**NZQA**

**Approved**

Achievement standard: 91368 Version 3

Standard title: Implement advanced procedures to produce a specified digital information outcome with dynamically linked data

Level: 2

Credits: 6

Resource title: Manufacturing database

Resource reference: Digital Technologies VP-2.41 v2

Vocational pathway: Manufacturing and Technology

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| Quality assurance status | These materials have been quality assured by NZQA. NZQA Approved number A-A-02-2015-91368-02-8238 |
| Authenticity of evidence | Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material.Using this assessment resource without modification may mean that learners’ work is not authentic. Assessors/ educators may need to change figures, measurements or data sources or set a different context or topic to be investigated or a different text to read or perform. |

Vocational Pathway Assessment Resource

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Learner instructions

# Introduction

This assessment activity requires you to implement advanced procedures to produce a database with dynamically linked data for a local manufacturing business.

You are going to be assessed on how efficiently you implement advanced procedures to produce a database with dynamically linked data for a local manufacturing business.

The following instructions provide you with a way to structure your work to demonstrate what you have learnt to allow you to achieve success in this standard.

Assessor/educator note: It is expected that the assessor/educator will read the learner instructions and modify them if necessary to suit their learners.

# Task

You are required to design and create a database for a local manufacturing business. It will be used to send out invoices to customers and a monthly newsletter with current promotions. Your accuracy, efficiency and independence in the way you apply advanced tools, techniques and testing procedures will be assessed as you go about designing and creating this database.

The database will contain the following information:

* Name (trade and regular retail customers)
* Contact details of trade and regular retail customers (address, mobile phone number, email)
* Stock details such as:
	+ product name
	+ identification code
	+ product length
	+ product diameter
	+ product material (such as aluminium, brass, steel or stainless steel)
	+ trade price
	+ retail price.

Your assessor/educator will provide the data for input.

## Part 1: Data and specifications

Specifications describe requirements for the finished product.

Specifications:

* database to use a selection of advanced database procedures
* newsletter and invoices to use a selection of advanced word processing procedures
* newsletter to be 2-4 A4 equivalent pages
* effective design principles to be used on all documents
* custom styles to be used in the newsletter
* newsletter designed to be easily updated each year
* invoices designed to be folded to DLE size for mailing
* invoices suitably formatted.

## Part 2: Create database, newsletter, and invoices

Select software to create a database that is dynamically linked to the newsletter and invoices, and that adheres to the agreed specifications.

Use your database to create the following queries and integrate these, where appropriate, into the newsletter and invoices. Ensure that you address any legal, ethical and moral issues related to your database and other documents.

### Invoice

Create an invoice that will be sent to customers. It will contain the customer’s name, address, product name, product code, trade price and total amount owing.

### Queries

Decide on the most efficient way to create queries and the most appropriate format for displaying this information:

* Create a query that names trade customers that spend more than $500 per fortnight. Sort this information in order with the most spent at the top.
* Create a query that names trade customers that spend less than $500 per fortnight. Sort this information in order with the most spent at the top.
* To ensure that stock is current, create a query and produce a report that identifies the products ranked from the most number of sales down to the least number of sales.

### The Newsletter

The newsletter is to go to all customers, but two versions will need to be produced:

* one with trade prices that are discounted because the customer spends more than $500 a fortnight
* one with trade prices without discount as the customer spends less than $500 per fortnight.

Both versions will identify the customer that spent the most in the previous month. The newsletter will also include information about the top two selling products.

## Part 3: Testing and publication

Test your database during development and keep records or a log of what you do, including the results of all testing. When you have finished, save the final version of your newsletter and invoices (using a suitable medium) and print a hard copy. Give copies of all documents to your assessor/educator along with copies of:

* data that is linked to your newsletter and invoices, for example, the form used for your database, query results
* your record (log) of what you did and what happened at each stage
* any other documents that you created as you developed your newsletter and invoices.

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Assessor/Educator guidelines

# Introduction

The following guidelines are supplied to enable assessors/educators to carry out valid and consistent assessment using this internal assessment resource.

