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Professor Name

CS305 Software Security

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***Module Four Written Assignment***

# **Algorithm Cypher:**

Advanced Encryption standard also known as AES is one of the best security protection practices to consider to help defend against many types of security attacks. Just from a quick Cloudwards search,(found in the resources below) this practice is commonly used in banking and supports key lengths of 128 bits up to 256 bits. This helps to protect the application against any third parties that aren’t authorized it helps its name be considered invincible against hackers.AES is the best choice for Artemis in all its encryption needs. This is due to the ability to decrypt and encrypt all files and even still keep them secure and maintained. Since this is banking we want top-of-the-line security for the users since we are holding their private information in the code. That’s why we have a choice in the most secure cipher. Due to research, we should want to utilize how it’s highly common amongst banking companies to use this.

# **Justification:**

The hash value is also known as the compressed value which overall both get created by taking whatever received input value and changing it into the compressed value. The hash value for AES-256 that gives it all its hype is the ability to analyze if data was altered. This helps discover the leaks in the system. Now move on to bit levels which conduct the longevity of the encryption. The higher we have the bit level the tighter the security on the number of possible keys. When we create more randomness we create by default unpredictability. That is why we want more random numbers, symmetric versus, non-symmetric keys, etc. as you would imagine. With the current state of encryption algorithms, it allows protection against unauthorized access. The bit levels will range from 128,192, and 256. And with us using 256-bit level it will allow quick analysis of any data leaks Due to it being clear for altered data.

**Resources:**

**Aleksander H. (2024, January 31). What is AES encryption & how does it work in 2024? 256-bit vs 128-bit**

[**https://www.cloudwards.net/what-is-aes/**](https://www.cloudwards.net/what-is-aes/)