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**Question 1**

* 1. **SQL Injection** - refers to a method used by attackers to inject malicious SQL statements into the database to gain access to private/confidential data.
     1. **Authentication** - verifying whether a user is indeed who they claim they are (e.g. confirming if the credentials supplied by user when logging in matches what we have in record.)
     2. **Authorization** – Granting the right/permission to do something (e.g. Confirming if the user has the right/privilege to view financial statements on the system).
  2. **Security testing** – testing the system for vulnerabilities.
  3. **Denial of service (DDoS Attack)** – overwhelming the network with traffic to slow down performance or crush the system.
  4. **Methodologies in Security testing** – Vulnerability assessment, Penetration scanning.
  5. **What is “Vulnerability” and how would you prevent it** – likelihood of a system being attacked, can be prevented by scanning the application for vulnerabilities.
  6. **How to mitigate the SQL Injection risks** – by writing defensive SQL statements and testing against special character injections.

**Question 2**

2.1

2.1.1 **GIT pull** – refers to a command used to retrieve data from the repository and merges with the local data.

2.1.2 **GIT fetch** - refers to a command used to retrieve data from remote repository onto the local repository.

2.2 **How does the Centralized Workflow work** – refers to a workspace shared by multiple users (e.g. a hypervisor with virtual machines belonging to development team)**.**

2.3 **Git fork –**

**Question 3**

**3.1 Array** – a container that consists of a group of elements that are indexed**.**

**3.2 why use WebSocket over Http –** WebSocket provides full-duplex communication channels over a single transmission control protocol meanwhile HTTP provided a half-duplex.

**3.3 Scalability** – refers to the ability to expand or grow a network.

**3.4 Cluster** – refers to a group of computers on a network that acts as a single computer, we need it to enhance performance of the systems and even if one system breaks, the others can easily take over.

**Question 4**

**4.1 ini\_set()** – used to temporarily change settings in the php.ini file (e.g. changing value of memory limit)

**4.2 $GLOBALS** – used to define global variables that can be accessed from anywhere in the script.

**4.3 Keys & Values** in an indexed array – a key gives you the position of an element in an array, while the value contains the actual value of the element for a given index.

**3.4 How we handle exceptions in PHP** – using the “try” and “catch” error handling methods.

**3.5** unset($messages[array\_search($del\_val, $messages)]);