**5-2 Coding Assignment: Certificate Generation**

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CS-305: Software Security

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March 30, 2023

**Why would you want to use a CA for security?**

Certification Authorities (CAs) verify the authenticity of websites. A CA is a reputable entity responsible for generating, distributing, and revoking SSL certificates. By verifying SSL/TLS certificates, a CA ensures communications are with a trustworthy source. The Transport Layer Security (TLS) certificate, also called Secure Sockets Layer (SSL), encrypts data sent between browsers and secures online transactions. Using encryption and public key, SSL/TLS works behind the scenes to ensure the security of online transactions and logins. ” Web browsers use them to authenticate content sent from web servers, ensuring trust in content delivered online” (Awati & Loshin, 2021). Additionally, this identifies the issuer or the holder of the Certificate. Personal information sent in a request without an SSL/TSL could be vulnerable to unauthorized access.

**What are the advantages of using a CA?**

There are numerous benefits to using a Certificate Authority. CAs provide authentication to confirm the connection with a trustworthy source. Additional security is provided by a CA when data is transmitted between sources. Certificate authorities (CA) are crucial to the internet as they provide information about revoked certificates and untrustworthy sources. At the top of any browser, next to the URL, a closed or open lock states a secure or insecure connection. When you click on the "lock," you can see whether the connection and certificate information are secure. Giving everyone peace of mind that the site they are visiting is safe. Due to the insecure nature of the internet, CAs enable online shopping, banking, etc. A CA verifies the legitimacy of a website; it is secure and does not risk exposing any critical personal information.

***Printout of the server.cer file***

Text

Description automatically generated

***Certification Information***

Graphical user interface, text, application, email

Description automatically generated

**References**

Awati, R., & Loshin, P. (2021, September 1). *What is a Certificate Authority (CA)?* TechTarget. <https://www.techtarget.com/searchsecurity/definition/certificate-authority>.