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Chapter 1 : OPC Data Historian & Trending - Control Consulting

THE HISTORIAN'S TOOLBOX The Historian's Toolbox: Skills for History Majors The Historian's Toolbox: Skills for History Majors Introduction "The Historian's Toolbox: Skills for History Majors" is a web based tutorial, which is created and sponsored by California State University (CSU).

Cantilever Cantilever toolbox Small portable toolboxes are sometimes called hand boxes or portable tool storage. Most portable toolboxes have one handle on top and a lid that opens on a hinge. Many have a removable tote tray that sits on a flange inside the lip of the box, with a single larger compartment below. The tote tray helps organize smaller parts and accessories. Portable toolboxes sometimes use slide-out trays or cantilever trays in lieu of the removable tote tray. Metal toolboxes typically steel weigh more than plastic ones. A plastic toolbox laden with tools can weigh the same as a comparable steel box does when empty. Metal boxes are also subject to rusting and their sharp edges can mark the surfaces of things they are banged against. Metal is, however, known for being stronger than plastic, so one should balance its disadvantages against the need to withstand abuse and support the weight of many tools. Portable chest Portable chests are a type of tool storage that is small enough to carry, but has drawers to organize contents. Portable chests have a handle on top for portability and a top lid that opens on hinges. Portable chests typically have drawers. Most are made from metal, but some have a plastic shell with metal drawers in order to help lighten the piece. A toolbox can also refer to a large tool storage system, or tool chest combos, that includes multiple pieces. These systems are almost always made from metal. Most tool storage systems are painted steel, but some are stainless steel and aluminum. They include a top chest that has drawers and a top lid that opens on a hinge. The top chest is designed to sit on a cabinet, also called a rolling cabinet, cart or rollaway. The cabinet sits on four or more casters and has drawers to organize tools. Other pieces can be added to the system or combo. A middle chest, also called an intermediate chest, can be placed between the top chest and cabinet for extra storage. A side cabinet with more drawers can be hung from the side of a cabinet. A side locker can also be hung from the side of a cabinet; usually with a door that protects shelves or small drawers. Craftsman tool chest Toolcarts also known as rollcabs are commonly used in the transportation industry for maintenance and repair of vehicles on location. Used as portable work stations, some of the larger types are self powered and propelled, for example, pit carts in automobile racing. After several decades of decline in popularity, today a resurgence in use is underway. Viewed by many as intended primarily for specialized craftsmanship, such as machinists, tool and die makers, jewelers and other specialized craftsmen, they are also sought after by average tradesman and collectors as working heirloom. Many toolboxes and chests from a variety of trades can be seen at the Smithsonian Museum of American History. Tool chests are primarily made of metal , though some expensive models are made of hardwoods. Alternatives to toolboxes[edit] A toolset in a plastic cover. These are molded plastic cases typically containing a variety of household or automotive tools. Each item snaps into a designated spot in the case, which makes organizing tools much easier than with a conventional toolbox. They are very compact, lightweight, and inexpensive relative to purchasing tools and a toolbox separately. There are two major disadvantages: Thus one still might need a toolbox in addition to the toolset. Though at the far extreme of portability, they are insufficient for storing a large number of tools. One might use a toolbox for permanent storage and a toolbelt or apron to take just what is needed for a job. They are used in locations where a worker needs access to more tools than he can carry with just his hands while working in a location with no place to set tools down, such as working on a ladder or hanging from a utility pole. A large single, or stacked metal cabinet with multiple doors that can accommodate large amounts of assorted light and heavy tools, as well as other repair equipment. These consist of rugged fabric or polyester bags draped into and around a 5-gallon bucket. They are lightweight, inexpensive, and can rival the toolbox as a means of storing and moving tools to a job site. Their dozens of pockets permit better organization, yet nearly everything is visible at first glance. That, however, could be a disadvantage as well, since one may have privacy or security concerns if the bucket has to be left in a public area. By contrast, toolboxes are often lockable and, obviously, opaque. In a vehicle, the bucket may be jostled and spill some of its contents. Tools

left outdoors are also better protected from the elements in a toolbox. For many purposes, however, a bucket organizer may be preferable to a toolbox. Before purchasing a bucket organizer, note that the bucket itself usually is not included. These are utility carts having a pivoting base for storage in vehicles. They are used by tradespersons to carry tools, equipment or supplies. They combine the advantages of toolboxes and toolbelts and are essentially portable truckboxes or transportable shopping carts. This is a tool cabinet with wheels, and, because of that, the tools can be easily moved from A to B. Usually you will find these mobile cabinets in workshops of mechanics. In computing[edit] The term toolbox is used in computing to represent a set of subroutines or functions and global variables. Typically these implement missing functionality using capabilities available in the core software.

