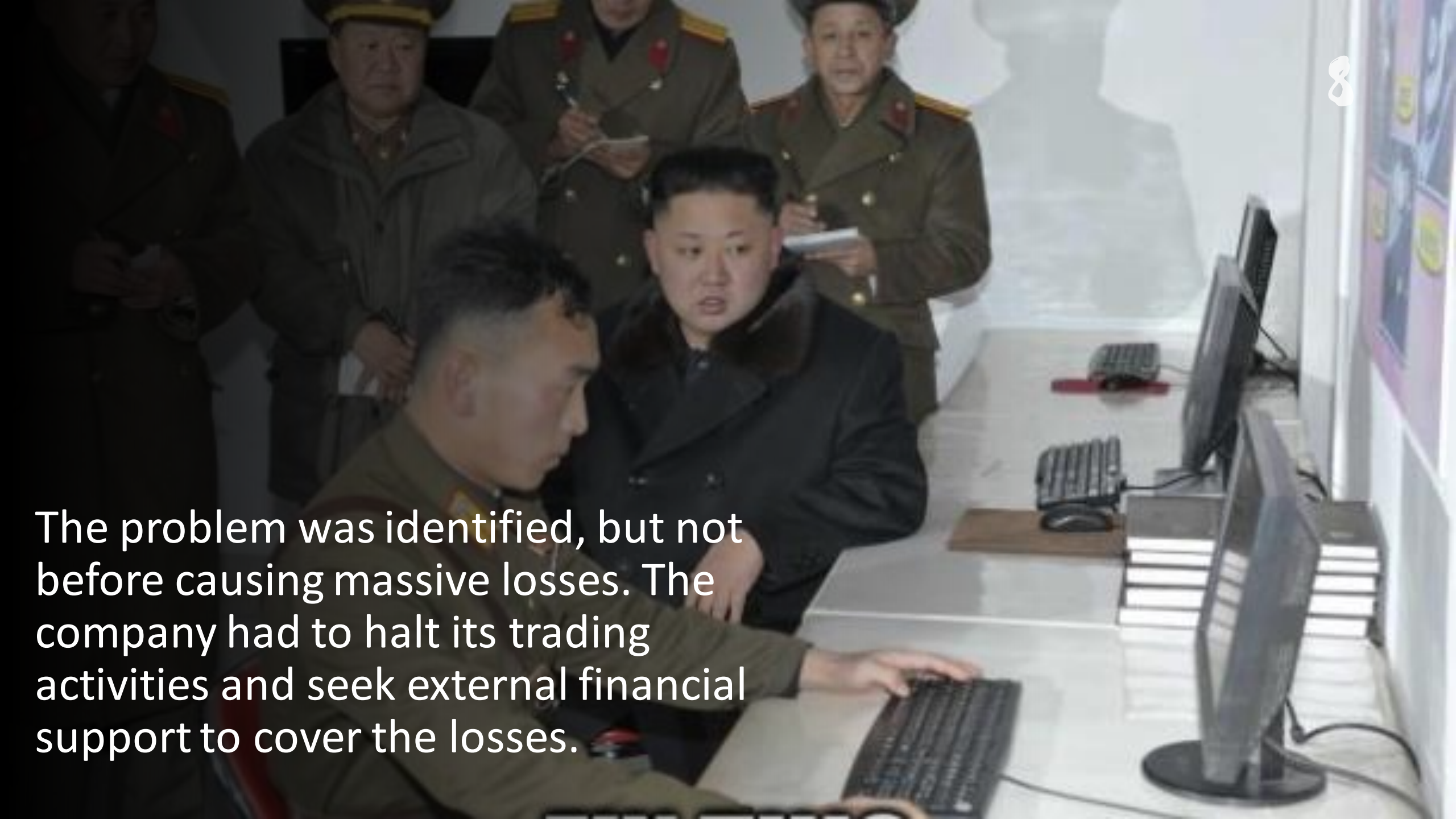


Due to the update, the dormant code went live, causing unanticipated orders to flood the market.

Within minutes, this triggered millions of unintended trades



The system executed unintended trades worth approximately \$7 billion, of which \$460 million was lost. The glitch affected Knight Capital's capital and market position significantly

