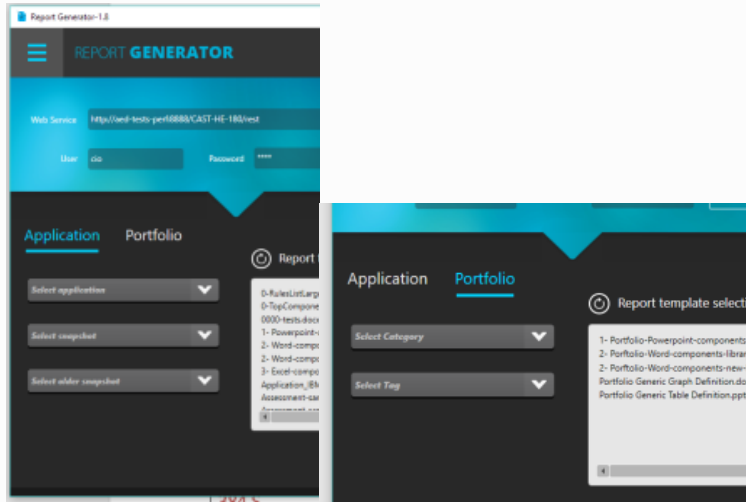


# Graph components for Report Generator 1.19.0

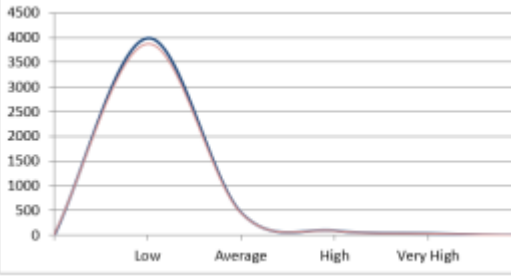


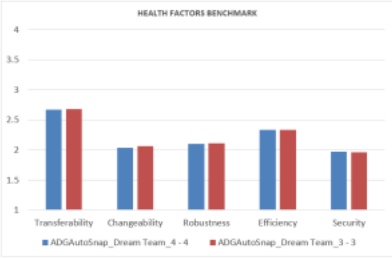
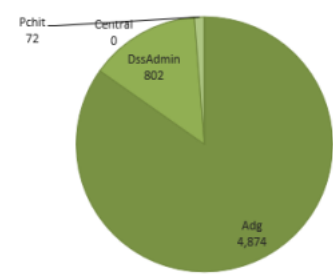
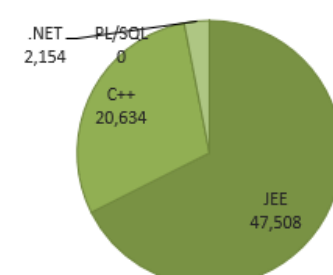
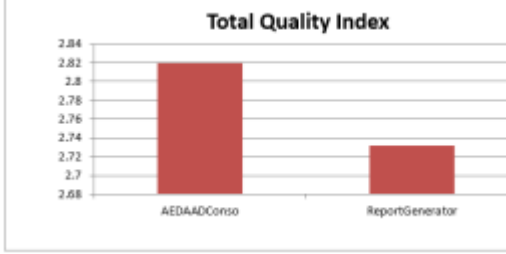
- The **Constraint** column shows whether the component will retrieve data for an "engineering" (AED) or "analytics" domain (AAD), and whether an extension needs to be installed in order to generate results (and if we need a specific version or RestAPI). The CAST-RestAPI version indicated is the minimal version of the RESTAPI needed by this component.
- Due to backward compatibility, some components can have two different IDs, but the result will be the same.
- The **Mode** column shows whether the component is targeted at an **Application** or a **Portfolio** or an **Application** - the relevant option should be chosen in Report Generator (see image below). CAST recommends always selecting an Application when the target domain is "engineering" and when using Application mode, as it will avoid empty results (this is because in an "analytics" domain, violations and components does not exist for an application).



