



Information Technology Coding and Database Dictionary. V1

Shading is used to group similar terms together that are related.

Num	Term	Definition
1	data	Data is unstructured, in no particular order and not grouped in any way. A schema has not been applied
2	Information	Information is organised, arranged and logically structured. A schema has been applied
3	schema	Refers to definition and structure, usually of a database
4	variable	A named storage location in a computer's memory used to hold data values that can change during program execution
5	rounding	Refers to rounding a real number (a double number), up or down, to a more significant value Example: 2.3456 rounded to two decimal places would be 2.35
6	truncation	When a real number (a double number) has a fraction part that is cut off (removed) with no rounding. Example: 2.3456 truncated would be the integer value 2
7	filer	A set of criteria selects certain information for a database - think of a SQL query
8	indentation	When blocks of code are tabbed to the right in order to group together making it easier for people to read and troubleshoot
9	verification	Is the data present?
10	validation	Is the data valid? Is it useable and logical? Example: 2025-02-31 is not a valid date despite being present

11	concatenation	To join text together
		Example: "John" concatenated with "Watson" would become "John Watson"
12	primitive data type	Data type refers to the category a piece of data falls into. Primitive data types do not have properties and methods
		Examples: Text, whole numbers, fractional numbers, true/false, or a single character
13	complex data type	Also called a reference datatype. Refers to an address in memory. The datatype has properties and methods
		Example: In Java "int" refers to integer a primitive datatype. "Integer" however is a class with properties and methods
14	bit	A single value either on or off, zero or one, true or false
15	byte	A group of 8 bits used to represent some more complex than a zero or one
		Example: Smallest is 00000000. Biggest is 11111111. In ASCII code 01000001 represents the character "A"
16	int	In Java int is the primitive data type integer which are stored in 32 bits
17	double	In java double is the primitive data type real which is stored in 64 bits. Also called float
18	String	Text. Is a complex datatype enclosed by " " . It points to an address in memory. Its size is dynamic. Strings have methods
		Example: "5 Main Road". "3" concatenated to "2" would be "32"
19	char	A primitive datatype which refers to a single letter or number or special character from the keyboard
		Example: 'a' in single inverted commas is a char. '%' the percentage sign is a char
20	boolean	A primitive datatype which refers to true or false, yes or no (in Ms Access)
21	unsigned integer	A whole number without a positive or negative sign
22	signed integer	A whole number coupled together with either a positive or negative sign

23	syntax error	The code does not follow, match or adhere to the rules of the language
24	logical error	The code is perfect (the syntax is correct) but gives the wrong answer
25	runtime error	The code is perfect and logically sound but a situation outside of the language environment prevented the code from running
		Example: The code looks for an external file or database but it is not present
26	Overflow error	The correct answer is too big to fit into the allocated space set aside in memory. NOTE: Does not give an error message
		Example: You cannot store the number 8 trillion into a variable whose data type is int
27	OOP	Object Orientated Programming. One of the many approaches that can be used to code an algorithm
		Examples: Objects with properties and methods are created (instantiated) from a template class
28	database	A collection of data made up of individual records . Each record is made up of individual fields
29	relational database	A database made up of tables. There is a relationship between the tables
30	instantiate	To create.
		Example: We instantiate a new dog object from the template class called Dogs
31	declare	To create a variable.
		Example: We declare the primitive datatype as an int
32	initialize	To set a variable to a know starting value
		Example: We initialize a boolean flag as false at the beginning of our program
33	null	When we declare a complex data type but we do not initialise it. It exists, but has no starting values
		Example: String outcome = null;
34	constructor	A method that instantiates a new object and sets the initial starting values

35	inheritance	IS-A relationship between two classes
		A working dog IS-A dog and inherits all the properties and methods of its parent class
36	composition	HAS-A relationship between two classes
		A motor vehicle HAS-A electric motor; it has 4 electric motors to windup the windows up and down
37	array	A complex datatype that can hold more than one value (of the same data type) but only uses one variable name.
		They are numbered from 0 to the last member
38	An array of objects	A numbered collection of created objects under one variable name. They are numbered from 0 to the last member
39	parallel arrays	Two separate arrays with separate names but each member in one array corresponds to the matching member in the other array
		Example: Member 0 in one array matches to member 0 in the other array
40	JDK	Java development kit used to code Java applications. We use version 17 ONLY
41	JRE	Java runtime environment. Creates a Java virtual machine (JVM) in order to run a Java application
42	IDE	Integrated development environment. A menu driven coding app that makes coding quicker and assists with troubleshooting
		Examples: NetBeans, IntelliJ, Eclipse, Visual Studio
43	algorithm	A series of steps needed to solve a problem or complete a task
44	text file	Secondary storage. The file contains text only. If the text is used for records there will probably be a delimiter
45	SQL database	Secondary storage. The database can be Ms Access, MYSQL, SQLite etc
46	JSON	Secondary storage. A plain text file that has a defined structural layout

47	conditionals	Statements that make decisions. If a conditional is true the code runs, if false it does not run.
		Example: If else statements
48	iteration	Statements that run more than once.
		Example: for loop
49	conditional iteration	Statements that may or may not run more than once based on a condition
		Example: while loop
50	method	A reusable block of code that prevents redundancy ; should only complete one task. Can also be called a function
		Methods always belong to a class or an instance of an object
51	redundancy	The unnecessary repetition of code. This makes code maintenance prone to mistakes. Rather code a method instead
52	argument	The input values needed by a method to complete a task
53	parameters	The values a method accepts that allows it to complete a task
54	front end	The visual part of an application that the user interacts with e.g. menus, buttons, dialog boxes etc
		Examples: JFrameForm and JOptionPane
55	back end	The code hidden from sight that contains algorithms that each complete a specific task
56	full stack	A developer that works on both the front end and the back end of an application
57	JFrameForm	A library used to create front end GUIs, menus etc
58	JOptionPane	Mainly used for user prompts, alerts and error messages

59	source code	The English based code as created by the developer
60	machine code	The code make up of zeros and ones that is executed by the computer
61	bytecode	Intermediate code that is neither source code or machine code
		Example: The Java compiler produces bytecode which is why Java is platform independent
62	high level language	A coding language that is English based
		Python is a good example. Java is also a high level language
63	low level language	Closer to machine code. Cryptic and difficult to understand by a person not in the coding industry
		Examples: Assembler
64	compiled language	All the source code to translated to machine code
		Example: C is a compiled language
65	interpreted language	The source code is translated line by line
		Example: Java. The bytecode is translated line by line
65	class	A blueprint or template used for creating objects, defining its attributes (data, properties) and methods (behaviors).
67	object	An instance of a class. It contains data (properties) and functions (methods) defined by its blueprint (class)
68	refactoring	Restructuring existing computer code to improve its internal logic and readability without changing its external behavior.
		When we change the name of a project, package or class we are refactoring
69	git	A version control system designed to track changes in source code and allow multiple developers to collaborate
		Learners are encouraged to learn how to use GitHub when developing their PAT projects
70	documentation	Written text or comments accompanying software that explains how the code works, how to use it, etc