

Between a Rock and a Book Place: Comparing Metadata from RockAuto and the WCJC OPAC

Introduction

This paper analyzes metadata schemas from two online catalogs: the commercial autoparts provider RockAuto and the online public access catalog (OPAC) for the J.M. Hodges Library at Wharton County Junior College. RockAuto is an online family e-business founded in 1999 in Madison, Wisconsin, that sells auto parts exclusively online (“About Us”). This direct-to-consumer operation has an online catalog that includes almost every conceivable car part, including transmissions, engines, exhaust systems, cooling systems, various sensors, steering components, brakes, suspension, and body parts (“RockAuto, LLC”). On the other hand, Wharton County Junior College is a public, two-year community college located in Wharton, Texas (“About Us”), in the Gulf Coast region about 60 miles southwest of Houston. Although adjacent to the Houston metro area, this town of 8,700 “remains relatively rural as compared to the suburban areas outside of Houston” (“Wharton, TX Market Analysis” 7). The school had a total enrollment of 5,687 students in 2023, with 39.6% enrolled full-time (“IPEDS Data”).

Metadata Standards

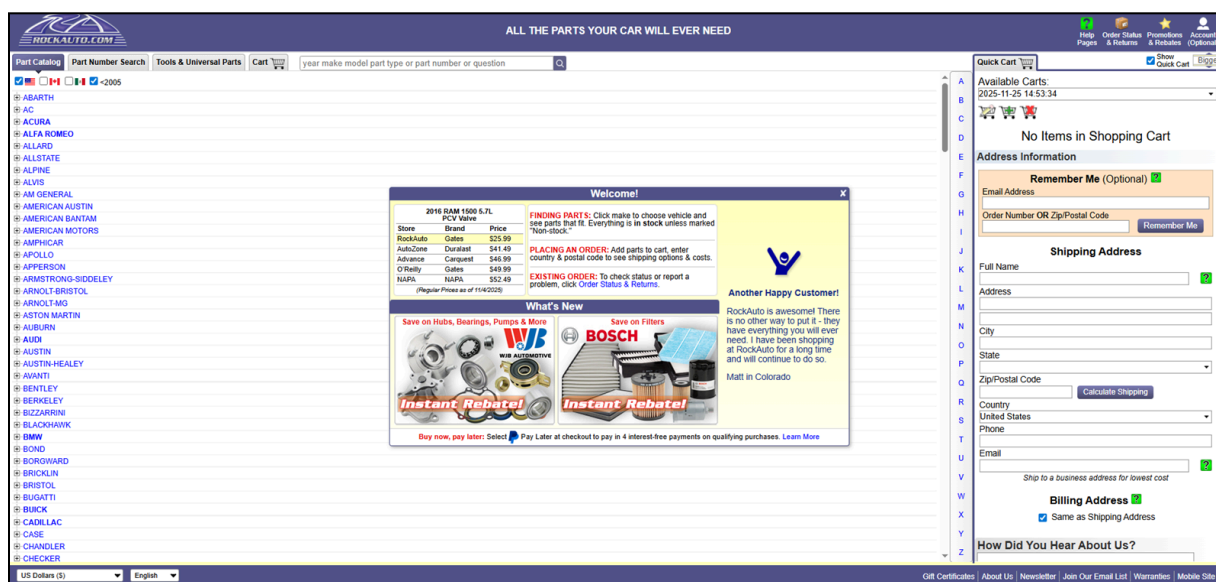


Figure 1.1. “RockAuto Home Page,” *RockAuto*, accessed 26 November 2025.

While the RockAuto site does not specifically name its metadata standards, the company is a major automotive aftermarket supplier, an industry with more than half a million businesses that relies on Aftermarket Catalog Exchange Standard (ACES) and Product Information Exchange Standard (PIES). These twin metadata standards, created and maintained by the Auto Care Association, work together “to manage and exchange part number and fitment data” (“ACES and PIES”). The aftermarket industry requires management of a wide range of parts for multiple vehicle makes, models, and trim levels from all over the world across several decades. Each manufacturer from ACDelco to Wanxiang has its own part numbers, which sellers must be able to correlate with one another, and this is the function ACES and PIES fill. The fact that RockAuto carries parts from a huge number of differing suppliers means that it most likely uses these industry metadata standards. ACES manages parts fitment for more than 60,000 possible vehicle combinations with information that includes make, model, year, submodel, engine, transmission, and so on. PIES data covers more than 20,000 types of products in 25 categories. Information in PIES not only includes “product attributes, but also includes data like brand ID, prices, dimensions, weights, kits, digital assets, marketing content, UPC codes, hazardous material information and country of origin” (“ACES and PIES”). The two work in tandem: ACES data determines whether a part will fit a given vehicle, and PIES data determines whether the specific part will meet all of a customer’s needs, including price (“ACES and PIES”).

