



Application Development Terminology all Health Data Scientists Should Know!

From the online course, “Application Basics”

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Take my online, 6-hour course “Application Basics” to learn about all the terminology listed here. Access the course here: <https://buff.ly/3vyx7Ad>

Term	Where Defined in Application Basics course	Definition
Agile	Chapter 3 Lecture 1	Approach to building software that has faster development cycles than the traditional approach, so that software is versioned more often, and pivoting in design concepts can happen more quickly.
Alpha	Chapter 3 Lecture 2	A prototype of an application that is just a proof-of-concept or demonstration, and does not completely work.
Audit Trail	Chapter 2 Lecture 1	Table in a database that keeps track of when values in a field are updated, what the original and new values are, and which account did the update.
Authenticate	Chapter 2 Lecture 2	Log into; provide electronic confirmation of identity.
Back-end	Chapter 2 Lecture 1	The part of the application where data are stored where they can be easily queried and managed.
Back-end validation	Chapter 2 Lecture 2	Where validation rules are programmed into and enforced by the back-end.

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Beta	Chapter 3 Lecture 2	A prototype of an application that works well enough for a group of superusers to test for providing feedback to the developers.
Blackboard	Chapter 2 Text lecture	A CMS used by colleges.
Business rule	Chapter 2 Lecture 1	A rule about the operations of a business that impact the structure of the underlying data.
Checksum	Chapter 2 Lecture 2	A digit at the end of a long number (such as a credit card number) that indicates the last digit of the number that results from summing all the numbers before it. That way, front-end validation can occur on the number entered into a form field before it is submitted.
Client	Chapter 2 Lecture 2	A front-end that is separated from a back-end saved to a local computer. The client is operated from the local computer, and interacts with the data stored in a back-end elsewhere.
Cloud services	Chapter 2 Text lecture	Companies that specialize in saving data redundantly across many geographic locations using many data centers.
Co-location facility	Chapter 2 Lecture 1	Off-site facility optimized to store copies of data for the purposes of disaster preparedness.
Course Management System (CMS)	Chapter 2 Text lecture	An application optimized to support teaching and learning online.
Credentials	Chapter 2 Lecture 2	Electronic proof of identity.

Term	Where Defined in Application Basics course	Definition
Data center	Chapter 2 Text lecture	A facility optimized for storage and retrieval of large amounts of data.
Data engineer	Chapter 3 Lecture 1	A programmer with a specialty in data management and optimizing data I/O, usually within a data environment.
Data mart	Chapter 4 Lecture 2	A small data warehouse designed for a particular function.
Data scientist	Chapter 3 Lecture 1	Programmer who works with data; seen as academic (expertise in math, statistics and scientific methods), but may encompass more data work (e.g., work of data engineers).
Data warehouse	Chapter 2 Text lecture	Copies of live data made available for analytics.
Database management system (DBMS)	Chapter 2 Text lecture	Essentially a set of front-end tools optimized to help users manage data.
Delimiter	Chapter 2 Text lecture	A character that tells the computer where columns start and end. "Comma separated value" (CSV) files are comma delimited.
Deliverables	Chapter 3 Lecture 2	Tangible items created as part of completing a project.
Denominator File	Chapter 2 Lecture 1	In the Medicaid (MSIS/MMIS) dataset, it's the data file that has one row per beneficiary.
Development team	Chapter 3 Lecture 1	Team of multi-disciplinary individuals with complementary roles assembled

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		for the purpose of building and application.
DevOps	Chapter 3 Lecture 1	Combination between developer and operations; a developer who has leadership skills and helps with operations.
Document management systems	Chapter 2 Text lecture	Applications optimized to manage files in document format.
Encounter File	Chapter 2 Lecture 1	In the Medicaid (MSIS/MMIS) dataset, it's the data file that has one row per encounter, and is linked to the denominator file through keys.
End-of-file (EOF) character	Chapter 2 Text lecture	A character that tells the computer that it is at the end of a row of data.
Failover	Chapter 2 Text lecture	Server to which an application switches if the original one goes down.
Fatal edit	Chapter 2 Lecture 2	A situation where the user tries to edit data in the back-end, but it does not save the changes because the data are non-compliant with validation rules.
Flat	Chapter 2 Lecture 1	Data structure where the data are all theoretically on one, infinitely large Excel spreadsheet, with cells assigned to store particular types of data.
Foreign Key	Chapter 2 Lecture 1	A field in a table that holds a primary key from a field in another table to create a relationship between tables.
Front-end	Chapter 2 Lecture 1	The part of an application that displays data in a way that makes them easy to understand and edit.

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Front-end validation	Chapter 2 Lecture 2	Where validation rules are programmed into and enforced by the front-end.
Gantt	Chapter 3 Lecture 2	Diagram for a project plan used by project managers that shows horizontal bars for tasks against a timeline on the x-axis, as well as what tasks depend on each other tasks.
Governance	Chapter 4 Lecture 2	Rules that govern the use of an app, include local policies all the way up to federal regulations and mandates, and how the app meets these rules.
I/O	Chapter 2 Lecture 1	Input/output; usually refers to the speed with which data are queried and retrieved.
Indexes	Chapter 2 Lecture 1	Fields in tables that hold identification numbers that are used to relate tables to each other in normal form.
Instance	Chapter 2 Text lecture	When an application runs in a specific technological environment.
Keys	Chapter 2 Lecture 1	Fields in tables that hold identification numbers called indexes that are used to relate tables to each other in normal form.
Learning Management System (LMS)	Chapter 2 Text lecture	Synonym for course management system (CMS).
Legacy	Chapter 2 Lecture 1	Old databases or systems from the past.
Live data	Chapter 2 Lecture 1	Data that are continually being updated, and at any time, are the most accurate.