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Chapter 2 : Welcome to My Activity

We would like to show you a description here but the site won't allow us.

Tools for the Traditional Cooper -Craftsperson, Hobbyist, Historic Interpretations- HGSSC ventures into supplying coopering tools and materials for craftspersons, hobbyists, and historical interpreters. About our new coopering tools and supplies: The Historical and Genealogical Society is delving into a new venture of coopering tool supply. We continue an unbroken tradition of coopering as practiced in Somerset County Sugar camps since the s and taught to a member of the Historical Society and staff member of the Somerset Historical Center in the early s by actual coopers who were the last of their coopering descendants. For more than 40 years we have offered historical coopering interpretations and coopering classes where more than persons have learned the basics of coopering. Now we have the ability to meet the needs of coopers, especially those trying to learn the craft and might have difficulty finding quality tools and materials. The original tools are becoming scarce and some tools on the market are just not serviceable. We have spent years trying to reproduce tools for use in our classes and for use in coopering demonstrations. We now have a craftperson who can reproduce many of these tools to our specifications using original examples found in Somerset County as patterns. These tools are hand-made individually so they each may vary slightly in size or design, but are some of the best coopering tool reproductions available today. This is a new venture for our small historical society to provide useable tools, share what knowledge we have learned over the years, and promote our museum. All profits will be used to support the educational programs, collections care, and historical interpretations of the HGSSC and sales will be administered through our Museum Shop at the Somerset Historical Center. We are proud to finally offer this nice variety of tools and equipment. We are certain that they will supply many years of service and help coopers to continue the traditional techniques of the craft. Questions about the tools may be directed via email to c-mware pa. Beginners will find our annual school of coopering a delight and in the three days learn the basics and craft a keeler that they will take home. We supply the tools, equipment, and materials, but the class in limited to 12 participants per year. It is held in late spring each year. All tools are patterned after originals found in Somerset County, PA, where a cottage craft coopering industry flourished to supply coopered containers for use in their numerous maple sugar camps. Our tools are hand crafted to our specifications by a local artisan. Some are kept on stock, while others are made as ordered. We will eventually have a full line of coopering tools and supplies for the craftsperson, hobbyist, or museum interpreter. They come sharpened, but may need a final honing for ultimate cutting. We do coopering demonstrations as part of our museum interpretation and teach a school of coopering each spring. These tools will help the novice or experienced cooper fill their toolbox with serviceable tools. Questions about the tools or their use may be directed to Mark Ware.

Chapter 3 : Historian's Toolbox

Written in an engaging and entertaining style, this widely-used how-to guide introduces readers to the theory, craft, and methods of history and provides a series of tools to help them research and understand the past.

Real-time data historian and visualization for the process, industrial, and energy industries. CCI Historian High performance OPC data historian capable of storing over a million tags and retrieving history at a sustained rate of 50 million values per second. CCI Historian is typically 10 to times faster at history retrieval than many of our more well known competitors. How can we possibly be so fast? By using a hybrid row and column in-memory database. Incoming data is stored in a row format for optimal write performance. Later the historian server automatically transforms the data into a column format for optimal read performance. During the transformation a highly efficient lossless compression is applied. This process happens in the background without affecting the running operation of the system. The result is the first enterprise historian that provides both the fast write performance of a traditional historian and the fast read performance of a dedicated big data analytical platform. The historian components can be deployed entirely on one server or distributed across multiple servers. Any combination of Windows and Linux servers may be deployed together. Regardless of the platform configuration you choose, CCI Historian can efficiently handle thousands of simultaneously connected clients. CCI Plot In our experience plotting is the most heavily used feature by operators, engineers, and managers alike, empowering them to make better operational decisions more quickly. Thus we designed CCI Cake with first class plotting at the heart of the system. Some of the key features include: For instance you can annotate trend plots with your comments, save these time stamped comments into the historian database, then later search for and recall your historical annotations. Users can create their own basic graphics without the need for any formal training. For example, live values can be added to a graphic by simply dragging an analog tag out of the menu tree and dropping it into your graphic. Likewise a trend plot can be embedded into your graphic by quickly dragging a previously saved trend plot from menu tree and dropping it into the graphic. Graphic behaviors may be customized using the powerful Python scripting language which is integrated into CCI Cake. The included libraries provide an unrivaled range of mathematical functions including modules for filtering, smoothing, spectral analysis, cross correlation analysis, and machine learning. A unique feature is that no distinction is made between on-line and off-line calculation scripts. Thus unlike most competing products, CCI Cake allows you to back-test and plot your calculations and metrics using past historical data prior to scheduling the same calculation code to run on-line in real-time. The entire process from development to deployment can be accomplished from a single integrated graphical environment. Suddenly real-time big data analytics are possible. Huge quantities of data can be fetched from the historian and analyzed by NumPy functions in seconds instead of minutes or hours. There is no need to extract, transform, and load data into a separate statistical modeling tool and database-- everything can be done on one platform. Unlike most data historian search tools that only search for tag names and their descriptions, our search tool provides a comprehensive search experience. In a single action it searches all tag, plot, graphic, and calculation objects for matches. It even finds the plot, graphic, and calculation objects that contain or use a specific tag name inside of them. Grafana lets non-technical users quickly build their own metric monitoring displays entirely from a web browser. Both live and historical plots can be included in your web dashboards, as well as metric calculation widgets that automatically change color based on operational targets. This can be used to create real-time monitoring displays or daily KPI reports that display aggregate values. Clicking on a failed metric target allows you to drill down for more details, helping you to quickly identify the root cause. For more technical users we provide IPython Notebook, a web-based application that allows you to do big data analysis entirely from your web browser. Since each IPython session is hosted on the server, your data analysis functions run in the same locality as the data itself. IPython Notebook is supremely flexible allowing you to build nearly any type of visualization imaginable including bar charts, pie charts, radar charts, heat maps, and 3-D plots. CCI Extract Historical data can be sent to Microsoft Excel providing users with a familiar environment for analysis and building personalized reports. When extracting data you can request raw