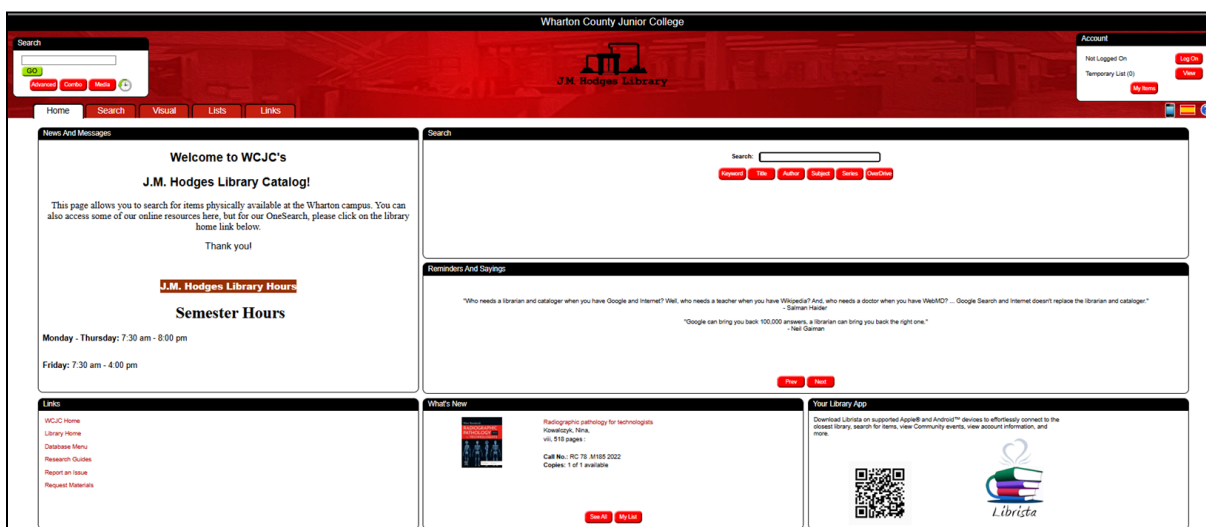


Figure 1.2. “Wharton County Junior College OPAC,” *Book Systems*, accessed 25 November 2025.

Unlike RockAuto, the OPAC for WCJC’s J.M. Hodges Library explicitly makes use of the MACHine-Readable Cataloging (MARC) standard for metadata, as may be seen on any resource’s detailed listing (“WCJC Results Page”). The MARC Bibliographic Format is a bibliographic standard often used in libraries (Joudrey and Taylor 198). It was first developed in the 1960s by the Library of Congress as a means for libraries to share bibliographic data (253). The standard has been updated a number of times over the years, with the latest being MARC 21 Update No. 40, which was adopted in June 2025. This most recent version first arose in 2000 from an agreement between the U.S. and Canada to merge and standardize their respective bibliographic formats. The standard has five subformats for different kinds of data: bibliographic, authority, community information, holdings, and classification data (Joudrey and Taylor 262). An individual MARC record has three parts: record structure, content designation, and data content. The record structure meets international standards for information exchange, while the content designation includes “the codes and conventions established explicitly to identify and further characterize the data elements within a record and to support the manipulation of that data,” and the data content is generally defined by an outside standard, such as the Library of Congress Subject Headings (“MARC 21 Fomat”).

