

Specification of Competency Standards
for the Information & Communications Technology Industry
Unit of Competency

Functional Area - Data Science

Title	Design customised data visualisation tools based on the business requirements
Code	111150L6
Range	This UoC involves designing customised data visualisation tools (if ready-made solutions/tools are not enough) based on the final business purpose (such as, what data for visualization? what decision to be made?) of the organisation.
Level	6
Credit	3 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand the practices of data visualisation processes, customised data visualisation tools throughout its lifetime through the internal (and external) data streams of an enterprise</p> <ul style="list-style-type: none"> • know the data visualisation being a comprehensive set of concepts, procedures, practices, processes, and a number of systems that allow for an organization to give the business insight through the visual data representations • know a wide range of core data visualisation techniques, their advantages, disadvantages and areas of application in different dimensions (See Remark 1) • know different development technologies for data visualisation (See Remark 2) • know the necessity of the visual data representations, data visualisation tools, relevant objectives, time and resource requirements <p>2. Plan and develop the right customised data visualisation tools to fill the gap between the data visualisation requirements and the data visualisation tools from existing markets</p> <ul style="list-style-type: none"> • select the appropriate design tools, programming language and environment and development packages/libraries (See Remark 3) for building the customised data visualisation tools • design and develop the right customised data visualisation tools to fill the gap between the data visualisation requirements and the outsourced data visualisation tools from existing markets • test the customised data visualisation tools <p>3. Evaluate the developed customised data visualisation tools with the integration of existing ones based on the required business insights</p>
Assessment Criteria	<p>The integrated outcome requirement of this UoC are the abilities to:</p> <ul style="list-style-type: none"> • design and develop right visual data representations using right customised data visualisation tools which are not available from the existing markets in order to meet the required business insights for the organisation • evaluate the developed customised data visualisation tools with the integration of existing ones based on the required business insights.
Remark	<p>1. Data dimensions:</p> <ul style="list-style-type: none"> • traditional vs. emerging data • structured vs. unstructured data <p>2. The development technologies for data visualisation include (but not limited to) computer graphics, UX design, ergonomic design, statistical knowledge, programming, etc.</p> <p>3. The design tools include (but not limited to) Spyder (Python), Jupyter Notebook (Python), RStudio (R). The programming language and environment include (but not limited to) R (data</p>

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	analysis), Python (data analysis), javascript (web), Java (general), C++ (general), etc. The development packages/libraries include (but not limited to) Matplotlib (Python), Ggplot (Python)/Ggplot2 (R), Leaflet (R, Javascript), D3.js (Javascript), Chart.js (Javascript), Google Chart Tools (API), Microsoft Power BI (API)
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