Gymea Technology High School
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9 Computing Technology

Task 4: Datasets and Databases

Due Date: 2 Sept 2025 Week 7A Term 3

Distributed: 11 Aug 2025	**Weighting:** 10%
Task Type: Practical Task	**Unit:** Modelling networks and social connections
Syllabus Outcome/s: ● Acquires, represents, analyses and visualises simple and structured data **CT5-DAT-02** ● Selects and applies safe, secure and responsible practices in the ethical use of data and computing technology **CT5-SAF-01**	

Task Description

Using networks and social networks, users are generating and interacting with data on a daily basis. Understanding the wide range of data that is publicly available and ways this data can be interpreted are key 21st century skills.

Scenario:

Gymea Technology High School has a weather station, monitoring a range of inputs such as temperature, wind speed, rain rate and humidity. At the moment, the data is only available in a raw export as a CSV file. For this task, you will be looking at how we gather data from the Weather Station here at school, building and loading this data into a database, and then accessing, updating and generating reports based on this data, to allow for visual representation of the data and analysis of trends, patterns and relationships.

PART A - Access Database:

You'll be using Microsoft Access to create the database, which will need to show the following:

- A number of entities (tables) with appropriate fields and data types
- Importation of external data
- A form that allows for manual data entry and correction
- Reports to show data, graphs and other visuals for interpreting the data including:
    - Monthly summary showing separate graphs/tables for each below:
        - Max and Min Temperatures displayed as a line graphs
        - Average Humidity for each month displayed as a scatter plot
        - Total Rainfall for each month displayed as a column graph
        - Max Wind Speed for each month displayed in a table
    - Daily summary showing separate graphs/tables for each below:
        - Max and Min Temperature for the selected day displayed as a column graph
        - Pressure readings throughout the day displayed as a line graph
        - Max Wind Speed for the day displayed as metres per second.
- SQL Queries that will be needed to extract the data required for the reports and form.

PART B - Presentation

Using the data and graphs from the Access Database completed in Part A, you need to select **ONE** measurement (max, min, humidity, wind speed etc), showcase the appropriate graph and discuss the trend/relationship between the features that are being shown in the graph selected. Your discussion should follow the PEEL format:

P - Identify the trend or relationship you're showcasing
E - Outline the evidence for this observation by referring back to the graph and data provided
E - Explain how this evidence supports your trend/relationship identified and why
L - Link your concluding statement back to your opening sentence

Glossary of Key Words

These verbs will provide an understanding of the detail needed to successfully complete this task:

- **Construct:** Make; build; put together items or arguments
- **Demonstrate:** Show by example
- **Describe:** Provide characteristics and features
- **Justify:** Support an argument or conclusion
- **Outline:** Sketch in general terms; indicate the main features of

Details of Submission

PART A - Access Database
The database should be created using **Microsoft Access** and saved with the **.accdb** file extension. It should then be submitted on Moodle by the due date.

PART B - Presentation
Your completed presentation (either .PPTX PowerPoint or Google Slides) should be submitted to the task on Moodle by the due date.

Teacher Feedback and Student Self-Reflection

The task will be returned to students within **14 days** of the due date. Information on how to improve will be provided through written teacher feedback and the marking criteria. Students can clarify or seek further feedback by speaking with their teacher.

Upon return of the task and teacher feedback, students will also be expected to complete the following self-reflection form, to provide them with the opportunity to reflect on the strength of their performance, as well as areas that have been identified to strengthen in future tasks - https://forms.gle/Ck4y1jid49x7sKfq7

How does this link to my learning?

This task will allow students to:

- Demonstrates knowledge and skills in using a database program (Microsoft Access) to manage and manipulate data
- Ability to visualise and report on data via a variety of methods including tables, graphs and formalised reports

Assessment Procedures

Students should be fully aware of the School Assessment Procedures for their year group. These were provided at the beginning of the school year and are available off the school website under the Learning menu for each year group.