Metadata Elements

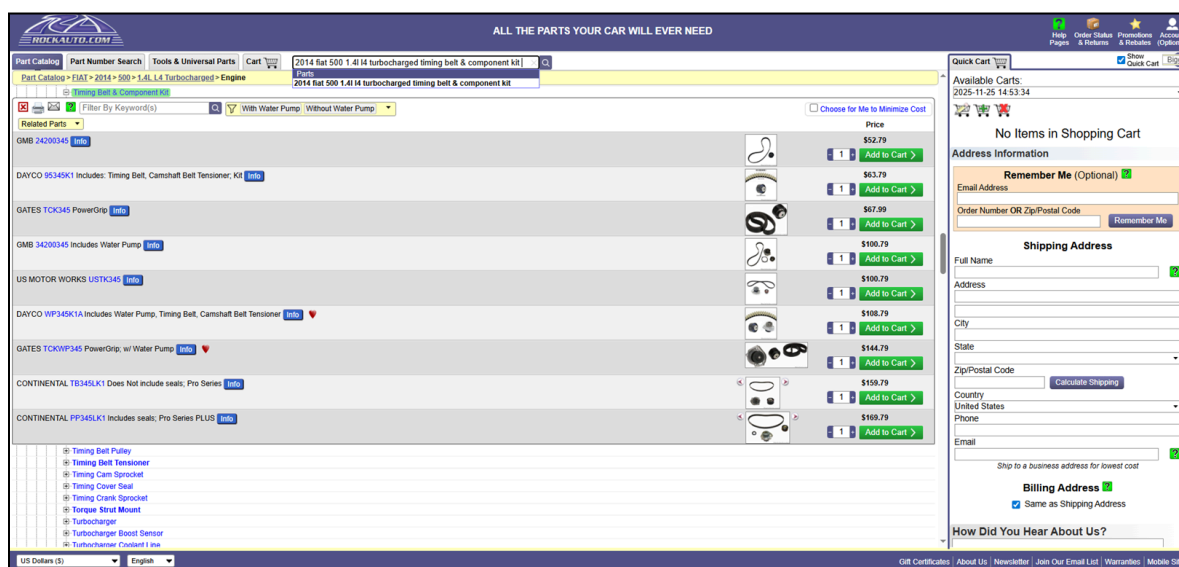


Figure 2.1. “RockAuto Search Results,” *RockAuto*, accessed 26 November 2025.

A metadata schema is a standardized grouping of elements created to meet the needs of a specific community or organization. Those elements are comprised of individual categories that contain parts of a resource description, such as creator, creation date, subject, title, unique identifier, etc. (Joudrey and Taylor 187). Finding specific automobile parts requires a chain of information so that the right part can be found. For example, searching for a timing belt kit for a Fiat and a brake caliper for a Nissan show the sort of metadata needed for various applications. The metadata common across almost all parts are year, make, model, engine, part category, component, part number, parts included, price, quantity, what vehicles the part fits, a description, and warranty information (“DAYCO WP345K1A”). Most include features and benefits, and many also provide installation tips, product specifications, warnings, and relevant sale information (“POWER STOP S7148”). ACES and PIES arrange these various fields through a collection of databases. ACES includes the Brand Table and Product Classification, Qualifier, and Vehicle Configuration databases. PIES is also linked to the Product Classification database and Brand Table and includes a Product Attribute Database (“ACES and PIES”).

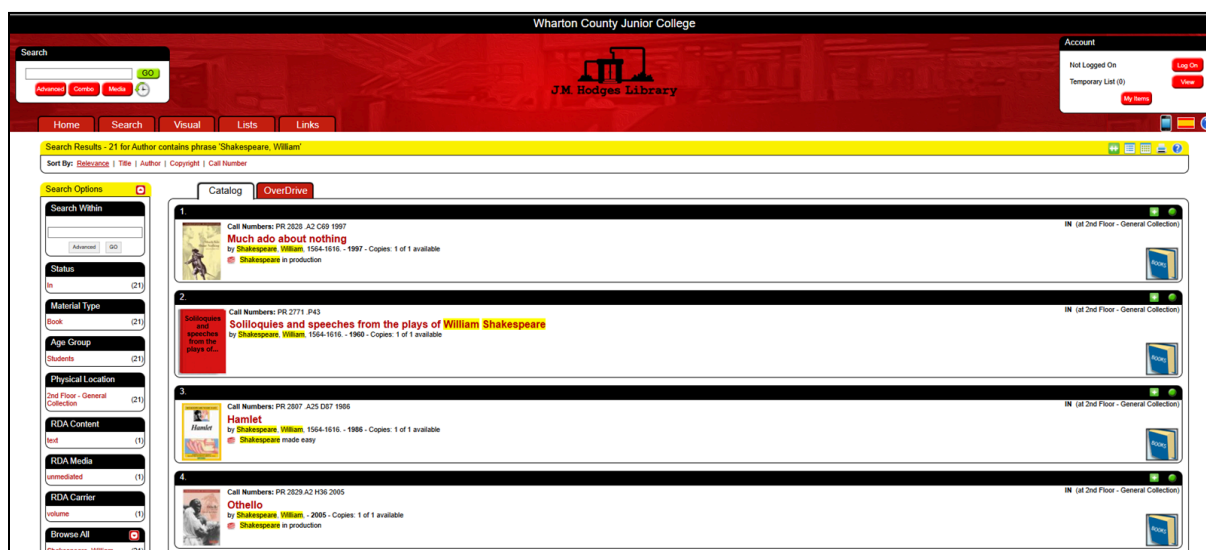


Figure 2.2. “WCJC Results Page,” *Book Systems*, accessed 25 November 2025.

