

ASSIGNMENT-1

① Different Types of Cyber Attacks.

Ans Cyber-attacks can be classified into following categories:-

- (i) Web-based attacks
- (ii) System-based attacks.

↳ Web-based attacks:

These attacks occur on a website or web applications. Some of the web-based attacks are as follows:-

(i) Injection attacks:

↳ In this attack, some data will be injected into a web application to manipulate the application and fetch the required information.

Ex: SQL Injection

(ii) DNS Spoofing:

↳ It is Computer Security hacking. Here, data is introduced into DNS resolver's caching. The name server to return an incorrect IP address, diverting traffic to the attacker's computer or any other computer.

(iii) Session Hijacking:

↳ It is a security attack on a user session over a protected network. Web applications create cookies to store the state and user sessions. By stealing the cookies, an attacker can have access to all of user data.

(iv) phishing:

↳ phishing is type of attack which attempts to steal sensitive information like user login credentials and credit card numbers.

(v) Brute-force:

↳ It is type of attack which guesses a trail and error

This attack generates a large number of guesses and validates them to obtain actual data like user password and personal identification number.

(vi) Denial of Service:

↳ This meant to make a server or network resource unavailable to the users. It accomplishes this by flooding the target with traffic or sending it information that triggers a crash.

(vii) Man-in-the middle attacks:

↳ It is a type of attack that allows an attacker to intercept the connection between client and server and acts as a bridge between them. Due to this attacker will be able to read, insert and modify the data in the intercepted connection.

↳ System-based Attacks:

↳ These attacks are intended to compromise a computer or a computer network. Some of them are as follows:

(i) Virus:

↳ It is a malicious software program that spreads throughout the computer files without knowledge of user.

(ii) Worm:

↳ It is type of malware whose primary function is to replicate itself to spread to uninfected computers.

(iii) Trojan Horse:

↳ It is a malicious program that occurs unexpectedly changes to computer setting and unusual activity, even when the computer should be idle.

(iv) Bots:

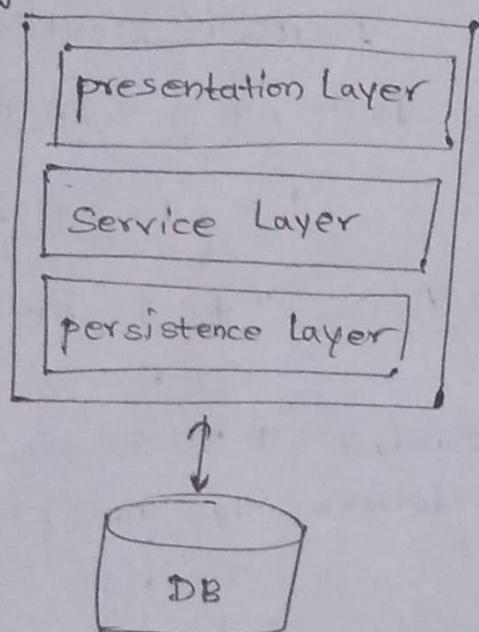
↳ Short of Robot is automated process that interacts with other network services.

ASSIGNMENT-2

Q: Define Monolithic & MicroService architecture. Differentiate between REST & SOAP.

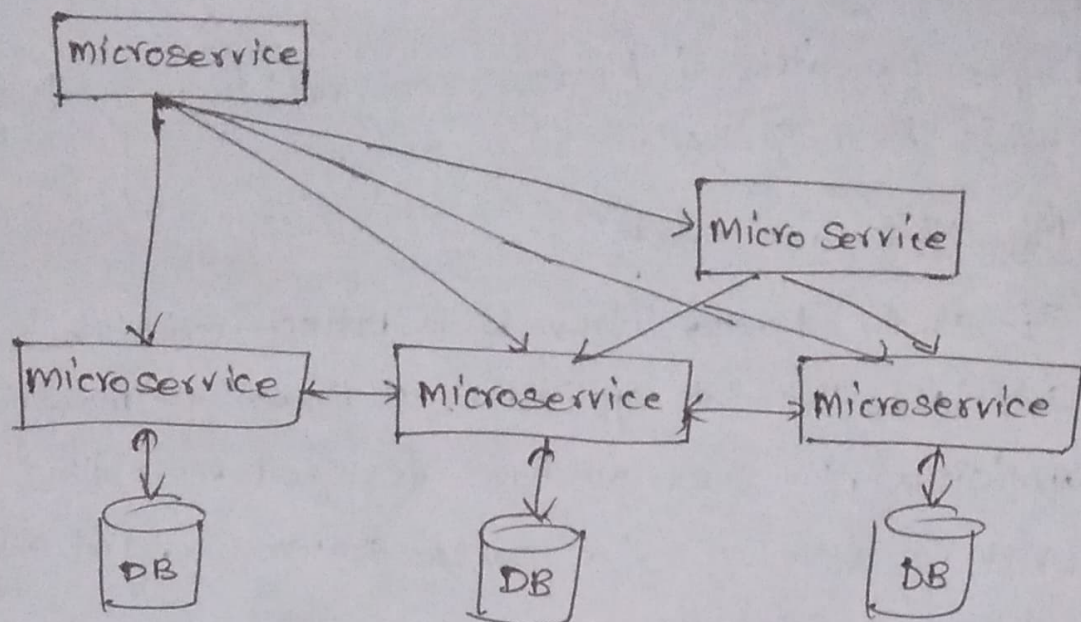
A: Monolithic Architecture:

↳ If all the functionalities of a project exist in a single code base, then that application is known as monolithic application, we must all have designed monolithic architecture in which we were given a problem statements, and were asked to design a system.



Microservices:

↳ It is an architectural development style in which the application is made up of smaller services that handle a small portion of the functionality and data by communicating with each other directly using light-weight protocols like HTTP. According to Sam Newman, "Microservices are the small services that work together".



microservices architecture

Difference between REST API & SOAP API

SOAP API

1. SOAP: Simple Object Access Protocol.
2. It follows a strict standard to allow communication between the client and
3. It uses only XML for exchanging information in its message format.
4. It uses services like Web Service
5. SOAP has ACID Compliance transaction.
6. SOAP has SSL and WS-Security
7. SOAP can't use REST as it is a protocol not architecture

REST API

1. REST: Representational State Transfer
2. It is architectural style that doesn't follow any strict standard
3. REST is not restricted to XML and it's the choice of implementer
4. It uses URL's like path instead of interfaces
5. REST does not have ACID Compliance transaction.
6. REST has SSL and HTTPS Security
7. REST can make use of SOAP because it is architecture

ASSIGNMENT - 3

Q. Types of Manual Testing.

A: Manual testing is software testing process in which test cases are executed manually without using any automated tool.

↳ Types:-

(i) White Box Testing

(ii) Black Box Testing

(iii) Gray Box Testing.

① White-box Testing:-

↳ It is done by developer, where they check every line of code before giving it to test Engineer.

② Black Box Testing:-

↳ Black-box testing done by test Engineer where they can check the functionality of an application or software according to customer/clients needs.

③ Gray-box Testing:-

↳ Combination of White box and Black box testing.
↳ It can be performed by person who knew both coding & testing.