As with all assessment resources, education providers will need to follow their own quality control processes. Assessors/educators must manage authenticity for any assessment from a public source, because learners may have access to the assessment schedule or exemplar material. Using this assessment resource without modification may mean that learners' work is not authentic. The assessor/educator may need to change figures, measurements or data sources or set a different context or topic. Assessors/educators need to consider the local context in which learning is taking place and its relevance for learners.

Assessors/educators need to be very familiar with the outcome being assessed by the achievement standard. The achievement criteria and the explanatory notes contain information, definitions, and requirements that are crucial when interpreting the standard and assessing learners against it.

# Context/setting

This activity requires learners to create a database and link this to word-processed documents to create a specified digital information outcome (a newsletter and invoices).

The task requires learners to demonstrate efficient implementation of advanced procedures to produce a database for a local manufacturing business.

# Conditions

You are required to assess the ways in which the techniques are implemented, as well as the quality of the outcome, so learners should complete all their practical work in the presence of their assessor/educator.

This is an individual assessment task.

# Resource requirements

Assessors/educators will need to provide learners with the data for input into the database along with the text for the newsletter and invoice. This should be in a format such as CSV or text so that learners can select the most appropriate software.

# Additional information

The outcome could equally be a database and accompanying newsletter, letters or a database driven website for any manufacturing or technology industry. It could also be an outcome trialled through technological practice that the learner is now ready to create in its final form.

# Assessment schedule: Digital Technologies 91368 – Manufacturing database

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| Evidence/Judgements for Achievement | Evidence/Judgements for Achievement with Merit | Evidence/Judgements for Achievement with Excellence |
| The learner implements advanced procedures to produce a database dynamically linked to a newsletter and invoices by:* designing and creating a database with field types that meet data requirements

For example:The learner designs and creates a database for the manufacturing industry that meets specifications. The field types are appropriate for the data type (e.g. currency formatting is used for the prices).The learner creates a database with advanced procedures by:* + creating multiple criteria queries, using logical, mathematical and/or wildcard operators
	+ setting validation rules to restrict what users can enter in a given field, such as expressions or operators.

The learner creates newsletters and invoices that use advanced procedures from word processing by:* + applying custom styles
	+ applying section breaks
	+ object linking and embedding
	+ creating templates.

There are some inaccuracies in the content, e.g. capitalisation and spelling errors. All queries are executed accurately.* using tools of the software to integrate data from a database and at least one other software application using dynamic linking

For example:The learner merges the customers’ names and addresses into the individual invoices.* applying design elements and/or formatting techniques as suited to the outcome

For example:The learner applies some design elements, e.g. contrast fonts for headings and content. The newsletter is balanced and invoices are correctly formatted.* applying data integrity and testing procedures to ensure the outcome meets the specifications

For example:The learneruses a number of testing techniques, such as functional testing, data verification, testing and evaluating program design and structure, table structure check, referential integrity, fully entered data in the correct format (e.g. to prevent numeric data being entered into a text field) and pretesting – populate a test database (e.g. validates that the query outcomes are correct before using information to link with other documents such as the newsletter and invoices), checking that documents are going to the correct categories of people.The learner uses print preview and actual printouts to check that data is displayed correctly and that the invoices and newsletter print out as intended.* following legal, ethical, and moral responsibilities as appropriate to the outcome

For example:The learner correctly acknowledges the source of the material used and the copyright owner of the photographs that may have been used. The newsletter demonstrates that the learner has considered the privacy of information stored in the database by not revealing any contact details of other people or firms who receive the newsletter.*The above expected learner responses are indicative only and relate to just part of what is required.* | The learner skilfully implements advanced procedures to produce a database dynamically linked to a newsletter and invoices by:* designing and creating a database with field types that meet data requirements
* showing independence with regard to decision making and accuracy in the application of techniques, design elements and procedures

For example:The learner independently designs and creates the database for the business using the data provided. The field types chosen are appropriate for the data type (e.g. currency formatting is used for prices).Advanced procedures are used by:* + creating multiple criteria queries, using logical, mathematical and/or wildcard operators
	+ setting validation rules to restrict what users can enter in a given field, such as expressions, operators.

The learner independently creates newsletters and invoices that use advanced procedures from word processing by:* + applying custom styles
	+ applying section breaks
	+ object linking and embedding
	+ creating templates.