The most common form of library catalog in the United States is the online public access catalog, or OPAC, which displays records only as needed (Joudrey and Taylor 109). The catalog is composed mostly of MARC records, which can be created as original cataloging, although

most get them from another institution or via a paid subscription (18). Looking at the listings for William Shakespeare's *The Taming of the Shrew* and J.R.R. Tolkien's *The Silmarillion* from the WCJC OPAC reveals that while works share some metadata, they may also have differing elements. Much of the information presented to library users comes from the MARC record, such as title, author, publisher, place of publication, copyright date, ISBN, Library of Congress call number, physical description, notes, Library of Congress subject headings, and location in the library. The *Shrew* listing also has information on the series title ("*The Taming of the Shrew*, Full Details"). The *Silmarillion* entry shares much of the same elements, although publisher, place of publication, and copyright date are all under a single "publisher" heading, and the ISBN and LCSH fields are blank ("*The Silmarillion*, Full Details"). Other metadata fields are included by the OPAC vendor, Book Systems, and the library staff, including tags, age group, work summaries, author information, a table of contents, picture of the cover, and related recommendations ("*The Taming of the Shrew*, Full Details"). Other ancillary data may include awards and honors, reading level, and links to reviews ("*The Silmarillion*, Full Details").

Metadata Contents

RockAuto has a hierarchical structure with nested access points. First, a user selects a vehicle make, such as Fiat or Nissan, then the model year, followed by the model, such as 500 or Rogue Sport. From there, the customer selects which engine their vehicle has, such as the 1.4-liter turbocharged four cylinder in the Fiat ("DAYCO WP345K1A"). Other vehicles may only have a single engine available, such as the 2.0-liter four cylinder in the Nissan ("POWER STOP S7148"). The next step is to select which product group the part may fall under, such as "Engine" or "Brake & Wheel Hub," followed by the actual component the user is looking for, such as a timing belt or brake caliper. Part numbers are another access point that lead to a table of vehicles that the part fits. For example, a timing belt and component kit for a turbocharged 2014 Fiat 500 also fits a 2013-2016 Dodge Dart, 2012-2017 Fiat 500, 2014-2017 500L, and 2016-2017 500X ("DAYCO WP345K1A"). A brake caliper for a 2021 Nissan Rogue Sport, on the other hand, only applies to a 2014-2020 Nissan Rogue or 2017-2022 Rogue Sport. Part listings may also include links to installation videos, warranty information, and related parts ("POWER STOP S7148"). Simple parts such as belts may not need product specifications, whereas complicated pieces such as brake calipers might require a great deal of information from

thread diameters to the materials it is constructed from. The nested hierarchy provides a step-by-step method for a customer to find the right part for the right application, while ancillary information such as how-to videos create a one-stop information shop.

The WCJC online catalog has a more open layout since it consists of items that do not have the same application restrictions as car parts. While there are standards for metadata used in various catalogs such as MARC or PIES, OPACs themselves do not have any particular standards (Joudrey and Taylor 110). Key access points include title, author, Library of Congress Subject Headings, and tags (“*The Taming of the Shrew*, Full Details”). Where available, series titles and other recommendations also serve as access points to other works (“*The Silmarillion*, Full Details”). These are standard for most libraries, as the creator of a work and the name(s) a work is known by are the primary means for looking up specific resources. The other points work for more general searches or related resources. For example, LCSH terms provide a controlled vocabulary that includes resources on the same subject while more informal vocabularies such as tags may be more familiar to the average user than the formal LCSH. These various access points allow users to find what they need in a number of ways with works relevant to a search collocated “even though they might not be brought together in the collection,” and the catalog also acts as a “location device to indicate where in the collection the item will be found, assuming it is not circulating to a user” (Joudrey and Taylor 18-19). In fact, built into the MARC record in the OPAC is information on where to find a particular source by collection, floor, and call number, which is combined with a flag designating whether it is in or out. For example, *The Taming of the Shrew* record shows that it is in the general collection on the second floor under the call number PR 2832.A2 T47 2003 / 070690, and it is available (“*The Taming of the Shrew*, Full Details”).

