Government of **Western Australia**
North Metropolitan **TAFE**

Assessment Tool

Qualification national code and title	ICT50220-SS-A Applied Data Analysis Skillset
Unit/s national code/s and title/s	ICTPRG431 Apply query language in relational databases ICTDAT401 Evaluate organisational compliance with data ethics legislation ICTDAT402 Clean and verify data

Assessment type (☑):

☐   Questioning (Oral/Written)
☐   Practical Demonstration
☐   3rd Party Report
☒   Other – Project/Portfolio *(please specify)*

Portfolio (POR2) Assessment

Assessment Resources:

Marking key available for lecturer via Blackboard.
Students may refer to the lecture material in formulating their answers.

Assessment Instructions:

Students must attempt all questions. Answer succinctly using full sentences. At most three paragraphs are expected per answer.
*You **can** discuss with others but all answers must be at the student's own words – copying generated code or answers from ChatGPT or other AI tools is **strictly** prohibited.*

Folder location: [insert filename and path of storage folder location]   Current Version [of this template] V1.0 – 19-10-2016

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Scenario: sharing data with a business partner

You work as a data analyst for a large real estate agency in Perth (turnover > 3 million per annum). The agency partners with a home staging company (a company that furnishes homes to make them more presentable for sale). The partner has requested your internal sales data from the last 24 months so that they can demonstrate to their customers that furnished houses sell quicker and for more than houses that are unfurnished. The partner presents an important source of revenue to the company, so management is keen for you to comply with the request.

You are concerned.

Would providing the data be a breach the law? The APP? Is it ethical?
Your manager reassures you: "most of this data is publicly available on Landgate anyway."

Q 01. Identify 2-3 relevant policies and procedures at the state and industry level (REIA) and briefly summarize their applicability.

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Relevant Policies and Procedures (State & REIA) – Based on APP Compliance

1. REIA National Code of Conduct

This industry-level guideline mandates that real estate brokers handle customer data responsibly and sets forth ethical requirements for them. It guarantees that consumer data is exclusively used for the stated purpose, such as tenancy agreements or property marketing, and is in compliance with APP 6 (Use and Disclosure of Personal Information).

2. WA Real Estate and Business Agents Act 1978

This law establishes legal standards for record-keeping, licensing, and consumer protection at the state level. By guaranteeing that agencies safely keep client identities, contracts, and financial information to avoid unwanted access, it promotes APP 11 (Security of Personal Information).

3. REIA Privacy Policy Guidelines

In accordance with APP 1 (Open and Transparent Management of Personal Information), these industry standards assist agencies in putting in place privacy policies, including as consent procedures, privacy statements, and complaint resolution procedures.

Q 02. To what extent does the public availability of at least some of the data inform your decision to release the data?

The public availability of certain data, like property titles and sales data via Landgate and/or data.wa.gov.au, in Western Australia's real estate industry informs but does not dictate data release decisions. We must nevertheless adhere to the Australian Privacy Principles (APPs), especially with relation to the use and dissemination of personal information, even while publicly accessible data promotes openness and market efficiency.

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Releasing more or combined datasets necessitates evaluating any privacy threats and implementing de-identification procedures, even if the data is publicly available. Decisions about data release thus weigh the public interest, openness, and adherence to privacy requirements under national and state laws.

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Q 03.   List at least three things you want to know about the data and its collection to determine if it can be released to the partner? (Assume your company's privacy policy mirrors this one: https://www.raywhite.com/privacy/)

Before authorizing release, I should know the following three important questions regarding the data and how it was collected:

Which identifiers are part of this?

Are there names, contact information, owner identifiers, or other personally identifiable information in the records that might be used for re-identification?

How did the legal basis or consent get established?

Was there a legitimate legal exemption under the Australian Privacy Principles, or did the individuals consent to sharing their data with third parties?

What changes or precautions are implemented?

Has the information been de-identified, anonymized, or aggregated? What safeguards are in place to stop re-identification after release?

Q 04.   To what extent do the partner's data retention policies influence your legal and ethical responsibility?

Legal and ethical obligations in Western Australia's real estate industry are greatly impacted by the partner's data retention rules. Data must only be kept for as long as is required for its intended use, in accordance with the Australian Privacy Principles (APP 11) and business privacy policies that follow Landgate guidelines. Both parties may face ethical and compliance issues if a partner keeps data longer or uses it differently than agreed upon.