Marking Criteria

Criteria	0 - 1	2	3	4	5
PART A - Access Database					
Data Transfer	Has made some attempt to transfer data into the database or student has not attempted the task	Data transferred is mostly accurate and entered into some of the appropriate fields & entities	Accurately transferred the data into the appropriate fields & entities in the relational database		
Data Entry Form	Created a data entry form using the automated tool that meets minimal scenario requirements or student has not attempted the task	Created a data entry form using some appropriate design elements that meet part of the scenario requirements	Created a data entry form using appropriate design elements that meet the scenario requirements		
Report	Created a report using the automated tool that meets minimal scenario requirements or student has not attempted the task	Created a report using some appropriate design elements that meet part of the scenario requirements	Created a report using appropriate design elements that meet the scenario requirements	Creates a number of reports to visualise the data in a variety of formats that meet the scenario requirements	Creates all required reports to visualise data using highly appropriate ways that meets all the requirements of the scenario.
Query	Identifies a feature of a query **OR** attempts a query or student has not attempted the task	Constructs a query that shows an understanding of SQL that meets most of the scenario requirements. Includes some features such as field names, tables, relational and logical operators	Constructs a query that shows a sound understanding of SQL. Includes all the features such as field names, tables, relational and logical operators	Constructs multiple queries that show a good sound understanding of SQL. Includes all the features such as field names, tables, relational and logical operators	Constructs multiple queries that show an excellent understanding of SQL including use of ORDER BY and LIMIT clauses. Queries include all other relevant features such as field names, tables, relational and logical operators

Criteria	0 - 1	2	3	4	5
PART B - Presentation					
Presentation	Limited presentation provided with no relation to the data or database evident	Presentation shows a related graph/data set from the database provided	Presentation shows a related graph/data set from the database provided, outlines the trend /relationship in some detail	Presentation shows a related graph/data set from the database provided with basic discussion around the trend /relationship evident	Presentation shows a related graph/data set from the database provided with detailed discussion around the trend /relationship evident
				TOTAL / 21	

Literacy Criteria

Literacy Outcomes	Elementary achievement You have:	Limited achievement You have:	Satisfactory achievement You have:	High achievement You have:	Outstanding achievement You have:
	0	0.25	0.5	0.75	1
Vocabulary *Uses technical vocabulary to explain concepts and/or range of precise and appropriate words for effect*	Very limited response. Few content words used.	Only simple words are used.	Some precise and technical words are used.	Sustained use of precise and technical words.	Sustained, consistent and fluent use of precise and technical words.
Punctuation *Use of correct and appropriate sentence and other punctuation for effect, and to aid in reading of the text*	No evidence of correct sentence punctuation.	Sentence punctuation is correctly used in at least one place - *one sentence is punctuated correctly.*	Some correct sentence level punctuation (at least 50%). May attempt other punctuation where it is required.	Mostly correct sentence level punctuation (80%) and at least two correct examples of other punctuation.	Writing contains accurate use of all applicable punctuation.
Sentences & Cohesion *The intentional construction of a variety of sentences to match purpose and audience, and the control of multiple sentence threads across the whole text.*	No clear evidence of sentences: a list of words OR text fragments.	At least one sentence is used correctly. Some meaning can be construed from the text.	Some correct formation of sentences. Mainly uses simple and compound sentences, but may attempt more complex structures.	Most sentences are correct. Range of sentence types and connectives are evident, but with varied effectiveness.	All sentences are correct, effective and controlled, and include a range of sentence types and connectives (complex sentences and other sophisticated structures)
Paragraphs *Paragraphs are used to effectively structure information and partition events and ideas*	No correct use of paragraphing; may be a block of text or random breaks.	Ideas are separated; paragraphs may contain some unrelated ideas.	At least ONE paragraph is well structured and develops an idea	Writing is organised into paragraphs that assist the reader to digest chunks of the text, but may not be linked or executed effectively.	All components of the paragraphs are evident and paragraphing is consistent and well-developed across the whole text.
Text Structure *Uses features of the appropriate text type*	No evidence of the structural features of the appropriate text type. *No attempt to write in the appropriate text type and/or response is off task.*	Minimal evidence of the structural features - *1 component evident* - of the appropriate text type.	Some evidence of the structural features - *2 components evident* - of the appropriate text type.	Substantial evidence of the structural features - *all components evident but there may be some lapses* - of the appropriate text type.	Coherent and controlled use of **all** the appropriate structural features of the text type.
	Level of response is well below syllabus expectation	Level of response is below syllabus expectation	Level of response is equivalent to syllabus expectation	Level of response is above syllabus expectation	Level of response is well above syllabus expectation

Literacy Total / 5