Final exam ( database )

Q1: What is normalization?

Ans :Normalization is the process of organizing data in a database. This includes creating tables and establishing relationships between those tables according to rules designed both to protect the data and to make the database more flexible by eliminating redundancy and inconsistent dependency.

Q2: What is 1NF? Explain with examples.

Ans : it means first normal form (1NF) is a property of a relation in a relational database. A relation is in first normal form if and only if the domain of each attribute contains only atomic (indivisible) values, and the value of each attribute contains only a single value from that domain. For example , if we make a table for any product the value of some column is same same then a repeating group means that a table contains two or more columns that are closely related.

Q3: What is 3NF? Explain with examples

Ans : A relation is in third normal form if it is in 2NF and no non key attribute is transitively dependent on the primary key. ... To get to the third normal form (3NF), we have to put the bank name in a separate table together with the clearing number to identify it. For example , The third normal form (3NF) is a normal form used in database normalization. ... Codd's definition states that a table is in 3NF if and only if both of the following conditions hold: The relation R (table) is in second normal form (2NF). Every non-prime attribute of R is non-transitively dependent on every key of R.

Q4: What is BCNF? Explain with examples.

Ans : it means Boyce–Codd normal form . it is a normal form used in database normalization. It is a slightly stronger version of the third normal form (3NF). If a relational schema is in BCNF then all redundancy based on functional dependency has been removed, although other types of redundancy may still exist. For example ,  A table complies with **BCNF** if it is in 3NF and for every functional dependency X->Y, X should be the super key of the table.

Q5: What is Operating system? Give examples?

Ans : An operating system, or "OS," is software that communicates with the hardware and allows other programs to run. Every desktop computer, tablet, and smartphone includes an operating system that provides basic functionality for the device. For example : Windows, OS X and Linux.

Q6: What is Linux operating system? Why it is considered as better alternative than windows?

Ans :Linux is an open source operating system (OS). An operating system is the software that directly manages a system's hardware and resources, like CPU, memory, and storage. The OS sits between applications and hardware and makes the connections between all of your software and the physical resources that do the work. And it is better becauseLinux can be installed and used it as a desktop, firewall, a file server, or a web server. Linux allows a user to control every aspect of the operating systems. As Linux is an open-source operating system, it allows a user to modify its source (even source code of applications) itself as per the user requirements

Q7: What is trojen horse?

Ans : A Trojan horse, or Trojan, is a type of malicious code or software that looks legitimate but can take control of your computer. A Trojan is designed to damage, disrupt, steal, or in general inflict some other harmful action on your data or network. A Trojan acts like a bona fide application or file to trick you.

Q8: What is MD5 hash and exlpain its significance using a practcal example?

Ans : MD5 maps a set of data to a bit string of a fixed size called the hash value. Hash functions have variable levels of complexity and difficulty and are used for cryptocurrency, password security, and message security. Following in the footsteps of MD2 and MD4, MD5 produces a 128-bit hash value. For example :MD5 processes a variable-length message into a fixed-length output of 128 bits. The input message is broken up into chunks of 512-bit blocks (sixteen 32-bit words); the message is padded so that its length is divisible by 512. The padding works as follows: first a single bit, 1, is appended to the end of the message.

Q9: What is dark web?

Ans : The dark web refers to encrypted online content that is not indexed by conventional search engines. Most deep web content consists of private files hosted on Dropbox and its competitors or subscriber-only databases rather than anything illegal. Specific browsers, such as Tor Browser, are required to reach the dark web.

Q10: How can be we access dark web?

Ans: for the access we can use these following steps:

1 . Download and install the anonymous Tor browser from their official website.

2 .Switch on your VPN for extra online security.

3 .Launch the Tor browser.

4 .Make sure your Tor browser doesn’t allow any scripts to run.

5 .Adjust the browser’s security level to “most secure”.

6 .Go to the dark web website you want to visit.

Q11: What is black and white hat hackers?

Ans : Some hackers are criminals and use their computer skills to harm or damage computer systems. These people are called black hathackers. Onthe other hand  White hat hackers are use their computer skills to perform ethical hacking.

Q12: Which operating systems are used for hacking and penetration testing?

Ans : There are some operating systems which are used for hacking and penetration testing.

1.Kali Linux.

2.BackBox.

3.Parrot Security Operating System.

4,DEFT Linux.

5.Network Security Toolkit.

Q13: Why windows are more prone to viruses?

Ans :

Q14: What is open source softwares?

Ans :it means the software for which the original source code is made freely available and may be redistributed and modified according to the requirement of the user.

Q16: Why windows Vista was a big failure?

Ans :Microsoft either forgot or disregarded that fact when it released Windows Vista, because, despite a long beta period, a lot of existing software and hardware were not compatible with Vista when it was released in January 2007. In other words, Vista broke a lot of the things that users were used to doing in XP.