welcome to my presentation on "Noise in Photography: Uncovering Hidden Secrets Lets start.

* I decided to bring up this topic because I found it interesting how a simple photo can hide more information, as explained to me in the cybersecurity course Cyberchallenge2024.

It’s nice to see a clear photo, isn’t it? Image noise can reduce the sharpness and detail of a photograph, making it appear blurry or pixelated. This digital distortion can obscure crucial details or secret messages,

* Image noise refers to random variations in pixel intensity that occur in digital images. It can be caused by several factors:
  + un example of unintentional case are high ISO or low-light conditions.
  + Un example of Intentional use is to cover messages.
* In the CyberChallenge 2024 course that I personally attended from February until a week ago, held here in this pavilion, they taught us to analyze images at the pixel level to identify secret messages in a noisy photo. This technique of hiding information in photos, audio tracks, or files is called steganography. To solve steganography problems, are used different levels of software
* Here we can see the Python script on the left for a basic resolution that I created, and on the right, we can observe a more advanced image processing
* Now let’s do a copple of examples
* Here we can see the difference between a noisy photo and a noise-free one, In this case, we can see that the photo without noisy is more clear, in this other example noisy was hiding a secret message that we in the course had to uncover as an exercise.
* Steganography has several practical applications:

Here we can observe the various fields in which steganography and noise in a foto can be used, such as secure communications like military communications, investigative journalism, and more.

* Thank you for your attention. i hope this presentation helps you understand the importance of noise in photography and the techniques used to manage it
* After finishing my bachelor's degree, I was thinking of pursuing a master's degree specializing in cyber security since I found it very interesting, and perhaps then finding a job in this field