**Level 2 Database Assessment**

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| **Achieved** | **Merit** | **Excellence** |
| **91892:** Use advanced techniques to develop a database **(4 credits)** | | |
| Use advanced techniques to develop a database. | Use advanced techniques to develop an informed database. | Use advanced techniques to develop a refined database. |

**Introduction/Kupu Arataki**

This assessment activity requires you to design and create a database.

You are going to be assessed on how successfully you use advanced techniques to design, implement and refine your database.

**Task/Hei Mahi**

You are going to design and create a refined database to organise a collection of objects or to explore a dataset.

Advanced techniques that you could use in creating the database include:

* linking data in related tables or nodes using queries or keys
* writing custom queries to filter and/or sort data
* using logical, mathematical and/or wildcard operators
* customising presentation of the data
* using custom forms to add user input to the database
* setting validation rules for data entry.

Either choose a dataset from the material provided in the support files area or source an alternate dataset from <https://www.kaggle.com/>. Note that if you choose to source your own data, you **must** get teacher approval to ensure that the data you have chosen will allow you to achieve this standard.

Your database must:

* allow users to add entries to the database. Each dataset in the support files area includes a tab with extra rows of data that can be added to the database by users.
* ensure that users can’t add obviously incorrect data
* allow users to query the collection and display information that either answers a question or allows users to make decisions

You also need to provide documentation showing:

**Database planning**

Design the structure of the database including a description of the tables and datatypes used. You will need to show how the data in your tables can be linked, so that you can query data from more than one table. You also need to indicate what data might be expected. For example, the value of an item can’t be a negative number and currency should be in dollars.

* Explain the relevant implications. This could include why your outcome:
  + - needs to be socially/culturally acceptable
    - needs to honour legal, ethical and intellectual property and/or privacy obligations
    - needs to be accessible, usable and functional
    - needs to meet end-user considerations
    - needs to be sustainable and future proof

Show how you have addressed the relevant implications

**Testing**

* A screen capture showing that the data entry form works for expected input.
* A screen capture showing the error messages that appear when users attempt to enter invalid data.
* Screen captures showing that the various queries work as expected.
* Screen captures to show how the outcome was tested with end user/s to confirm it meets the purpose and end user considerations.

**Improvement of the database**

* You should improve the database through feedback and cycles of trialling and testing iteratively throughout the design, development and testing process to improve the quality of the database.

Submit evidence of how you have used advanced techniques to develop a database.

The evidence could be in the form of a document that includes screenshots showing the development of the outcome including evidence of designing, developing and testing. This should not be any longer than 5 A4 pages . This could also take the form of a narrated or subtitled video, screen capture or slide show.

You should submit evidence of:

* Planning and design of the database.
* The use of appropriate tools and advanced techniques to structure, organise, and query data logically.
* Printouts of the tables that you have created.
* Evidence of the correct data being displayed on the outcome.
* You must show the data you tested to ensure functionality.
* Iterative improvement throughout the design, development and testing process.
* Presenting data effectively for the purpose and end users.
* Addressing the relevant implications.

Note: Testing can be done by making a brief screencast showing the outcome being comprehensively tested. If desired, you can take screen captures of your screencast and annotate them. This is often easier than trying to screen capture whilst testing where it is easy to ‘forget’ to screen capture a key part of the test. If you prefer, you are welcome to talk us through your testing and simply submit a brief screencast (screencasts should be 3 minutes or less in length).