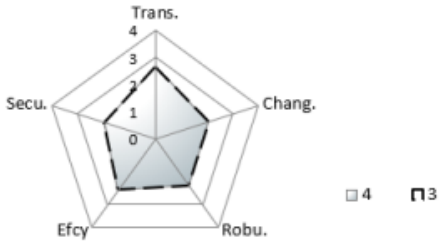
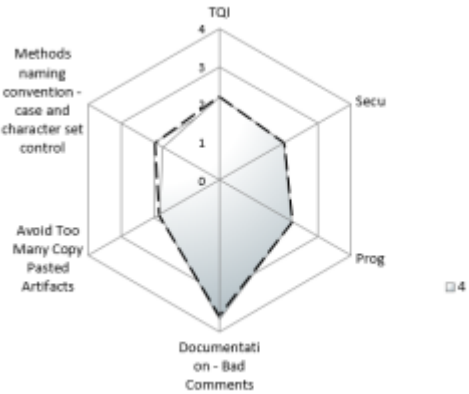
Component Id	Description	Mode	Constraints	Parameters	Configuration sample	Output	Result sample
BUBBLE	Technical debt, TQI and Number of code lines.	Application	CAST-RestAPI 1.8.0	<ul style="list-style-type: none"> <li>M=the module id</li> </ul>	GRAPH;BUBBLE GRAPH;BUBBLE; M=1241	<p>If no module selected, result is for the application.</p> <p>If a module is selected, result is for the module.</p> <p>X axis is for TQI score, Y axis is for Technical Debt, and bubble's size is the Number of kLoc</p>	

<p>CAST_COMPLEXITY</p>	<p>CAST provides a distribution of objects based on several distributions:</p> <ul style="list-style-type: none"> <li>• Algorithm Complexity (based on Cyclomatic complexity)</li> <li>• SQL Complexity</li> <li>• Coupling (Fan in, Fan out)</li> <li>• Ratio of documentation</li> <li>• Size of components</li> </ul>	<p>Application</p>	<p>This component is only relevant on an engineering database</p> <p>CAST-RestAPI 1.8.0</p>	<p>None</p>	<p>GRAPH; CAST_COMPLEXITY</p>	<p>2 distribution curves for each of selected snapshot (current, previous).</p> <p>X axis is the list of categories (low, average, high, very high). A category correspond to an interval of values of cast complexity calculated for the object</p> <p>Y axis is the number of objects in the categories</p>	<p>The graph displays two overlapping distribution curves. The Y-axis is labeled from 0 to 6000 in increments of 1000. The X-axis is labeled with four categories: Low, Average, High, and Very High. The primary curve peaks at approximately 4800 at the 'Low' category. A secondary, smaller curve peaks at approximately 1000 at the 'High' category. Both curves show a sharp decline towards the 'Average' and 'Very High' categories.</p>
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<p>CAST_DISTRIBUTION</p>	<p>CAST provides a distribution of objects based on the chosen distribution.</p>	<p>Application</p>	<p>This graph is relevant only on engineering databases, it is empty on analytics databases.</p> <p>CAST-RestAPI 1.8.0</p>	<ul style="list-style-type: none"> <li>• PAR=distribution id (by default 65501, and in this case this is the same graph than CAST_COMPLEXITY)</li> </ul> <p>List of distributions :</p> <ul style="list-style-type: none"> <li>• 65105 : Size Distribution</li> <li>• 65350 : Coupling distribution</li> <li>• 65501 : Cyclomatic complexity distribution</li> <li>• 65601 : 4GL complexity distribution</li> <li>• 65701 : OO complexity distribution</li> <li>• 65801 : SQL complexity distribution</li> <li>• 66010 : Reuse by call distribution</li> <li>• 66015 : Class complexity distribution (WMC)</li> <li>• 66020 : Class Fan-Out distribution</li> <li>• 66021 : Class Fan-In distribution</li> <li>• 67001 : Cost complexity distribution</li> <li>• 67020 : distribution of violations to critical diagnostic-based metrics per cost complexity</li> <li>• 67030 : distribution of defects to critical diagnostic-based metrics per cost complexity</li> </ul>	<p>GRAPH; CAST_DISTRIBUTION;PAR=65501</p>	<p>2 distribution curves for each of selected snapshot (current, previous).</p> <p>X axis is the list of categories (low, average, high, very high). A category correspond to an interval of values of cast complexity calculated for the object</p> <p>Y axis is the number of objects in the categories</p>	
