

# Testing

Testing involves finding out if a program works as expected.

Formal testing involves running through a sequence of tests in order to test that a program always does what it is supposed to do.

This checks that a program does what it has been written to do.

# Testing

- Testing takes place as part of the design cycle.
- Formal testing will often be completed once a program has reached a “finished” state – near handover to a client
- **Alpha testing** is completed by developers
- **Beta testing** is completed by test users. This is important – developers know what their code should expect; test users are much more effective at “breaking” code

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3 types of test data:

- Expected data – normal, everyday data
- Extreme data – data that's at the limit of what should be expected
- Erroneous data – data that's wrong and is designed to create errors

# Testing

Data item	Expected	Extreme	Erroneous
Shoe size (UK)			
Height (cm)			
Name			

# Testing

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Test plans are created by test managers.

They are formal documents which describe the approach taken and the data used to test a program.

Includes test data and expected results.  
Actual results are then documented.

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Test	Test data	Expected outcome	Actual outcome
Price of cakes calculated accurately	Price: £4.50  Number of cakes: 3	£13.50	

# Testing

Using decomposition means that functions can be created and tested individually.

Testing all the possible inputs to one function is much quicker than testing a whole program.

If you know that the functions that make up a program execute correctly, then the program should be more likely to work!