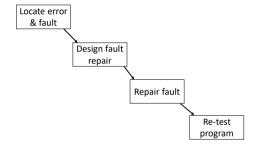
Testing and Debugging

Testing and Debugging

- Defect testing and debugging are distinct processes
- Defect testing is concerned with confirming the presence of errors
- Debugging is concerned with locating and repairing these errors
- Debugging involves formulating a hypothesis about program behavior then testing these hypotheses to find the system error

Debugging Activities



Debugging: Issues

- observed bug and its cause may be geographically separated
- observed bug may disappear when another problem is fixed
- cause of bug may be due to human error that is hard to trace
- cause of bug may be due to assumptions that everyone believes
- observed bug may be intermittent because of a system or compiler error

Debugging: Approaches

- Brute Force hack away at the code until it is found
- Backtracking fine for small programs
- Cause elimination hypothesise about what is causing the bug and input test data to check this