

Unit 3 Data Analytics – 2024
Outcome 1 Data analytics – Template for developing an assessment task – Blank

Unit 3 Data Analytics – 2024 Outcome 1 Data analytics – Template for developing an assessment task – Blank			Assessment task development
Outcome 1			
On completion of this unit the student should be able to respond to teacher-provided solution requirements and designs to extract data from large repositories, manipulate and cleanse data and apply a range of functions to develop software solutions to present findings.			
Key knowledge	Key skills	VCAA Performance descriptors (Very high)	
<ul style="list-style-type: none"> • methods for documenting a problem, need or opportunity • methods for determining solution requirements, constraints and scope • design tools for representing databases, spreadsheets and data visualisations, including data dictionaries, tables, charts, input forms, queries and reports • design principles that influence the functionality and appearance of databases, spreadsheets and data visualisations 	<ul style="list-style-type: none"> • interpret solution requirements and designs to develop data visualisations 	<ul style="list-style-type: none"> • All solution requirements and designs are interpreted accurately in developing the database, spreadsheet and data visualisation solutions. 	
<ul style="list-style-type: none"> • reasons why organisations acquire data • techniques for efficient and effective data collection, including methods to collect census, Geographic Information System (GIS) data, sensor, social media and weather • factors influencing the integrity of data, including accuracy, authenticity, correctness, reasonableness, relevance and timeliness • sources of, and methods and techniques for, acquiring authentic data stored in large repositories 	<ul style="list-style-type: none"> • identify, select and extract relevant data from large repositories 	<ul style="list-style-type: none"> • All relevant data is identified, selected and extracted from appropriate data repositories and referenced to acknowledge intellectual property. 	
<ul style="list-style-type: none"> • methods for referencing primary and secondary sources, including American Psychological Association (APA) referencing system 	<ul style="list-style-type: none"> • use a standard referencing system to acknowledge intellectual property 		
<ul style="list-style-type: none"> • characteristics of data types • naming conventions to support efficient use of databases, spreadsheets and data visualisations • a methodology for creating a database structure: identifying entities, defining tables and fields to represent entities; defining relationships by identifying primary key fields and foreign key fields; defining data types and field sizes, normalisation to third normal form • functions and techniques to retrieve required information through querying data sets, including searching, sorting and filtering to identify relationships and patterns • software functions, techniques and procedures to efficiently and effectively validate, manipulate and cleanse data including files, and applying formats and conventions 	<ul style="list-style-type: none"> • organise, manipulate and cleanse data using database and spreadsheet software 	<ul style="list-style-type: none"> • Comprehensive use of features of the database software tool used to store, manipulate and validate data. • Comprehensive use of features of the spreadsheet software tool have been used to manipulate and validate data. 	
<ul style="list-style-type: none"> • types and purposes of data visualisations • formats and conventions applied to data visualisations to improve their effectiveness for intended users, including clarity of message 	<ul style="list-style-type: none"> • select, justify and apply functions, formats and conventions to create effective data visualisations 	<ul style="list-style-type: none"> • Comprehensive use of functions, formats and conventions to create effective data visualisations. • Comprehensive justification and explanation of how the selected functions, formats and conventions are used to create effective data visualisations. 	
<ul style="list-style-type: none"> • methods and techniques for testing databases, spreadsheets and data visualisations 	<ul style="list-style-type: none"> • develop and apply suitable validation and testing techniques to software tools used 	<ul style="list-style-type: none"> • Comprehensive range of test data is expressed in testing tables, with both expected and actual output stated. 	