AQA Computer Science AS-Level

3.2.1 Data structures and abstract data types
Concise Notes

Specification:

4.2.1.1 Data structures:

Be familiar with the concept of data structures.

4.2.1.2 Single- and multi-dimensional arrays (or equivalent):

Use arrays (or equivalent) in the design of solutions to simple problems.

4.2.1.3 Fields, records and files:

Be able to read/write from/to a text file.

Be able to read/write data from/to a binary (non-text) file.

Data structures

- The containers within which information is stored
- Some are better suited to different types of data than others
- Programmers must decide which of the data structures available is the best to use

Arrays

- An indexed set of related elements
- Must be finite and indexed
- An array's index often starts from zero
- Must only contain elements with the same data type
- Arrays can be created in many dimensions

Fields, records and files

- Information is stored by computers as a series of files.
- Each file is made up of records which are composed of a number of fields.