Software Development and Defensive Design

A	Software development stages
Analysis	Looking at a problem, decomposing it into sub problems, abstracting into essential points and spotting patterns, then writing success criteria for solving the problem
Design	Planning the solution to a problem, including pseudocode for algorithms and validation for data entered
Development / Implementation	Practical application of a design and its subsequent development
Testing	Making sure a program works under various conditions
Documentation	Clear evidence of and information about a product or activity
Evaluation	Judgement of the success of a product with reference to the success criteria written in the analysis

C	Defensive Design vocab
Authentication	A process for checking the identity of the user
Data validation	As data is inputted, it is checked to make sure it is the correct data type, length, format etc
Error trapping	Planning for erroneous inputs which may be valid but out of range
Input sanitisation	Removing unwanted characters from entered data to protect against SQL injections

B	Software development processes
Input	Any method of introducing data to a computer
Output	Any display or transmission of data from a computer
Process	A change of state of a computer which does not involve an input or an output
Execution order	Input ⇒ Process ⇒ Output
Planning order	Output ⇒ Input ⇒ Process

D	Software development vocab
Defensive design	An approach to programming which tries to anticipate and protect against misuse by the end user through a combination of *authentication*, *data validation, error trapping* and *input sanitisation*
Maintainability	The ability for code to be maintained easily by eg *commenting*, using *functions*, intuitive variable names, indentation and writing *documentation*
Maintenance	Changing code to update and repair it
Auto-documentation	A programming tool which helps to create summary information about a program