ASSIGNMENT -1

Advanced Operating System

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SECTION: A

1. **What are Spectre and Meltdown?**

Spectre and Meltdown are the names given to different variants of the same fundamental underlying vulnerability that affects nearly every computer chip manufactured in the last 20 years and could, if exploited, allow attackers to get access to data previously considered completely protected. Security researchers discovered the flaws late in 2017 and publicized them in early 2018. Technically, there are three variations on the vulnerability, each given its own  CVE number two of those variants are grouped to gether as  Spectre  and the third is dubbed  Meltdown.

All of the variants of this underlying vulnerability involve a malicious program gaining access to data that it shouldn't have the right to see, and do so by exploiting two important techniques used to speed up computer chips, called  speculative execution  and  caching.

2.How to protect your PC against Meltdown and Spectre CPU flaws

* Update your operating system
* Check for firmware updates
* Update your browser
* Update other software
* Keep your antivirus active
  1. How type of platfrom can be attact?

#### On January 3, 2018, Microsoft released an advisory and security updates related to a newly-discovered class of hardware vulnerabilities (known as Spectre and Meltdown) involving speculative execution side channels that affect AMD, ARM, and Intel processors to varying degrees. This class of vulnerabilities  are based on a common chip architecture that was originally designed to speed up computers.

#### [Which systems are affected by Meltdown?](https://meltdownattack.com/#faq-systems-meltdown)

Desktop, Laptop, and Cloud computers may be affected by Meltdown. More technically, every Intel processor which implements out-of-order execution is potentially affected, which is effectively every processor since 1995 (except Intel Itanium and Intel Atom before 2013). We successfully tested Meltdown on Intel processor generations released as early as 2011. Currently, we have only verified Meltdown on Intel processors. At the moment, it is unclear whether AMD processors are also affected by Meltdown. [According to ARM](https://developer.arm.com/support/security-update), some of their processors are also affected.

#### [**Which systems are affected by Spectre?**](https://meltdownattack.com/#faq-systems-spectre)

Almost every system is affected by Spectre: Desktops, Laptops, Cloud Servers, as well as Smartphones. More specifically, all modern processors capable of keeping many instructions in flight are potentially vulnerable. In particular, we have verified Spectre on Intel, AMD, and ARM processors.