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We must thus confirm that the partner's retention policies comply with legal requirements, incorporate safe disposal practices, and protect people's personal information from abuse, unauthorized access, or needless long-term keeping before exchanging data.

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Leveraging your expertise in Power BI, Power Query, and DAX, you efficiently transform and load a CSV file into Power BI from the company's data sources. The main columns in the dataset include:

ADDRESS
SUBURB
PRICE_SOLD   //Price blank if not sold
BEDROOMS
BATHROOMS
GARAGE
LAND_AREA
FLOOR_AREA
BUILD_YEAR
AGENT_NAME
AGENT_NUM   // phone number of the agent, also used as a unique identifier
CLIENT_NAME
CLIENT_EMAIL
IS_FURNISHED
LISTED_DATE
OFFER_DATE
SOLD_DATE
BUYER_NAME. //Not always filled in
OFFER_CONDITIONAL //Y or N; Blank if not filled in

Q 05. With the goal of maintaining the privacy of the company's clients and employees, outline at least three steps you could perform using Power Query Editor and DAX formulas to scrub the data (only a high-level answer is expected)

The following high-level data scrubbing procedures can be carried out in Power BI utilizing Power Query Editor and DAX to preserve privacy in accordance with the Australian Privacy Principles (APPs) and WA real estate data standards (such as Landgate):

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1. Take Out or Cover Power Query Personal Identifiers:

Fields such as CLIENT_NAME, CLIENT_EMAIL, AGENT_NAME, and AGENT_NUM should be excluded or anonymized. Use Power Query's Text to substitute hashed values or pseudonyms for Text.Transform function.

Example: Text.Transform([CLIENT_EMAIL], (c) => "*")

2. De-identify Sensitive Records (Power Query & DAX): If the property is unsold or consent isn't verified, delete buyer information (BUYER_NAME) and contact details by adding new columns or using conditional transformations.

Example:

Buyer_Info_Safe = IF(

   NOT(ISBLANK('Sales'[BUYER_NAME])) ||
NOT(ISBLANK('Sales'[CLIENT_EMAIL])),

   "REDACTED",

   BLANK()

)

3. Rounding numeric fields (e.g., PRICE_SOLD, LAND_AREA) to lower the danger of re-identification and using DAX measures to summarize sensitive information, such as displaying average sale prices by suburb rather than individual addresses, are two examples of how to aggregate and generalize data (DAX).

Example:

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Avg_Price_By_Suburb =

AVERAGEX(

  VALUES('RealEstate'[SUBURB]),

  AVERAGE('RealEstate'[PRICE_SOLD])

)

Q 06. The partner's data analyst informs you that they need the customer and agent names and emails to align your data with theirs. How would you handle this request using the features available in Power BI while ensuring data privacy? (high-level answer only)

I would respond to the partner's request by using Power BI privacy-preserving approaches while adhering to the Australian Privacy Principles (APPs), Landgate data standards, and Western Australia's privacy requirements.

In Power BI, through writing DAX formula we can use data masking or pseudonymization by substituting distinct IDs or hashed values (such as Text.Hash) for CLIENT_NAME, CLIENT_EMAIL, and AGENT_NAME.

Limit access using workspace permissions and Power BI Row-Level Security (RLS) to make sure that only authorized users can see identifiable data.

Example:

  Table.TransformColumns(

    #"Sales",

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{{" CLIENT_EMAIL ", each if Text.Contains(_, "@") then "Masked Email" else _, type text}}

)

Q 07.   When a sale is finished, your company often gives a personalized gift to the sellers. As part of this project, you realize that someone has been storing the names, ages, and genders, of children, many under 15. Why is this problem? What steps should you take?

This is a significant privacy concern since it is against the Australian Privacy Principles (APP 3 and APP 6) as well as the ethical and legal requirements of Western Australian privacy standards to gather and retain personal information about children under the age of 15 without the express approval of their parents. For real estate reasons, such information is superfluous and extremely sensitive.

Among the first actions I should erase or securely anonymize the children's data, assessing the methods of acquisition, alerting management and the privacy officer, and revising protocols to guarantee that only pertinent, consent-based data is gathered. Retraining on Landgate and the company's privacy policy compliance should also be provided to staff.