

<p><b>Software Development Life Cycle (SDLC)</b></p> <p>A formalized framework describing activities and <b>steps to develop/build software</b>.</p> <p>- Includes <b>6 steps/phases</b> - steps to plan, design, develop, and test high quality software:</p> <ol style="list-style-type: none"> <li>1. Requirement Gathering</li> <li>2. Design</li> <li>3. Development/Coding</li> <li>4. Testing</li> <li>5. Production (<i>Deployment/Release</i>)</li> <li>6. Maintenance</li> </ol>	<p><b>Requirement</b></p> <p>A <b>requirement</b> is a specification of a business need that can include functions, behaviors, and qualities of a product, service, process, or practice.</p> <p>The client/stakeholders provide requirements.</p> <p>In agile, requirements are the user stories.</p>	<p><b>Software Testing</b></p> <p>Process of verifying that a program functions properly, Evaluate the quality of the application by comparing expected and the actual result.</p> <p>- Expected result is matching actual result. Compare actual results against SRS document</p> <p>- Process to assure the quality of a software</p> <p>- The goal is to prevent &amp; identify any bugs in the app</p> <p>- Verify if the actual software meets the client's expected requirements</p>
<p><b>Manual Testing</b></p> <p>In Manual Testing, Testers manually execute test cases using manual testing tools.</p> <p>- <i>Manually testing software for defects;</i></p> <p>- <i>Tester plays the role of an end-user;</i></p> <p>- <i>Test all features to ensure the correct behavior.</i></p> <p>When to conduct the Manual Testing?</p> <p>- <i>Expensive to do automation;</i></p> <p>- <i>Need for human judgment;</i></p> <p>- <i>Ongoing needs for human intervention;</i></p> <p>- <i>Starting a project newly.</i></p>	<p><b>Verification (Static Testing)</b></p> <p>Human-based checking/testing of <b>documents</b>. Does <b>NOT</b> involve code or project</p> <p>E.g. : verify SRS doc, design doc, etc ...</p> <p>Static Testing includes 2 steps:</p> <ol style="list-style-type: none"> <li>1. Requirement Gathering</li> <li>2. Design</li> </ol> <p>How to test documents ?</p> <ul style="list-style-type: none"> <li>- Review</li> <li>- Walk through</li> <li>- Inspection</li> </ul>	<p><b>Validation (Dynamic Testing)</b></p> <p>Process of verifying the software and its features</p> <p>Actual <b>code and software</b> execution</p> <p>Computer-based testing the application (Automation )</p> <p>Also, involve human-based testing the application</p> <p>Dynamic Testing includes 2 steps:</p> <ol style="list-style-type: none"> <li>3. Development/Coding</li> <li>4. Testing</li> </ol> <p>How to test code and app ?</p> <p>White Box Testing / Black Box Testing / Grey Box Test</p>
<p><b>Software Environment (Env)</b></p> <p>Environments are the <b>different versions of the software</b>, and each env has a different purpose to use.</p> <p><i>Example:</i></p> <p><b>Dev Env</b>      <a href="http://dev.restaurant.com">http://dev.restaurant.com</a></p> <p><b>Test Env</b>      <a href="http://qa.restaurant.com">http://qa.restaurant.com</a></p> <p><b>Staging Env</b> <a href="http://stg.restaurant.com">http://stg.restaurant.com</a></p> <p><b>Production</b>   <a href="https://restaurant.com">https://restaurant.com</a></p>	<p><b>Dev Environment (Developer's workstation)</b></p> <p>Changes are made in this environment (new feature, bug fix, etc);</p> <p>Unit &amp; Integration testings are performed;</p> <p>After the tests are passed, the items are deployed/moved to one or more test environments.</p> <p><i>Example:</i></p> <p><a href="http://dev.amazon.com">http://dev.amazon.com</a></p>	<p><b>QA Environment (Testers's workstation)</b></p> <p>Tester's environment to <b>test Functional &amp; non-Functional</b> parts of the app;</p> <p>Smoke testing was also performed in the QA Env;</p> <p>Regression testing - it depends. in QA Env or Stg Env.</p> <p><i>Example:</i></p> <p><a href="http://qa.amazon.com">http://qa.amazon.com</a></p>

**SDLC**

**Requirement**

**Software  
Testing**

**Manual Testing**

**Verification**

**Validation**

**Software  
Environment**

**Dev  
Environment**

**QA  
Environment**