

Kit's Guide to Brilliant Debugging

Be a Digital Detective: Find the Glitch, Fix the Code!

- **What is a 'bug' in computing?** A bug is an unexpected error or a fault in a sequence of code that prevents a program from working correctly.
- **Why do we debug?** Debugging is essential to ensure that our algorithms follow the correct logical steps to achieve the desired outcome.
- **How do we spot a mistake?** We use 'systematic testing' by running our code step-by-step to predict what should happen compared to what actually happens.
- **Is it a failure if code breaks?** No! Every error is an opportunity to learn more about how your program functions. Even the best programmers encounter bugs.
- **What is the golden rule of debugging?** Always change only one thing at a time. If you change too many parts at once, you will not know which change actually fixed the problem.

Did you know? Did you know? The term 'debugging' became famous in 1947 when computer scientists found a real moth trapped inside a relay of the Harvard Mark II computer! It was literally a bug causing the machine to crash.

Key vocabulary: Algorithm · Bug · Debugging · Sequence · Logic Error · Syntax · Prediction