Unit-2

2. In what ways getHostName() differs from getCannonicalHostName()?

= Here's a difference that how getHostName() is different from getCannonicalHostName():

- **getHostName()**:

  - Retrieves the hostname using a basic reverse DNS lookup or local system configuration (e.g., hosts file).
  - Returns a hostname that may be an alias, a short name, or the first name provided by DNS.
  - Minimal DNS resolution; often relies on cached or locally available data.
  - If no hostname is resolved, it returns the IP address as a string (e.g., "192.168.1.1").
  - Faster due to lighter DNS queries and reliance on cached results.
  - Less reliable for unique identification, as it may return non-standard or aliased names.
  - For "www.example.com", it might return "www" or an alias like "web1.example.com".

- **getCanonicalHostName()**:

  - Performs a thorough DNS lookup to resolve the canonical (authoritative) hostname.
  - Returns the Fully Qualified Domain Name (FQDN), ensuring the official and unique name of the host.
  - More extensive DNS resolution, potentially querying multiple records to find the canonical name.
  - If DNS resolution fails, it may return the IP address or the same result as getHostName().
  - Slower than getHostName() due to additional DNS queries for canonical resolution.
  - More reliable for consistent and authoritative host identification, critical for security or networking.
  - For "www.example.com", it consistently returns "www.example.com" as the FQDN.