Main Types of Software Testing (QA Job-Ready)

# 1. Based on Purpose

* Functional Testing – Test if features work as expected
* Non-Functional Testing – Test how the system behaves (speed, security, etc.)

# 2. Based on Execution

* Manual Testing – Performed by human testers
* Automation Testing – Done using tools (e.g., Selenium, Postman)

# 3. Based on Code Access

* Black Box Testing – Tester has no code access
* White Box Testing – Developer has full code access
* Grey Box Testing – Partial code knowledge (QA + Dev mix)

# 4. Based on Testing Level

* Unit Testing – Individual code pieces (by developers)
* Integration Testing – How modules connect/work together
* System Testing – Testing the entire system
* User Acceptance Testing (UAT) – Final testing by client/user

## ✅ ****Must-Know Functional Testing Types****

🎯 These test whether the app’s features (functions) work as expected.

| **Type** | **Simple Definition** | **Little Explanation** |
| --- | --- | --- |
| **Smoke Testing** | Basic check: Is build stable? | Quick test after a new build is given — checks major features like login, dashboard load. If it fails, no point in testing further. |
| **Sanity Testing** | Quick test of a new feature | After a bug fix or small change, we test only the affected feature (e.g. "Just test the signup page again"). |
| **3. Regression Testing** | Test old features after changes | After new features are added, test old features again to ensure nothing broke (login, cart still work). |
| 1. **Retesting** | Recheck fixed bugs | Bug was reported → dev fixed → QA retests same bug (same steps + data). |
| 1. **Exploratory Testing** | Test without written cases | Tester uses product freely, using experience and logic to find hidden bugs. |
| 1. **Ad-hoc Testing** | Random, unplanned testing | Performed without following documentation. “Just play around and test unusual flows.” |
| 1. **Acceptance Testing** | Tested by end-user before release | Client or UAT team tests software to confirm: “Yes, this meets our needs — ready for go live.” |

## ✅ ****Main Non-Functional Testing Types****

🎯 These test the **quality of system performance**, not just functionality.

| **Type** | **Simple Definition** | **Little Explanation** |
| --- | --- | --- |
| 1. **Performance Testing** | Is the app fast enough? | Measure app speed, responsiveness (e.g., login loads in 2 sec). |
| 1. **Load Testing** | Can it handle many users? | Simulate 100–1000 users to see if the system runs smoothly under expected traffic. |
| 1. **Stress Testing** | What if traffic goes extreme? | Push beyond limits — what if 5000 users suddenly join? App should handle or fail gracefully. |
| 1. **Security Testing** | Is the app secure? | Test for login security, data leaks, unauthorized access, password safety, etc. |
| 1. **Usability Testing** | Is it easy to use? | Is the app user-friendly? Are buttons clear? Does user understand how to use it? |
| 1. **Compatibility Testing** | Does it work on all platforms? | Run app on Chrome, Firefox, iOS, Android, etc., to ensure consistent behavior everywhere. |