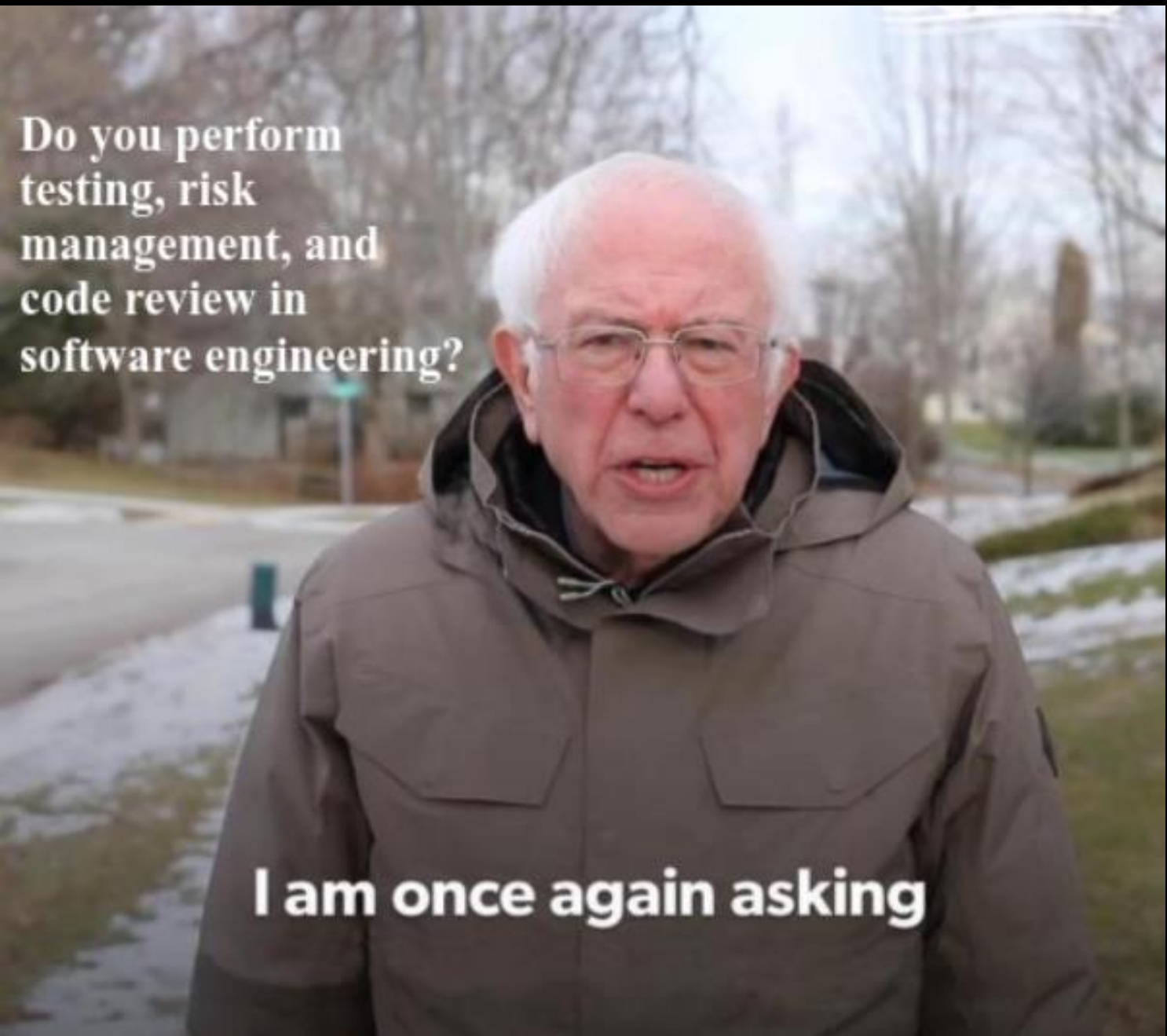
A photograph showing Kim Jong-un, leader of North Korea, seated at a computer workstation. He is wearing a dark, heavy coat. In front of him is a man in a military uniform, likely a high-ranking official, who is looking at the computer screen and has his hand on the keyboard. Behind them, several other men in military uniforms are standing and observing. The setting appears to be a control room or a computer lab, with multiple computer monitors and keyboards visible on the desk. The lighting is somewhat dim, and the overall atmosphere is serious.

The problem was identified, but not before causing massive losses. The company had to halt its trading activities and seek external financial support to cover the losses.



The incident led to a significant drop in Knight Capital's stock price, eroding investor confidence. It also raised broader concerns about automated trading systems' reliability





Do you perform  
testing, risk  
management, and  
code review in  
software engineering?

**I am once again asking**

Key lessons include the importance of rigorous testing of software updates, especially in high-stake environments, and thorough review processes to identify dormant code that could be mistakenly reactivated.



# *The Significance of Software Engineering in Financial Markets*



This incident highlights the critical role of software engineering in financial markets. A small software error had a multi-million-dollar impact, demonstrating the need for meticulous attention to detail in software development and deployment.

How do you make  
such amazing softwares?

I said "I took  
CS6.401 SE Course"

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# Thank YOU

Don't Worry we have SE Course For You!!!

- Shubham Kulkarni, SE TA Team, SERC