
**SOFTWARE DEVELOPMENT -
PROGRAMMING**
**Demonstrate computer programming
skills using a third generation language**

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| level: | 5 |
| credit: | 14 |
| final date for comment: | March 2001 |
| expiry date: | December 2001 |
| sub-field: | Computing |
| purpose: | People credited with this unit standard are able to design, write, test, and document computer programs that demonstrate third generation language (3GL) programming skills. The performance of all elements is to a standard that allows for further learning in this area. |
| entry information: | Open. The credit value of this unit standard is calculated assuming a person has the prior knowledge and skills to demonstrate an understanding of the principles of computer program development. |
| accreditation option: | Evaluation of documentation and visit by NZQA, industry and teaching professional in the same field from another provider. |
| moderation option: | A centrally established and directed national moderation system has been set up by NZQA on behalf of the Computing and Information Technology Advisory Group. |

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special notes:

Programming problems must include: selection, sequence and iteration, subroutines, exception handling, arrays, text-file update with sequential access, interactive input and data validation.

Elements and Performance Criteria

element 1

Design computer programs that demonstrate 3GL programming skills.

performance criteria

- 1.1 The design will solve the programming problem.
- 1.2 The design is modular.
- 1.3 The modules exhibit strong cohesion by unity of purpose.
- 1.4 The design enables weak coupling of modules.
- 1.5 The data types selected in the design make efficient use of computer resources, but without complicating the program logic.

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element 2

Write computer programs that demonstrate 3GL programming skills.

performance criteria

- 2.1 The program meets the requirements of the programming problem.
- 2.2 The program code is consistent with the program design.
- 2.3 Global data sharing is minimised to enable weak coupling, and modules exhibit functional cohesion.
- 2.4 The layout of the program code provides a visual guide to the logical structure of the program.
- 2.5 Comments embedded in the program code complement the self-documenting attributes of the programming language.

element 3

Test computer programs that demonstrate 3GL programming skills.

performance criteria

- 3.1 A test plan describes tests and expected results for logic paths of the computer program.
- 3.2 Testing fulfils the test plan.
- 3.3 The program code is corrected to eliminate errors identified through testing.

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element 4

Document computer programs that demonstrate 3GL programming skills.

performance criteria

- 4.1 The layout of the program code provides a visual guide to the logical structure of the program.
- 4.2 Comments embedded in the program code enhance the understanding of the program code.
- 4.3 The documentation complements the self-documenting attributes of the program code.

Comments to:

Computing and Information Technology Advisory Group
Unit Standard Revision
PO Box 160
WELLINGTON

by March 2001.

Please Note: Providers must be accredited by the Qualifications Authority before they can offer programmes of education and training assessed against unit standards.

Accredited providers assessing against unit standards must engage with the moderation system that applies to those unit standards. [Please refer to relevant Plan ref: 0011]