Content is accurate, e.g. capitalisation, spelling, and all queries are executed accurately and independently.The learner independently applies the design elements to comply with commonly accepted codes of practice, and uses styles plus alignment, contrast etc. to ensure accuracy.* applying correct data integrity and testing techniques

For example:The learner accurately uses a number of testing techniques, such as functional testing, data verification, testing and evaluating program design and structure, table structure check, referential integrity, fully entered data in the correct format (e.g. to prevent numeric data being entered into a text field) and pretesting – populate a test database (e.g. validates that the query outcomes are correct before using information to link with other documents such as the newsletter and invoices), checking that documents are going to the correct categories of people.The learner uses print preview and actual printouts to check that data is displayed correctly and that the invoices and newsletter print out as intended.The learner checks data input is accurate in the database and auto-checks the mail merge to ensure the newsletter is on the correct number of pages and the page breaks and section breaks are as planned prior to printing.All queries in the database are checked and confirmed.* following legal, ethical, and moral responsibilities as appropriate to the outcome

For example:The learner correctly acknowledges the source of the material used and the copyright owner of the photographs that may have been used. The newsletter demonstrates that the learner has considered the privacy of information stored in the database by not revealing any contact details of other people or firms who receive the newsletter.*The above expected learner responses are indicative only and relate to just part of what is* required. | The learner efficiently implements advanced procedures to produce a database dynamically linked to a newsletter and invoices by:* designing and creating a database with field types that meet data requirements
* showing independence with regard to decision making and accuracy in the application of techniques, design elements and procedures
* undertaking techniques and procedures in a manner that economises the use of resources in the outcome’s production and its use, e.g. timely fashion, optimises the specific features of tools, and the application of dynamically linked data

For example:The learner independently and efficiently designs and creates the database with advanced procedures by:* + creating multiple criteria queries, using logical, mathematical and/or wildcard operators
	+ setting validation rules to restrict what users can enter in a given field such as expressions, operators.

The learner independently creates newsletters and invoices that use advanced procedures from word processing:* + applying custom styles
	+ applying section breaks
	+ object linking and embedding
	+ creating templates.

Content is accurate, e.g. capitalisation, spelling, and all queries are executed accurately and independently.The learner independently applies the design elements to comply with commonly accepted codes of practice, and uses styles, plus alignment, contrast, and so on, to ensure accuracy.The learner creates the newsletter and invoices in a straightforward manner, not through trial and error. The learner follows a logical process, which they map out as a schedule on their own before they begin. Prior to building the database, the learner considers what information is required in queries and sets this up in a logical and straightforward manner within the database.The learner uses database tools and applies many shortcuts.The learner uses the primary key function on the database to allow for easy verification, and linking and checking of records.The learner is able to easily pick up on their development at the beginning of each session as they have saved versions in an easily accessible manner. The learner plans their tasks and gets on with them.The manner in which the newsletter and invoices are laid out shows an economic use of paper. Black and white drafts are used when testing, and printing of drafts is only carried out as necessary.* applying correct data integrity and testing techniques

For example:The learner accurately uses a number of testing techniques, such as functional testing, data verification, testing and evaluating program design and structure, table structure check, referential integrity, fully entered data in the correct format (e.g. to prevent numeric data being entered into a text field) and pretesting – populate a test database (e.g. validates that the query outcomes are correct before using information to link with other documents such as the newsletter and invoices), checking that documents are going to the correct categories of people.The learner uses print preview and actual printouts to check that data is displayed correctly and that the invoices and newsletter print out as intended.The learner checks data input is accurate in database and auto-checks the mail merge to ensure the newsletter is on the correct number of pages and the page breaks and section breaks are as planned prior to printing. All queries are checked and confirmed.* following legal, ethical, and moral responsibilities as appropriate to the outcome

For example:The learner correctly acknowledges the source of the material used and the copyright owner of the photographs that may have been used. The newsletter demonstrates that the learner has considered the privacy of information stored in the database by not revealing any contact details of other people or firms who receive the newsletter.*The above expected learner responses are indicative only and relate to just part of what is* required. |

Final grades will be decided using professional judgement based on an examination of the evidence provided against the criteria in the Achievement Standard. Judgements should be holistic, rather than based on a checklist approach.