Comparison

Despite their seeming disparity, RockAuto and the J.M. Hodges Library OPAC have some similarities. Both have their own metadata standards – MARC 21 for WCJC, and ACES and PIES for RockAuto. And aside from the obvious fact that both are digital catalogs for a range of resources, both sites have search functions that allow users to query for a resource directly, as well as access points that can lead someone to a particular item based on a link trail. The metadata for both contain information needed to determine whether or not a resource is fit

for a particular application. The year/make/model metadata for a car part is similar to the subject headings and title of a work, while manufacturer and creator are also analogous. Both sites also contain metadata that refers to similar resources, such as other vehicles the part may fit and related supplies or subject headings, tags, and recommendations for further reading. Finally, both catalogs have unique identifiers for each item in their respective repositories; RockAuto has part numbers, and the library has call numbers.

Of course, there are also a number of striking differences. Car parts and books are quite distinct resources with little overlap in purpose. The library's MARC format uses a rather opaque hierarchy as part of its encoding standard, which includes a number of components, such as a leader, directory, control fields, and data fields (Joudrey and Taylor 253). RockAuto of necessity has a strict access chain with a customer-facing hierarchy that enables consumers to find the right part for their vehicles. ACES and PIES files primarily use extensible markup language (XML) files ("ACES and PIES"). Unlike MARC, XML is designed to be read by both humans and machines (269). The standard is designed to be easily used on the Internet, to support a wide variety of applications, to be compatible with SGML, and to make use of design that is formal, concise, and quickly prepared ("Extensible Markup Language"). Another interesting distinction between the two arises from their differences in purpose. Because RockAuto is an online-only entity, it has no information on where to physically acquire the items in its catalog. WCJC, on the other hand, lists materials in a physical location, and so includes data on how to locate any particular resource.

User Perspective

For e-commerce, metadata about products is crucial because a key factor influencing "buying decisions in online market[places] is the availability of sufficient information related to the product" (Hendrawan et al. 281). Proper metadata helps improve customer engagement and drive sales (Wilson). Improper metadata, on the other hand, can prove detrimental, particularly with technical products where consumers may not be sure exactly what they need, which creates a level of ambiguity that "increases the level of frustration and confusion that customers often encounter, which can make them reluctant to accept product offerings" (Wang et al. 1622). Although the RockAuto site looks like a remnant from the early 2000s, it handles this customer-product disconnect fairly well through its nested hierarchy, taking a customer through

the process step by step. There are some areas where that ambiguity may frustrate a user, however. The site assumes some level of technical knowledge in accessing parts that not all customers know, such as engine options, as well as the various part categories, which suffer from the same limitations of other controlled vocabularies – namely, that headings may not fit with the language people use in everyday situations. For example, air filters and throttle bodies are located under “Fuel & Air,” but an intake manifold, which is located just behind the throttle body on a vehicle, is found under “Engine.” Rather than clicking through the nested access points, users can search for parts via an onsite search engine, but it does not offer much of a distinction because the search box requires a specific query order: year, make, model, engine, and then part name. Any attempt to simply search for a part, such as “brake caliper for a Nissan Rogue Sport” will bring up a result list of universal parts rather than parts for that particular car (*RockAuto*).

The OPAC for the WCJC library also looks outdated, but it also serves its function. The search function is centered near the top, so it is easy to find, and the buttons with “Keyword,” “Title,” “Author,” “Subject,” “Series,” and “OverDrive” make the search options clear after a moment of study. However, the presence of a smaller, secondary search box at the top left offers some potential confusion. Tabs across the top allow users to search by various advanced options, including a series of “visual” links to search by categories and interests and curated lists of links. These links are not entirely useful, however, as they do not always work as advertised. For example, following Visual to General Interests to Fiction brings up a page of historical sources while “Reference” and “Primary Source” turn up empty (“Wharton County Junior College J.M. Hodges Library”) This leads to another odd issue with the access points found under specific resource listings – they do not work. The entry for *The Silmarillion*, for instance, includes links to *The Lord of the Rings* as related works and tags such as “fantasy” that bring up a page of other books with the same tag. However, clicking on any of the book titles takes the user back to the OPAC home page rather than an entry for that book (“*The Silmarillion*, Full Details”). Subject headings do actually lead to other works with the same subject, however (“*The Taming of the Shrew*, Full Details”). Much like RockAuto, the OPAC’s design and functionality detract from the user experience at times, but both serve their overall function well enough.

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