



BSBXBD404

ASSESSOR GUIDE

Use big data for operational decision making

Assessment 1 of 5

Short Answer Questions

Version 1



Assessment Instructions

Task overview

This assessment task contains nine [9] short answer questions.

Read each question carefully before typing your response in the space provided.



Assessment Information

Submission

You are entitled to three [3] attempts to complete this assessment satisfactorily. Incomplete assessments will not be marked and will count as one of your three attempts.

All questions must be responded to correctly to be assessed as satisfactory for this assessment.

Answers must be typed into the space provided and submitted electronically via the LMS. Hand-written assessments will not be accepted unless previously arranged with your assessor.

Reasonable adjustment

Students may request a reasonable adjustment for assessment tasks.

Reasonable adjustment usually involves varying:

- the processes for conducting the assessment [e.g. allowing additional time]
- the evidence gathering techniques [e.g. oral rather than written questioning, use of a scribe, modifications to equipment]

However, the evidence collected must allow the student to demonstrate all requirements of the unit.

Refer to the Student Handbook or contact your Trainer for further information.



Please consider the environment before printing this assessment.

Question 1

Identify three (3) Australian Privacy Principles (APPs) that relate to accessing and using big data sources and outline the obligations of each.

[Word count: 25 – 45 words for each APP]

Assessor instructions: Students must list three APPs in the answer table. The descriptions provided under the column 'Obligations as it relates to accessing and using big data sources' are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- be within the specified word limit
- reflect the characteristics described in the exemplar answer.

Refer to the 'Guide to Data Analytics and the Australian Privacy Principles' [Long URL: <https://www.oaic.gov.au/privacy/guidance-and-advice?a=3086>] for more information on APPs. This resource is provided to the student as part of the learning related to this unit.

A sample answer is provided below.

Table 1 – Answer table for Question 1

#	Australian Privacy Principle	Obligations as it relates to accessing and using big data sources (25– 45 words)
1	APP 3 – Collection of personal information	Organisations should be mindful to only: <ul style="list-style-type: none"> - collect information by lawful and fair means - collect sensitive information with the individual's consent (unless an exception applies).
2	APP5 – Notification	Organisations should be careful not to use personal information for a purpose other than the primary purpose it was collected for unless an exception applies.
3	APP 11 – Security of personal information	Organisations should actively consider whether they are permitted to retain personal information. When personal information is no longer needed it should be destroyed or de-identified.
	Other answers include: APP10 – Quality of personal information	Organisations should take responsible steps to ensure that personal information: <ul style="list-style-type: none"> - collected is accurate, up-to-date and complete - used or disclosed is having regard to the purpose of the use or disclosure is accurate, up-to-date, complete and relevant.
	APP6 – Using and disclosing personal information	Organisations should carefully consider whether the uses and disclosures of personal information for data analytics activities are compatible with the original purpose of collection (particularly when the information is collected directly from a third party).
	APP7 – Direct marketing	Organisations should have a good understanding of how they use data analytics for direct marketing, and if this includes facilitating other organisations' direct marketing, they need to comply with additional obligations including the Spam Act 2003 or the Do Not Call Register Act 2006.
	APP8 – Quality of personal information	Organisations should take rigorous steps to ensure the personal information collected via creation is accurate, complete and up-to-date by checking that third parties, from which personal information is collected, have implemented appropriate practices, procedures and systems to ensure the quality of personal information.

Question 2

Outline the legislative requirements that apply when accessing and using summaries of big data and datasets from the [Australian Bureau of Statistics \[ABS\]](#).

Use the table given below to record your answers for each criterion:

- Two [2] examples of legislation that ABS complies with.
- Copyright and creative commons license for accessing big datasets and summaries.
- Requirements for attribution when using big datasets and summaries.

[Word count: 40-65 words]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- list two [2] examples of legislation applicable
- state the name of the relevant copyright/creative commons licence
- reflect the characteristics described in the exemplar answer
- be within the specified word limit.

A sample answer is provided below.

