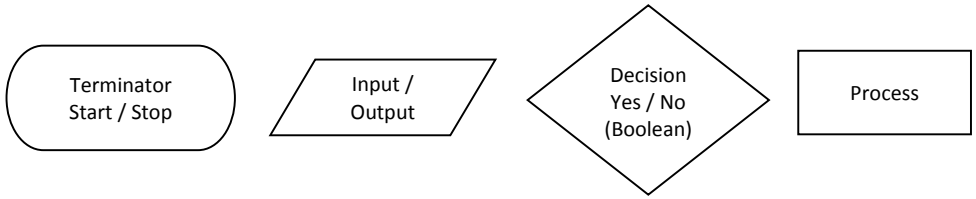
PROGRAMMING KEY WORDS

Machine code	• Binary / raw instruction • Understood by a computer not us • Each instruction loaded into memory ready to be fetched and executed by the CPU
Assembly / low-level programming language	• Mnemonics to represent machine code instructions • Basic instruction set that will be 'assembled'
High level programming language	• Closer to human language • Easier to read, write, maintain • Portable across different CPUs
Translator	• Translates high-level languages into machine code
Compiler	• One type of translator • Translates and stores all of the programming at once • Stored as 'exe' or executables ready to run • If there is a code error it will only show once the program is compiled and running
Interpreter	• The other type of translator • Takes a single line of code at a time and translates • If there is an error then it will show or halt the code when reached
IDE	• Integrated development environment • A software package that gives you the tools needed to be able to develop a program, usually through a GUI

FLOW CHARTS AND PSEUDOCODE



- READ – read in / input information
- PROGRAM – name a program
- PRINT – print out some information
- IF, THEN, ELSE, ENDIF – to use with selection / IF statements
- WHILE, DO, ENDWHILE – to use with condition controlled loops / iterations
- FOR, NEXT, ENDFOR – to use with fixed loops / iterations

PROGRAMMING KEY WORDS AND TERMS

PROGRAMMING CONSTRUCTS

Sequence	Creating a sequence of instructions to execute top to bottom
Selection	Dealing with conditions, usually yes or no conditions i.e. true/false Boolean – IF statements. Helps to deal with program flow
Iteration	To repeat an action a fixed number of times or until a condition is met. Looping through code – using FOR NEXT or WHILE loops
Variable	Assigning an identifier (name) to a value that changes
Constant	Assigning an identifier (name) to a fixed value that doesn't change
Data types - string	A collection of text characters
Data types - int	A whole number
Data types – real (float)	A number that includes a decimal fraction
Data types - boolean	Evaluation of true or false
Data types - char	A single text character
Data types – date/time	Representation of a date or time format
Numeric operations: +, -, *, /, =	The process of adding, subtracting, multiplying or dividing using the operators – arithmetical calculations in the ALU
Comparison operations: >, >=, <, <=, ==, !=	The process of comparing using the operators; greater than less, than, less than or equals to, greater than or equals to, equals to, not equals to. Note the need for two identifiers in some to stop them being treated as numerical operators
Logic operations: AND, OR NOT (boolean)	Logical operations in the ALU using boolean/ logic gates
Arrays (one dimensional)	An array of data is a range of data from a start to an end point. A one-dimensional array is a single 'list' of one collection of data
Syntax errors	Errors reported in high-level programming that mean that instruction can't be understood or interpreted correctly.
Logic errors	Errors that occur when code executes but the answer is incorrect