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<p>GENERIC_GRAPH</p>	<p>A Graph component is built based on a table structure. The idea is to fill data into the table of the graph to populate it automatically</p>	<p>Application</p>	<p>The selection of metrics by standard quality tag name should only be used for an application where the extension "Quality Standards Support" is installed. If not, no metrics will be selected and graph will be empty</p> <p>CAST-RestAPI 1.8.0</p> <p>Quality Standard Mapping Extension</p>	<p>COL1=A, COL11=B, ROW1=C, ROW11=D, A=a,B=b,C=c d, D=e f g</p> <p>where A,B,C and D are one of the axis above</p> <p>and a, b, c, d, e, f, g is one or multiple tags of the axis</p> <p>See more information in section about Generic components (<a href="#">Generic components in Report Generator 1.19.0</a>)</p>	<p>GRAPH; GENERIC_GRAPH; COL1=SNAPSHOT, ROW1=METRICS, METRICS=HEALTH_FACTOR, SNAPSHOT=CURRENT PREVIOUS</p>	<p>Depends on the selection.</p> <p>See more information in section about Generic Components (<a href="#">Generic components in Report Generator 1.19.0</a>)</p>	 <table border="1"> <caption>HEALTH FACTORS BENCHMARK</caption> <thead> <tr> <th>Category</th> <th>ADGAutoSnap_Dream Team_4-4</th> <th>ADGAutoSnap_Dream Team_3-3</th> </tr> </thead> <tbody> <tr> <td>Transferability</td> <td>~2.6</td> <td>~2.7</td> </tr> <tr> <td>Changeability</td> <td>~2.1</td> <td>~2.1</td> </tr> <tr> <td>Robustness</td> <td>~2.2</td> <td>~2.2</td> </tr> <tr> <td>Efficiency</td> <td>~2.4</td> <td>~2.4</td> </tr> <tr> <td>Security</td> <td>~2.0</td> <td>~2.0</td> </tr> </tbody> </table>	Category	ADGAutoSnap_Dream Team_4-4	ADGAutoSnap_Dream Team_3-3	Transferability	~2.6	~2.7	Changeability	~2.1	~2.1	Robustness	~2.2	~2.2	Efficiency	~2.4	~2.4	Security	~2.0	~2.0
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<p>MODULES_ARTIFACTS</p>	<p>A pie that represent the modules with their number of artifacts</p>	<p>Application</p>	<p>CAST-RestAPI 1.8.0</p>	<ul style="list-style-type: none"> <li>COUNT=N, where N represent the number of modules to display (they are sorted by number of artifacts desc). Take all modules if not populated</li> </ul>	<p>GRAPH; MODULES_ARTIFACTS</p>	<p>Number of artifacts (from metric 10152) by modules</p>	 <table border="1"> <caption>Artifacts by Module</caption> <thead> <tr> <th>Module</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>Adg</td> <td>4,874</td> </tr> <tr> <td>DssAdmin</td> <td>802</td> </tr> <tr> <td>Pchit</td> <td>72</td> </tr> <tr> <td>Central</td> <td>0</td> </tr> </tbody> </table>	Module	Count	Adg	4,874	DssAdmin	802	Pchit	72	Central	0								
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<p>TECHNO_LOC</p>	<p>Distribution of technologies by lines of code</p>	<p>Application</p>	<p>CAST-RestAPI 1.8.0</p>	<ul style="list-style-type: none"> <li>COUNT=N where N is the shown technologies count (default value=5)</li> </ul>	<p>GRAPH; TECHNO_LOC</p>	<p>Number of code lines by technologies</p>	 <table border="1"> <caption>Code Lines by Technology</caption> <thead> <tr> <th>Technology</th> <th>Count</th> </tr> </thead> <tbody> <tr> <td>JEE</td> <td>47,508</td> </tr> <tr> <td>C++</td> <td>20,634</td> </tr> <tr> <td>.NET</td> <td>2,154</td> </tr> <tr> <td>PL/SQL</td> <td>0</td> </tr> </tbody> </table>	Technology	Count	JEE	47,508	C++	20,634	.NET	2,154	PL/SQL	0								
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PF_TREND_CRIT_VIOL	Critical Violations Trending Progression	Portfolio	X axis is based on the last 6 previous quarter starting from today  CAST-RestAPI 1.8.0	<ul style="list-style-type: none"> <li>BCID=N (where N is an health factor (by default 60017))</li> </ul>	GRAPH; PF_TREND_CRIT_VIOL; BCID=60017	Critical violations added and removed during the 6 last previous quarter	<table border="1"> <caption>Critical Violations Trending Progression</caption> <thead> <tr> <th>Quarter</th> <th>Critical Violations - Removed</th> <th>Critical Violations - Added</th> </tr> </thead> <tbody> <tr> <td>2017 Q3</td> <td>0</td> <td>0</td> </tr> <tr> <td>2017 Q4</td> <td>0</td> <td>0</td> </tr> <tr> <td>2018 Q1</td> <td>~50</td> <td>~100</td> </tr> <tr> <td>2018 Q2</td> <td>~50</td> <td>0</td> </tr> <tr> <td>2018 Q3</td> <td>0</td> <td>~480</td> </tr> <tr> <td>2018 Q4</td> <td>0</td> <td>~50</td> </tr> </tbody> </table>	Quarter	Critical Violations - Removed	Critical Violations - Added	2017 Q3	0	0	2017 Q4	0	0	2018 Q1	~50	~100	2018 Q2	~50	0	2018 Q3	0	~480	2018 Q4	0	~50
