

# THE FIRST COMPUTER BUG



# WHAT IS BUG?











How does Bug affects?

- 1. Feeding Damage**
- 2. Transmission of Diseases**
- 3. Weakening of Plants**



## Computer Bug

**A computer bug refers to an error, flaw, glitch, or unintended problem in computer software or hardware that causes it to behave unexpectedly or produce incorrect results.**

# The First Computer Bug



1. The term "bug" in the context of computers originated in 1947 with Grace Hopper and the Mark II computer at Harvard University.
2. Grace Hopper, a computer scientist and United States Navy rear admiral.



# The Story Of Finding The First Bug

The Mark II computer, an electromechanical computer developed at Harvard University, was having some issues, and a team led by Grace Hopper was tasked with finding and fixing the problem. On September 9, 1947, the team discovered an actual insect, a moth, causing a malfunction in the computer.

The moth was found stuck between relay contacts, preventing the computer from functioning correctly.

Grace Hopper documented the discovery by taping the moth to the computer's logbook and noting it as the "First actual case of bug being found."

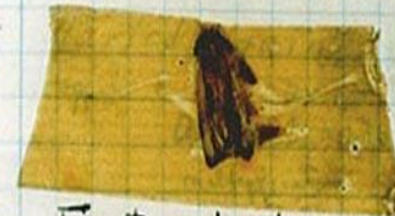
92

9/9

0800 Antam started  
 1000 " stopped - antam ✓  
 1300 (033) MP-MC 1.582142000  
 (033) PRO 2 2.130476415  
 convd 2.130676415  
 Relays 6-2 in 033 failed spiral speed test  
 in Relay " 11.000 test.

Relays changed  
 1100 Started Cosine Tape (Sine check)  
 1525 Started Multi-Adder Test.

1545



Relay #70 Panel F  
 (moth) in relay.

First actual case of bug being found.  
 1630 Antam started.  
 1700 closed down.

Relay  
 2145  
 Relay 3376

1. It's important to note that while the term "bug" became popularized through this incident, the practice of debugging existed before the discovery of the moth in the Mark II computer.
2. The term "bug" was already used in engineering to describe glitches in mechanical systems before this incident.





## **Hardware Bugs**

1. These are problems or flaws in the physical components of a computer or electronic device.
2. A malfunctioning keyboard key, a defective memory chip, or a problem with the central processing unit (CPU).
3. Hardware bugs can directly affect the performance or functionality of the device, and they often require physical repair or replacement of the faulty component.

## **Software Bugs**

1. These are issues or errors in the programs and instructions that run on a computer or electronic device.
2. A software bug might cause a program to crash, display incorrect information, or behave unexpectedly. It could be a coding error, logic mistake, or a problem with how different software components interact.
3. Software bugs can lead to operational issues, data corruption, or security vulnerabilities. They are typically addressed through software updates, patches, or fixes provided by developers.



The background of the image is a detailed, high-tech circuit board. It features a complex network of glowing blue and orange traces that snake across the surface. Various electronic components, including resistors and integrated circuits, are visible. On the right side, there's a large, dark rectangular area filled with glowing yellow and blue binary code (0s and 1s). The overall lighting is dark, with the primary light sources being the glowing traces and the binary code, creating a futuristic and digital atmosphere.

# DEBUGGING

**DEBUGGING IS THE PROCESS OF FINDING AND FIXING PROBLEMS OR "BUGS" IN COMPUTER PROGRAMS.**



| Past Bugs   | Present Bugs   |
|---|--|
| Predominantly, Hardware related issues.   | A mix of hardware and software issues, with software bugs more prevalent.  |
| Often involved physical defects or malfunctions, such as loose wires, insects or faulty components. | Primarily software-related, including coding errors and logic flaws.   |
| Limited debugging tools and techniques.   | Advanced debugging tools and methodologies, including integrated development environments (IDEs) and debugging software. |



A top-down view of several Christmas gifts wrapped in various patterns (hearts, snowflakes, trees) and colors (red, white, brown). The gifts are arranged on a dark wooden surface. A pair of hands is visible in the bottom left, adjusting a red ribbon on one of the gifts. The text 'THANK YOU' is written in large, white, bold, sans-serif capital letters across the center of the image.

**THANK YOU**