

1) Cryptographic primitive: Digital signature schemes

2) Implementation Usage:

Choice criteria -> Digital Signature schemes V	Security Assumption	Runtime	Key and signature size	Quantum computing safety
Hashed RSA	RSA + Random oracle	Efficient	Short 1024	Not safe
Schnorr	DL	Efficient	Short 256	Safe
DSA	Related to DL over $Z_p$	Efficient	Short 2048	Not safe
EC DSA	Related to DL over EC	Efficient	Very short 256	Not safe
Tree-based Lamport	One-way Hash Functions	Very efficient	Very short 256 (256*256)	
El-Gamal		Less efficient	1024 bits +	Not safe
DSS			256	Not safe
ED DSA			128 or 256	Not safe

DSA based on el-gamal

<https://www.etsi.org/images/files/ETSIWhitePapers/QuantumSafeWhitepaper.pdf>

3) Questions and implementation: python code

4) Evaluate:

5) Presentation:

OTHER:

<https://towardsdatascience.com/a-guide-to-decision-trees-for-machine-learning-and-data-science-fe2607241956>

<https://www.youtube.com/watch?v=myJ36xIR7Yg>

<https://drive.google.com/drive/folders/1pRbBWBwsmHUgOvldxSn4NiC-U4o3DKnC>

[https://docs.google.com/presentation/d/1dPCTmtFK7ngGIUdAb-ZzRsWnvBK0iTwALx4F0SuWYzC/edit#slide=id.gd6dc3a5414\\_0\\_304](https://docs.google.com/presentation/d/1dPCTmtFK7ngGIUdAb-ZzRsWnvBK0iTwALx4F0SuWYzC/edit#slide=id.gd6dc3a5414_0_304)

<https://shibboleth.nyu.edu/idp/profile/SAML2/Unsolicited/SSO?execution=e3s1>  
<https://stackoverflow.com/questions/613183/how-do-i-sort-a-dictionary-by-value>  
[https://www.w3schools.com/python/trypython.asp?filename=demo\\_dictionary\\_brand](https://www.w3schools.com/python/trypython.asp?filename=demo_dictionary_brand)  
[https://www.w3schools.com/python/python\\_dictionaries.asp](https://www.w3schools.com/python/python_dictionaries.asp)  
<http://www.compciv.org/guides/python/fundamentals/dictionaries-overview/>  
<https://shibboleth.nyu.edu/idp/profile/SAML2/Unsolicited/SSO?execution=e1s1>