









































































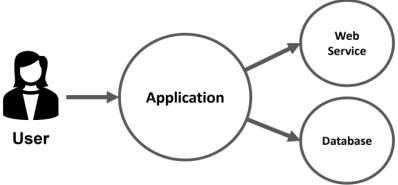






<h3>BDD-ATDD</h3> <p>Built-in quality allows quicker delivery of business value. Use Behavior Driven Development (BDD) / Acceptance Test-Driven Development (ATDD) to realize built-in quality.</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>	<h3>Discovery</h3> <p>Explore story to find flows, business rules, domain terms. A story has one or more scenarios.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Requirements <input type="checkbox"/> User Story: Candidate Story <p>Understand the Requirements</p> <p>Shape the System</p> <p>Analysis</p> <ul style="list-style-type: none"> <input type="checkbox"/> Scenario: Discovered (contributes to) <input type="checkbox"/> Scenario Description: Simply Described <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>	<h3>Scenario</h3> <p>Describes an aspect of the behavior of a User Story. Scenarios act as a means to share understanding of behavior. They provide the test and documentation for behavior.</p> <p>Discovered</p> <p>Formulated</p> <p>Automated</p> <p>Executed</p> <p>Successfully Executed</p> <p>describes aspects of: <input type="checkbox"/> User Story</p> <p>Relates to: <input type="checkbox"/> Requirements</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>
<h3>Scenario</h3> <p>Automated</p> <p>The scenario is connected to the appropriate production code. Most of the time, execution can be automated, but in some cases it may need to be run manually.</p> <p>3 / 5</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>	<h3>Scenario</h3> <p>Discovered</p> <ul style="list-style-type: none"> <input type="checkbox"/> Scenario named <input type="checkbox"/> Simply described <p>1 / 5</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>	<h3>Scenario</h3> <p>Executed</p> <ul style="list-style-type: none"> <input type="checkbox"/> Scenario and its connected production code has been executed <input type="checkbox"/> Test result is recorded. Failure indicates the product code must be revised. <p>4 / 5</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>
<h3>Scenario</h3> <p>Formulated</p> <ul style="list-style-type: none"> <input type="checkbox"/> Scenario described as Given-When-Then <input type="checkbox"/> Enough detail to be ready for automation <p>2 / 5</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>	<h3>Scenario</h3> <p>Successfully Executed</p> <p>The test result of the execution of the scenario and its production code is 'Success'.</p> <p>5 / 5</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>	<h3>Scenario Description</h3> <p>A description of the desired behavior of the system.</p> <p>Simply Described</p> <p>Given-When-Then</p> <p>Sufficient detail for automation</p> <p>Describes: <input type="checkbox"/> Scenario</p> <p>ATDD TDD LEAN - AGILE KEN PUGH, INC. Designed using UI Essence in Practice Workbench™</p> <p>1.0</p>

<div>  <h2>Scenario Description</h2> </div> <div> <h3>Given-When-Then</h3> <p>The behavior is presented in a format: Given <i>state</i> or <i>condition</i> When <i>action</i> or <i>event occurs</i> Then <i>new state, output</i> or both</p> </div> <div> <div>2 / 3</div> <div>   1.0 </div> </div>	<div>  <h2>Scenario Description</h2> </div> <div> <h3>Simply Described</h3> <p>A phrase or sentence describing the behavior.</p> </div> <div> <div>1 / 3</div> <div>   1.0 </div> </div>	<div>  <h2>Scenario Description</h2> </div> <div> <h3>Sufficient detail for automation</h3> <p>Behavior is described with sufficient data so that the corresponding production code can be executed and the results compared.</p> </div> <div> <div>3 / 3</div> <div>   1.0 </div> </div>
<div>  <h2>Formulation</h2> </div> <div> <p>Revise scenario. Add data to scenarios, clarify the flow, business rules / calculations, and domain terms. May produce sufficient detail for automation.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Requirements <input checked="" type="checkbox"/> Scenario: Discovered <ul style="list-style-type: none"> Understand the Requirements Shape the System <div>    </div> Development Testing Analysis <input type="checkbox"/> Scenario: Formulated <ul style="list-style-type: none"> Scenario Description: Given-When-Then or beyond </div> <div> <div>ATDD TDD</div> <div>  1.0 </div> </div>	<div>  <h2>Automation</h2> </div> <div> <p>Connect scenario to production code. May need to create additional detail for automation if input is not sufficient. Add checks that actual results match expected result.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Scenario: Formulated <ul style="list-style-type: none"> Scenario Description: Given-When-Then or beyond <div> <div>Test the System</div> <div>  Development </div> </div> <input type="checkbox"/> Scenario: Automated (contributes to) </div> <div> <div>ATDD TDD</div> <div>  1.0 </div> </div>	<div>  <h2>Execution</h2> </div> <div> <p>Execute the scenario, either with automation or manually.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Software System <input checked="" type="checkbox"/> Scenario: Automated <div> <div>Test the System</div> <div>  Testing </div> </div> <input type="checkbox"/> Scenario: Executed or beyond (contributes to) <input type="checkbox"/> User Story: Accepted (optional) (contributes to) </div> <div> <div>ATDD TDD</div> <div>  1.0 </div> </div>
<div>  <h2>Triad</h2> </div> <div> <p>Three perspectives:</p> <ul style="list-style-type: none"> • Customer who provides requirements • Developer who implements requirements • Tester who critically analyzes the requirements and the implementation </div> <div>  <p>participates in:  Discovery</p> </div> <div> <div>ATDD TDD</div> <div>  1.0 </div> </div>	<div>  <h2>Customer</h2> </div> <div> <p>Customers are the primary providers of desired behavior. They can include product owners, business analysts, subject matter experts.</p> </div> <div> <p>part of:  Triad</p> </div> <div> <div>ATDD TDD</div> <div>  1.0 </div> </div>	<div>  <h2>Developers</h2> </div> <div> <p>Developers are involved with automation of scenarios, implementation of behavior - connecting to production code, and creating Test Doubles</p> </div> <div> <p>part of:  Triad creates:  Test Double</p> </div> <div> <div>ATDD TDD</div> <div>  1.0 </div> </div>

