Various techniques have been **developed to counter data remanence. These techniques are classified as clearing**, **purging/sanitizing, or destruction**. Specific methods include overwriting, degaussing, encryption, and media destruction.

Erasing is the simply deleting. Data can be retrieved.

Clearing is the removal of sensitive data from storage devices in such a way that there is assurance that the data may not be reconstructed using normal system functions or software file/data recovery utilities. The data may still be recoverable**, but not without special laboratory techniques**. **Clearing is typically an administrative protection** against accidental disclosure within an organization. For example, before a hard drive is re-used within an organization, its contents may be cleared to prevent their accidental disclosure to the next user.

**Purging or sanitizing** is the removal of sensitive data from a system or storage device with the intent that the **data cannot be reconstructed by any known technique**. Purging, proportional to the sensitivity of the data, is generally done before releasing media beyond control, such as before discarding old media, or moving media to a computer with different security requirements.

**Destruction** -The storage media is made unusable for conventional equipment. Effectiveness of destroying the media varies by medium and method. Depending on recording density of the media, and/or the destruction technique**, this may leave data recoverable by laboratory methods. Conversely, destruction using appropriate techniques is the most secure method of preventing retrieval.**

A common method used to counter data remanence is to **overwrite** the storage media with new data. This is often called **wiping or shredding** a file or disk

[**Degaussing**](https://en.wikipedia.org/wiki/Bulk_eraser) is the removal or reduction of **a magnetic field of a disk** or drive, using a device called a degausser that has been designed for the media being erased. Applied to [magnetic media](https://en.wikipedia.org/wiki/Magnetic_storage), degaussing may purge an entire media element quickly and effectively.

AC erasure – medium is degaussed by applying alternating field that is reduced **in amplitude over** time

DC erasure – medium is saturated by applying a **unidirectional field..,,.**