Table 2 – Answer table for Question 2

Criterion:	Answers (as relevant to ABS):
Examples of legislation that ABS complies with. <i>(Include two examples)</i>	<ul style="list-style-type: none">Australian Bureau of Statistics Act 1975Privacy Act 1988 <p><u>Other examples include:</u></p> <ul style="list-style-type: none">Census and Statistics Regulation 2016Archives Act 1983Census and Statistics Act 1905 [CSA]
Copyright and creative commons for accessing big data summaries and datasets from ABS. <i>(State the name of the licence)</i>	Creative Commons Attribution 4.0 International Licence.
Outline the requirement for attribution when using big data summaries and datasets from ABS. <i>(Word count 40-65)</i>	Big data summaries and datasets obtained from the ABS website must attribute the work in the manner specified by the ABS. Where ABS has given permission to publish material released under full copyright, the material must also be attributed. Attribution cannot be done in any way that suggests that the ABS endorses an individual/organisation or their use of the material.

Question 3

Outline the use of 'SMART goals' criteria to determine operational decision-making requirements relating to the use of big data.

[Word count: 30-45 words per criteria]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- be within the specified word limit
- reflect the characteristics described in the exemplar answer.

A sample answer is provided below.

Table 3 – Answer table for Question 3

S.M.A.R.T. goals criteria	Answer <i>[30-45 words per criteria]</i>
Specific	<p>Identify</p> <ul style="list-style-type: none"> • who will be making the operational decisions? (stakeholders, managers, supervisors, employees of specific departments etc.) • what specific business problems in specific business areas need to be looked into? <p><u>Other answers may include:</u></p> <ul style="list-style-type: none"> • Determine specific data analysis to be reported on, what specific tools should be used to create the required report/visualisation formats and whether there are preferred visualisation standards or branding guidelines that need to be followed.
Measurable	<ul style="list-style-type: none"> • Define what data will be used to measure the improvement in each business area of the analysis and how it will be determined if specific goals are achieved or not. <p><u>Other answers may include:</u></p> <ul style="list-style-type: none"> • Identify methods of collecting data around these specific measures to track progress in each business area.
Achievable or action-oriented	<ul style="list-style-type: none"> • Ensure that the goals set are realistic and achievable. • Identify the necessary steps to achieve the required goals. • Identify any external or internal factors that might prevent the team from achieving the goals. <p><u>Other answers may include:</u></p> <ul style="list-style-type: none"> • Identifying the results that need to be measured. • Identifying actions that need to be taken to achieve the goals
Relevant	<ul style="list-style-type: none"> • Identify whether the datasets captured have the relevant information for operational decision-making. • Are the identified measures relevant for each business area and does it really help to identify the level of improvement in business operations?
Time-bound / timeliness	<ul style="list-style-type: none"> • The time period where data from operations are collected. • Timeline for collecting, analysing the data collected and generating reports. • Timelines for deciding how to react to the data and information from the reports. <p><u>Other answers may include:</u></p> <ul style="list-style-type: none"> • Assess whether the goals are achievable in the given time frame. • What is the longest and shortest possible time to achieve this goal? • When and how the progress can be checked for each business area. • Frequency of the reports or additional summary data being included in the analysis as it becomes available (at certain points in time, weekly, quarterly etc.)

Question 4

Outline how dashboards are used for presenting big data analytics.

[Word count: 30-55 words]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- be within the specified word limit
- reflect the characteristics described in the exemplar answer.

A sample answer is provided below.

Dashboards are interactive pages that use visualisations to tell a story about the underlying data. Because these are limited to only **one page** (per context), they must be well-designed and should only contain the most important elements/metrics of the data story. Dashboards leverage operational data primarily in the form of metrics and KPIs.

Other answers may include:

Dashboards help organisations to expand their ability to collect and aggregate increased volumes of data and provide the audience with the most up-to-date information on a variety of business performance metrics.

Question 5

Outline the statistical tools used for presenting big data analytics for each category.

[Word count: 25 - 45 words for each category]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- be within the specified word limit
- reflect the characteristics described in the exemplar answer.

A sample answer is provided below.

Table 4 - Answer table for Question 5

Category:	Answer: (25 - 45 words)
Measures of location	These provide estimates of a single value that in some way represents where the data is centered. Several statistical measures that characterise this include: <ul style="list-style-type: none"> • Mean • Median • Mode • Midrange • Outliers
Measures of dispersion	These provide estimations that relate to the degree of variation in the data. Several statistical measures that characterise dispersion include: <ul style="list-style-type: none"> • Range • Interquartile Range (IQR) • Variance • Standard deviation
Measures of shape	These help to describe the distribution or pattern of the data within a dataset either as symmetrical or asymmetrical. Several statistical measures that characterise the shape of data include: <ul style="list-style-type: none"> • Skewness – may be positively or negatively skewed. • Kurtosis – indicates whether the distribution is taller or thinner.