<div>  <h2>Testers</h2> </div> <p>Testers primarily consider issues with executing scenarios - e.g.</p> <ul style="list-style-type: none"> • what could go wrong? • what are edge cases? <div> <p>part of:  Triad</p>  </div> <div>  1.0 </div>	<div>  <h2>Scenario Types</h2> </div> <p>Scenarios can describe</p> <ul style="list-style-type: none"> • Flow • Domain Terms • Business Rules <p>detailed by:  Business Rule Scenario,  Domain Term Scenario and  Flow Scenario help find types of scenarios in:  Discovery help describe scenarios well in:  Formulation</p> <div>  </div> <div>  1.0 </div>	<div>  <h2>Flow Scenario</h2> </div> <p>A Flow Scenario documents a single flow through the system:</p> <p>Given <i>some condition or state</i> When <i>event or action occurs</i> Then <i>a new state, some output, or both</i> For example, Given document with "Current temperature is 0°C", When measure changed, Then, document has "Current temperature is 32°F".</p> <p>A Flow Scenario could represent entire workflow, a step in the workflow, or the detail within a step</p> <p>type of:  Scenario Types documented in:  Scenario Description: Given-When-Then</p> <div>  </div> <div>  1.0 </div>
<div>  <h2>Domain Term Scenario</h2> </div> <p>A Domain Term Scenario documents valid and invalid values for a particular domain term.</p> <p>For example, for the <i>domain term</i> of temperature, values cannot be below absolute zero (-273.15°C) so -273.15°C is valid but -273.16°C is not.</p> <p>type of:  Scenario Types helps identify scenarios in:  Discovery provides guidance for describing scenarios in:  Formulation</p> <div>  </div> <div>  1.0 </div>	<div>  <h2>Business Rule Scenario</h2> </div> <p>A Business Rule Scenario documents the output of particular business rule or calculation.</p> <p>The form is typically: Given <i>some input</i> When <i>business rule / calculation executed</i> Then <i>some output</i> For example, to convert °C to °F input =0 output=32 input=100, output=212 Business rule scenarios can be fast to execute, as there is little preparation required.</p> <p>type of:  Scenario Types documented in:  Scenario Description: Given-When-Then</p> <div>  </div> <div>  1.0 </div>	<div>  <h2>Scenario Levels</h2> </div> <p>A Given/When/Then scenario could document:</p> <ul style="list-style-type: none"> • Just the steps without any data • Data as part of the steps • Complete set of data (e.g. equivalence classes, breakpoints, limits) <p>provides detail for:  Scenario Description</p> <div>  </div> <div>  1.0 </div>
<div>  <h2>Test Double</h2> </div> <p>A Test Double (aka Mock) provides an implementation of external entities for those that are slow, random, or expensive to operate.</p> <p>With test doubles, automated tests can run faster and more reliably.</p> <p>aids with:  Execution</p> <div>  </div> <div>  1.0 </div>	<div>  <h2>Relevant Data</h2> </div> <p>Scenarios are typically automated using glue code that connects the scenario to the production code.</p> <p>Data that is used during execution can appear in either the scenario or the glue code.</p> <p>Relevant data which is needed to understand the scenario should be shown in the scenario. The remainder of the data can be part of the glue code.</p> <p>options for:  Scenario can be developed during:  Formulation can define:  Scenario Description</p> <div>  </div> <div>  1.0 </div>	<div>  <h2>Context Diagram</h2> </div> <p>Identify the scope of the application - what is internal and what is external - and what other systems an application interacts with.</p> <p>Typically scenarios are from the external user's view, but they could represent the view from another system.</p>  <p>could be developed during:  Formulation helps identify:  Test Double</p> <div>  </div> <div>  1.0 </div>