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PF_QS_BY_CVLOC	TQI by critical violations / LOC by AFP	Portfolio	Only working with Powerpoint 2013, after report generated, need to edit data in excel to get label of applications updated into the graph (A and B if not instead of application names)  CAST-RestAPI 1.8.0	None	GRAPH; PF_QS_BY_CVLOC	Bubble = application, Size of bubble = AFP																						
RADAR_COMPLIANCE_2_LAST_SNAPSHOTS	Compliance Radar	Application	CAST-RestAPI 1.8.0	None	GRAPH; RADAR_COMPLIANCE_2_LAST_SNAPSHOTS	Score of compliance business criterion for application																						

<p>RADAR_HEALTH_FACTOR_2_LAST_SNAPSHOTS</p> <p>or</p> <p>RADAR_HEALTH_FACTOR_2_SNAPSHOTS</p>	<p>Health Factors radar</p>	<p>Application</p>	<p>CAST-RestAPI 1.8.0</p>	<p>None</p>	<p>GRAPH; RADAR_HEALTH_FACTOR_2_LAST_SNAPSHOTS</p>	<p>Score of health factors for application</p>	
<p>RADAR_METRIC_ID</p>	<p>Generic radar</p>	<p>Application</p>	<p>CAST-RestAPI 1.8.0</p>	<ul style="list-style-type: none"> <li>ID=list of metric id (BC, TC or QR) separated by ' ', for example ID=ID=6017 60016 6031 61007 7156 3566</li> <li>SNAPSHOT=CURRENT or PREVIOUS or BOTH</li> </ul>	<p>GRAPH; RADAR_METRIC_ID; ID=60017 60016 6031 61007 7156 3566, SNAPSHOT=BOTH</p>	<p>Customizable radar</p>	

TRANSACTION S_CHART	Transactions risk index Bar chart	Applicati on	CAST-RestAPI 1.8.0	<ul style="list-style-type: none"> <li>• SNAPSHOT=CURRENT or PREVIOUS, current by default</li> <li>• COUNT: to restrict the list of transactions, -1 for all transactions, by default 20.</li> <li>• FILTER=SECU or EFF or ROB to sort the transactions, ROB by default</li> <li>• NAME=FULL or SHORT to display transactions by their short name or full name, SHORT by default</li> </ul> <p>All options are optional (default values are taken if no option)</p> <p>The transactions are sorted by max pri for filtering BC, so when you take only part of transaction (by default 20), these are the 20 transactions that have the max pri for filtering BC (by default robustness) that will be displayed.</p>	<p>Display the transaction risk index chart sorted by Robustness TRI for 20 transactions identified by their short names for current snapshot : GRAPH; TRANSACTIONS_CHART;</p> <p>Display 50 transactions identified by their full names ordered by Security Tri, for previous snapshot : GRAPH; TRANSACTIONS_CHART; COUNT=50, NAME=FULL, FILTER=SECU, SNAPSHOT=PREVIOUS</p>	<p>Bars represents the Tri for the Security, Efficiency and Robustness, for each transactions order by max Tri from filter BC</p>	<table border="1"> <caption>TRANSACTIONS Data</caption> <thead> <tr> <th>Transaction</th> <th>Security (Red)</th> <th>Efficiency (Blue)</th> </tr> </thead> <tbody> <tr><td>HammerHead</td><td>1400</td><td>1200</td></tr> <tr><td>LessonSource</td><td>1000</td><td>800</td></tr> <tr><td>Catcher</td><td>900</td><td>700</td></tr> <tr><td>btnPlaceOrder_Click</td><td>500</td><td>400</td></tr> <tr><td>Page_Load</td><td>400</td><td>300</td></tr> <tr><td>main.jsp</td><td>300</td><td>200</td></tr> <tr><td>lessoninfo.mvc/</td><td>200</td><td>100</td></tr> <tr><td>Page_Load</td><td>150</td><td>100</td></tr> <tr><td>#reset-btn/click</td><td>100</td><td>50</td></tr> <tr><td>#show-php-btn/click</td><td>100</td><td>50</td></tr> <tr><td>ready/togr</td><td>100</td><td>50</td></tr> <tr><td>.btn-togr</td><td>100</td><td>50</td></tr> </tbody> </table>	Transaction	Security (Red)	Efficiency (Blue)	HammerHead	1400	1200	LessonSource	1000	800	Catcher	900	700	btnPlaceOrder_Click	500	400	Page_Load	400	300	main.jsp	300	200	lessoninfo.mvc/	200	100	Page_Load	150	100	#reset-btn/click	100	50	#show-php-btn/click	100	50	ready/togr	100	50	.btn-togr	100	50