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Local Area Network (LAN)	Chapter 2 Lecture 2	A network within a physical location that does not rely on the internet for connectivity.
Manuscript Central	Chapter 2 Text lecture	A document management system used by scientific journals for their journal portal.
Matrix management	Chapter 3 Lecture 1	A management system where team members with different types of expertise are assigned to multiple different teams in a “matrix”.
Messaging application	Chapter 2 Text lecture	An application optimized for sending e-mail, social media, or other messages.
Metadata	Chapter 2 Text lecture	Data about other data, such as files.
Microsoft Project	Chapter 3 Lecture 2	Software used by project managers that produces gantt charts, and allows them to track project progress, timelines, deliverables, milestones, tasks, and resources.
Milestones	Chapter 3 Lecture 2	Goals to meet on a gantt chart.
Mirror	Chapter 2 Text lecture	Server that keeps a constantly-updating copy of the live data.
Moodle	Chapter 2 Text lecture	An open source CMS used by colleges.
Network engineer	Chapter 3 Lecture 1	A programmer with a specialty in improving I/O of data across networks.
Normal form	Chapter 2 Lecture 1	Data structure where data are split into multiple tables with different numbers of rows that relate to each other through primary and foreign keys.

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Notebook application	Chapter 2 Text lecture	Application that allows you to see raw data, including the delimiters.
Open Government Data (OGD)	Chapter 3 Lecture 3	Data about the government that are open to the public, usually as a result of laws or regulations.
Parallel tasks	Chapter 3 Lecture 2	The situation where two tasks can be completed in parallel, and do not depend upon one to be completed earlier than the other one.
Primary Key	Chapter 2 Lecture 1	The main index in a table that is unique in every row and essentially acts as a row identifier.
Project manager (PM)	Chapter 3 Lecture 1	A person with expertise in managing the development of large projects, and uses the approach called the “project life cycle” to ensure meeting the goals of the project.
Project phases	Chapter 3 Lecture 2	Phases of a project on a gantt.
Rapid application development (RAD)	Chapter 3 Lecture 1	Approach to building software that has shorter development cycles than traditional, but longer ones than Agile so as not to sacrifice design and other features related to both quality and governance.
Relational database	Chapter 2 Lecture 1	A database in normal form.
Reporting front-end	Chapter 2 Text lecture	A front-end that displays data, but does not let the user update the data.
Requirements	Chapter 3 Lecture 1	List of functions that an application must do, or criteria it needs to meet.
Resources	Chapter 3 Lecture 2	According to project management, “resources” refers to people and large

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		items that cannot be shared (e.g., a conference room).
Scalable	Intro lecture	The ability to implement a small, demonstration process at a large, system level.
Scope	Chapter 4 Lecture 1	The primary function that an application should accomplish.
Scope creep	Chapter 4 Lecture 1	When the original scope is widened to encompass more than one primary function, thus elevating the risk of not completing the project at all.
Scrum	Chapter 4 Lecture 1	Regular daily meetings of the Agile development team to plan the activities of the day.
Software developer	Chapter 3 Lecture 1	Often used as an alternative to software engineer, although implies more front-end rather than back-end work.
Software engineer	Chapter 3 Lecture 1	A programmer engineer with a specialty in developing application front-ends, as well as connecting front-ends to back-ends and improving their functionality.
Specifications	Chapter 3 Lecture 1	List of technical details that final completed application must meet for quality control.
Sponsor	Chapter 3 Lecture 1	Leader who is a representative of the stakeholder or group of stakeholders who want the application to be built, and are funding its development.
SQL views	Chapter 2 Lecture 2	Dynamic select queries in SQL that are not tables, but behave like tables, similar to placing a filter on a spreadsheet in Excel.

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Stakeholders	Chapter 3 Lecture 2	Anyone who is impacted by the application you are developing, including but not limited to: Sponsor, organization, everyone on the development team, all the users, all the partner organizations involved with app development.
Structured query language (SQL)	Chapter 2 Lecture 1	A data management language optimized for storing and retrieving data in some version of normal form.
Subject Matter Expert (SME)	Chapter 3 Lecture 1	Non-technical individual who has expertise in the knowledge domain in which the application is supposed to operate.
Task dependencies	Chapter 3 Lecture 2	The situation when one task cannot start until another task is complete.
Tasks	Chapter 3 Lecture 2	Items on a gantt represented by horizontal lines.
Timestamp	Chapter 2 Text lecture	A field in a dataset that keeps track of the exact time and date that a particular record was created or updated.
User experience (UX)	Chapter 3 Lecture 1	Concerned with the overall experience users have when using the application.
User interfaces (UIs)	Chapter 2 Lecture 1	Different portions, sections, and types of front-ends to which the user might be exposed.
Validation rules	Chapter 2 Lecture 2	Criteria that values in each data field must meet in order to be validly entered into the field and saved to the database.

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Vaporware	Chapter 3 Lecture 3	Software that has been imagined and designed, but not built.
White label analytics	Chapter 2 Text lecture	A method of making one instance of an application appear to be customized for users in different contexts.
Write-to-disk	Chapter 2 Lecture 2	The costly operation of saving updated data by having it be written physically to storage media.