**Levels of Software Testing**

**Unit Testing:**

Purpose: To validate that individual units or components of the software function as intended.

Performed by: Developers

Focus: Isolated code components or functions.

**Integration Testing:**

Purpose: To ensure that different units or modules work together as expected.

Performed by: Developers or Testers

Focus: Interactions between integrated units or modules.

**System Testing:**

Purpose: To validate the complete and integrated software product to ensure it meets the specified requirements.

Performed by: Testers

Focus: The entire system's functionality, performance, security, and overall behavior.

**Acceptance Testing:**

Purpose: To determine whether the software is ready for release and meets the end-users' requirements.

Performed by: End-users, clients, or stakeholders

Focus: User needs, business processes, and compliance with requirements.

Types: User Acceptance Testing (UAT), Alpha Testing, Beta Testing.

**Regression Testing:**

Purpose: To ensure that new code changes have not adversely affected existing functionalities.

Performed by: Testers

Focus: Previously tested functionalities after changes or enhancements.

**Performance Testing:**

Purpose: To assess the software's performance under various conditions, including load, stress, and scalability.

Performed by: Performance Testers

Focus: Response time, throughput, resource usage, and reliability under load.

**Security Testing:**

Purpose: To identify vulnerabilities and ensure that the software is protected against attacks.

Performed by: Security Testers

Focus: Data protection, authentication, authorization, and overall security measures.

**Usability Testing:**

Purpose: To evaluate the software's ease of use and user experience.

Performed by: Usability Testers or end-users

Focus: User interface, navigation, and overall user satisfaction.

**Compatibility Testing:**

Purpose: To ensure that the software works across different environments, such as browsers, devices, and operating systems.

Performed by: Testers

Focus: Software behavior across various configurations.