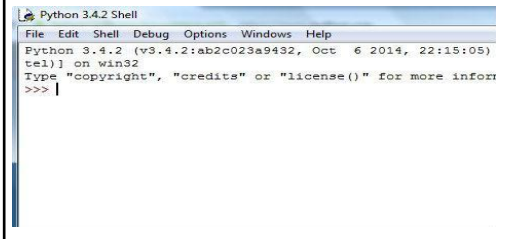
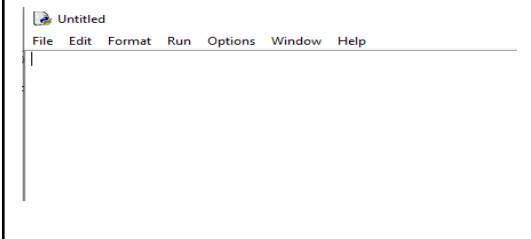
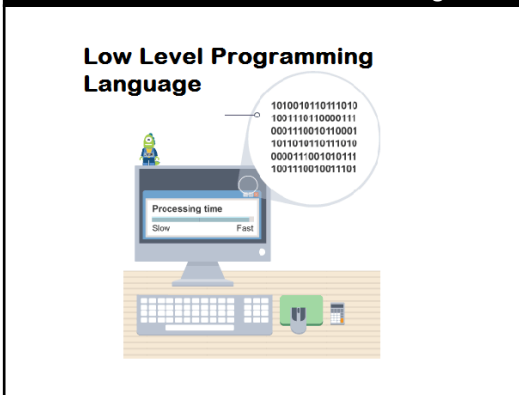
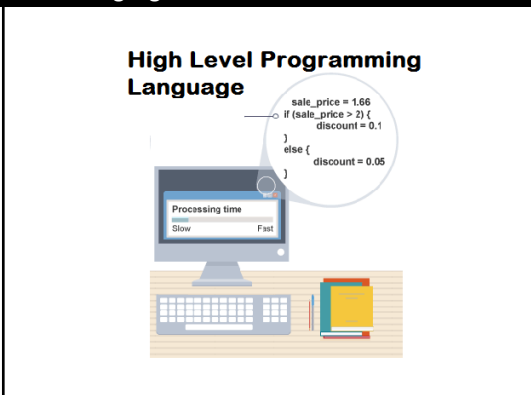


1.1a interpreter vs compiler

	
Executes one line of code at a time	Translates data into high-level language
Suitable for testing	Compiles all lines of code before executing
Highlights errors in each line, making it easier to fix	Will not run if an error exists in the code – can be hard to locate the error
Faster than a compiler as it translates and executes at the same time	Translates and executes entire program
Low memory requirement	Requires more memory

1.1b high and low level languages

Low Level Programming Language 	High Level Programming Language 
written to be applied to the system architecture	Close to human language
very close to binary	often called pseudocode
hard for humans to understand	easy to modify as it uses English-like statements
contains few recognisable English words	easy to debug
fast to execute	portable – can run on many different machines
examples include: assembly language, machine code, binary	examples include: C++, Java, Pascal, Python, Visual Basic

1.2 testing

test data	the data selected for analysis
boundary/ extreme	data that is accepted, but is close to the required checking area
valid	possible data that the program should accept and process
erroneous	data that the program can not process and should not accept
input validation	a test to ensure the correct data type has been inserted
iterative	carried out while a program is being developed The process repeats (iterates) until the module works as intended.
final	program is tested as a whole to ensure that it functions

1.3 maintainability

maintainability	allows edits and updates of created programs easily
debug	locate and resolve an error
comments	provide additional information , ignored by the program
sensible variable names	pertaining to the data type or function of the variable
indentation	formatting to show which lines of code are linked

1.4 program errors

syntax error	occurs when rules of programming are not followed
logic error	an inaccuracy in the way the program functions
run-time error	undetected during compilation, but discovered whilst the program is running

1.5 logic gates

Symbol	Logic gate	description
	and	output is 1 when both inputs are 1
	or	output is 1 when 1 of the inputs are 1
	not	output is 1 when input is 0. Contains an inverter
inverter		Circle on the not gate, inverts (flips) the input to form the output