

SUPERVISOR: AHMED HANIF



NARWAL AUTH API DELIVERABLE 1: STRENGTHS

**MUHAMMAD NASEEM
SAMI NAEEM
HASSAAN FAROOQ**

1) Protection and Security:

- Server doesn't store password or hash, only public key Y
- Each authentication attempt is unique
- Protects against malicious servers misusing passwords.
- Hard to attack due to randomized challenges
- Immune to Man in the middle attacks
- Protection against Phishing: As the actual password isn't transmitted, phishing attacks are less effective
- Immunity to Password Database Breaches
- Cross-Site Password Reuse Mitigation: Even if a user reuses passwords across sites, the unique public keys generated for each site protect against cross-site vulnerabilities.

2) Scalability:

- Reduced Server-Side Computational Load, As the majority of the cryptographic computations are performed on the client-side, hence reducing the server load,
- No Need for Secure Password Storage Techniques, As the server doesn't need to implement complex password security strategies.
- Facilitates Multi-Factor Authentication, As system can be easily extended to incorporate additional authentication factors.
- Zero-Knowledge allows for easy auditing of the authentication process without exposing the sensitive information
- Future-Proofing: The mathematical basis of the system (discrete logarithm problem) is believed to be resistant even to quantum computing attacks, providing some level of future-proofing.

3) Policy Compliance:

- It compliance with privacy regulations, since it doesn't store the user passwords
- Narwal auth API is in-line with the regulations of a lot – if not all – of the security and protection standards and policies.