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TREND_COMPLIANCE	Compliance trending	Application	CAST-RestAPI 1.8.0	<ul style="list-style-type: none"> <li>• ZOOM: if text "ZOOM" is present in options, it indicates that the min border value of the graph is the floor of the min value of the graph and the top border value is the ceiling of the max value (by default : min = 1 and max = 4)</li> </ul>	GRAPH; TREND_COMPLIANCE;ZOOM	Lines represent the evolution of compliance BC for application following snapshots	
TREND_HEALTH_FACTOR	Health factors trending	Application	CAST-RestAPI 1.8.0	<ul style="list-style-type: none"> <li>• ZOOM=N.N (added value to the max value of the graph as superior border and removed value to the min value of the graph as inferior border ; no zoom by default)</li> </ul>	GRAPH; TREND_HEALTH_FACTOR; ZOOM=0.2	Lines represent the evolution of health factors for application following snapshots	
TREND_METRIC_ID	Generic trending	Application	CAST-RestAPI 1.8.0	<ul style="list-style-type: none"> <li>• QID=60017 660317 126 : list BC, TC or QR metric id separated by   (max 10)</li> <li>• Or SID=10151 67211 : list of sizing measures id separated by   (max 10)</li> <li>• Or BID=66061 66062 : list of background facts id separated by   (max 10)</li> </ul>	GRAPH; TREND_METRIC_ID;	Lines represent the evolution of the selected metrics for application following snapshots	



TREND_TECH_DEBT	Technical debt trending progression	Application	CAST-RestAPI 1.8.0	None	GRAPH; TREND_TECH_DEBT	Line represent the debt, bars debt added and removed during the snapshots for application	<table border="1"> <caption>Technical Debt Progression Data (Estimated)</caption> <thead> <tr> <th>Snapshot</th> <th>Debt Added (%)</th> <th>Debt Removed (%)</th> <th>Total Debt (%)</th> </tr> </thead> <tbody> <tr> <td>1/1/2013</td> <td>~95</td> <td>0</td> <td>~65</td> </tr> <tr> <td>5/15/2013</td> <td>~50</td> <td>~40</td> <td>~68</td> </tr> <tr> <td>9/15/2013</td> <td>~35</td> <td>~50</td> <td>~70</td> </tr> </tbody> </table>	Snapshot	Debt Added (%)	Debt Removed (%)	Total Debt (%)	1/1/2013	~95	0	~65	5/15/2013	~50	~40	~68	9/15/2013	~35	~50	~70												
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PF_TREND_TECH_DEBT	Technical debt trending progression	Portfolio	X axis is based on the last 6 previous quarter starting from today  CAST-RestAPI 1.8.0	None	GRAPH; PF_TREND_TECH_DEBT	Debt added and removed during the 6 last previous quarters	<table border="1"> <caption>Debt Added and Removed Data (Estimated)</caption> <thead> <tr> <th>Quarter</th> <th>Debt Added (\$)</th> <th>Debt Removed (\$)</th> <th>Total Debt (\$)</th> </tr> </thead> <tbody> <tr> <td>2017 Q3</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>2017 Q4</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>2018 Q1</td> <td>~380,000</td> <td>~30,000</td> <td>~350,000</td> </tr> <tr> <td>2018 Q2</td> <td>~150,000</td> <td>~20,000</td> <td>~130,000</td> </tr> <tr> <td>2018 Q3</td> <td>~380,000</td> <td>~20,000</td> <td>~360,000</td> </tr> <tr> <td>2018 Q4</td> <td>~50,000</td> <td>~10,000</td> <td>~40,000</td> </tr> </tbody> </table>	Quarter	Debt Added (\$)	Debt Removed (\$)	Total Debt (\$)	2017 Q3	0	0	0	2017 Q4	0	0	0	2018 Q1	~380,000	~30,000	~350,000	2018 Q2	~150,000	~20,000	~130,000	2018 Q3	~380,000	~20,000	~360,000	2018 Q4	~50,000	~10,000	~40,000
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