Question 6

Explain the role of 'domain knowledge of business processes' as it relates to using big datasets for operational decision-making.

[Word count: 35 - 60 words]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- be within the specified word limit
- reflect the characteristics described in the exemplar answer.

A sample answer is provided below.

Domain knowledge of business processes is required to better understand the relevance of the big datasets for the analysis, derive meaningful insights and produce the required reports that help businesses make operational decisions. The lack of domain knowledge makes it difficult for an analyst to apply the right data analysis methods and to accurately evaluate the performance of the results.

Other answers may include:

Domain knowledge of business processes helps to:

- understand the context of the data
- identify the most relevant data for the analysis
- interpret the results, validate the accuracy of the results
- make informed decisions based on the analysis.

Question 7

Outline three (3) ways you can obtain the domain knowledge required for understanding an organisation's business processes.

[Word count: 25 - 45 words]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- be within the specified word limit
- reflect the characteristics described in the exemplar answer.

A sample answer is provided below.

- Asking questions from subject matter experts, employees and other staff who undertakes business operations.
- Referring to a variety of organisational documentation. Such as policies, procedures, business process documents, workflow diagrams.
- Observing business operations and work processes carried out by employees.

Other answers may include:

- Investigating the sample datasets and reports generated by the organisation's day to day operations.
- Building test reports (slicing and dicing) using the available dataset to understand what other information can be obtained from the dataset.
- Attending industry conferences and seminars, on-the-job training, mentoring etc.

Question 8

Outline three [3] tasks relevant to the procedure of combining external big data sources, such as social media, with in-house big data sets.

[Word count: 15 – 30 words for each task]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- list three [3] tasks relevant to the procedure
- outline each task within the specified word limit
- reflect the characteristics described in the exemplar answer.

A sample answer is provided below.

Table 5 - Answer table for Question 8

Procedure tasks:	Answer: <i>(15 - 30 words for each procedure)</i>
1. Data cleaning	This involves removing any errors, inconsistencies or duplicates in the data obtained from external sources.
2. Data formatting	This involves ensuring that the data is in a consistent format required for the analysis. The procedures involve standardising the data types, units of measure and data structures.
3. Data organising	This involves categorising the data into a logical structure that can easily be analysed. This may involve creating a data model or schema that defines relationships between different data elements.
	Other answers may include:
Data merging	This involves combining the data from external sources with in-house big data and may involve the use of data integration tools.
Verify data quality	This involves checking the quality of the merged/combined data against metrics such as accuracy, completeness and consistency.
Storing the data	This involves storing the cleaned and merged data in a central repository such as a data warehouse or data lake.

Question 9

Outline four [4] steps relevant to the procedure of integrating big data analytics into the operational workflow of a business.

[Word count: 25 – 35 words for each step]

Assessor instructions: Student responses are likely to include different wording than the sample answer provided. However, the acceptable responses must:

- list the four [4] steps relevant to the procedure
- outline each step within the specified word limit
- reflect the characteristics described in the exemplar answer.

A sample answer is provided below.

Table 6 – Answer table for Question 9

Procedure steps:	Answer: <i>(25 – 35 words for each procedure)</i>
1. Source and configure data capture	This involves: <ul style="list-style-type: none"> - sourcing the required data - implementing processes to capture data from workflows relevant to the business operations being analysed - storing the data in a repository for easy and secure access
2. Identify key measures and metrics	This involves identifying the key metrics required for the analysis that will help analyse and monitor <ul style="list-style-type: none"> - insights from the data - results of the operational decisions - the progress of the business operations and processes
3. Analysis for operational insights	This involves analysing the data to obtain insights relevant to specific operational decisions. An example of a type of analysis performed is a what-if scenario analysis. This helps to evaluate outcomes against different parameters.
4. Utilise insights for action	This step involves applying the insights from the analysis to make operational decisions. This involves building capabilities into dashboards and monitoring systems to ensure the desired results are achieved by data-driven decisions.

Assessment checklist:

Students must have completed all questions within this assessment before submitting. This includes:

1	Nine [9] short answer questions completed in the spaces provided.	<input type="checkbox"/>
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Congratulations you have reached the end of Assessment [1]!

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