To get DNS name from IP address:

# nslookup <IP\_address>

To get IP from DNS name:

# nslookup google.com

To get neatly formatted information about open ports. This scans for 1000 ports and displays the ones that are open. The –oG flag just formats the output. We can specify a range of IP addresses here to scan.

# nmap –oG - <IP-addresses> -vv

# nmap –oG – 10.2.16.9-16 –vv

To scan for only ssh port in the given range of IP addresses:

# nmap –oG - <IP-addresses> -vv –p 22

# nmap –oG – 10.2.16.9-16 –vv –p 22

To do an aggressive scan. The following displays information about keys, OS etc.

# nmap –A <IP\_address>

# nmap –A 10.2.16.206

To do a fast scan. The following just scans for the most common 100 ports.

# nmap –F <IP-addresses> -vv

Fast scanning two servers:

# nmap –F 10.2.16.206 10.2.16.205

The target machine must have its firewall turned off or else the scan will return the machine as **down**.

# To Look Into:

## OOP:

Static, Dynamic binding. Early, late binding.

Overriding, overloading.

Polymorphism, virtual functions, pure virtual functions.

Abstraction

Interface

Access modifiers/sealed modifiers

Design Patterns

Static Class

Cohesion, Coupling

Rest API’s

# DBMS:

Normalization.

Keys.

Full Join.

Aggregate functions.

Views and tables.

Hashing an indexing. Clustered index.

Stored Procedures.

Transactions.

Drawing schemas.

ACID

Triggers.

## Programming and MySQL.

Passing array to function VS passing index of array to function.

Hashing

Linked list

Doing array stuff is O(n).

Implement Data structures (stack, queues, BST)

Permutations of a string.

Practice MySQL queries.

AVL rotations.

Restructuring the linked list class.

## Analytical

8 balls problem.

25 horses problem.

Rope problem.

Beast problem.

# Information Security:

* Trust No One, Principle of Least Privilege.
* DNS Monitoring.
* Encoding, encrypting, hashing.
* HTTPS, SSL and TLS.
* IPS/IDS.
* **Two factor Authentication / Non-repudiation.**
* **XSS attack.**
* Patch
* **SQL Injection Attack**