or aggregate values. You can write your own Python programs that access the historian database and deploy them anywhere on your network. Or you can use scripts to automate the building of new databases, tags, OPC interfaces, and GUI objects such as plots and menu tree folders. This allows for multiple sites to be quickly deployed and managed in a consistent manner with minimal administrative overhead. Each of these background scripts can be set to run based on a schedule or whenever specific tag values change in the database. Our event based architecture can monitor over , tag value changes per second. This can be used to create powerful analytical rules that notify users via e-mail or text message SMS when abnormal conditions are detected. Many of our customers have been able to install our software, setup an initial OPC data collection, and see their data appear on a live plot in less than 30 minutes. Simple Licensing We like to keep it simple. For one reasonable price you get unlimited tags, unlimited users, and all available features. By not forcing our customers to continually pay extra for features and licenses on a "per tag" or "per user" basis as nearly all our competitors do, our customers experience greater adoption and benefits from our software within their organizations. But CCI is no stranger to data historians. Our engineers have been serious users of data historian software ever since the genesis of the earliest data historians. The result is CCI Cake-- a historian providing the fastest data retrieval speeds possible, seamlessly integrated with the leading data analysis tools, and world class trending, with all components presented in a single intuitive user interface. To learn more about CCI Cake please contact us at sales controlconsulting.

Chapter 4 : The Process Historian â€“ A Great Tool for Process Improvement Â« Sylution OPEX Journal

Historical significance should be something that your group determines on your own, using your critical thinking skills, making connections to the larger course's themes in politics, economics, society, and culture.

Some historians continue to command the respect of their peers and their publishers at a considerable physical or intellectual distance from the unique manuscripts and papers usually associated with archival collections. Nevertheless, many professional historians associate archival research with their rite of passage into the profession. At some point in their careers most scholars have devoted several long weeks to the systematic examination of the carefully sorted primary sources in their chosen field of study. Few historians would disagree that the refereed article, monograph or scholarly study requires a range of evidence, some of which will be extracted from documents held in archives, and used as the basis of discussion and argument. Since the nature and format of records relative to particular subject areas and periods of history has changed little, so one might expect that the evolution of the associated archival skills of historians has been a slow process. This has probably been the case for decades, if not over centuries of historical and antiquarian study. This particular aspect of the discipline of historical study, however, is now subject to a process of great change. By no means does all investigation of the past require the consultation of the written word. Although diaries, letters, deeds, accounts, enrolments, depositions or notebooks might come to mind when archival collections are visualised, archives now contain film, photographs and sound collections. These sources lend themselves to particular types of research activity limited to the recent past by nature of the widespread adoption of such technologies as archival sources. Despite the non-paper format of this material, it is still likely to be identified and accessed through printed or published guides, finding aids, indexes, lists and catalogues. The process by which the documents were approached was traditionally explained in studies produced by archivists and administrative historians. The range and depth of this material varied, but as a body of work it was intended to provide a solid foundation upon which to build archival research skills. Other guides have appeared as the range of archival sources has expanded. Many archives also produce a range of more specific subject-based research guides, memoranda and source sheets. Others have complex introductory notes to specific document collections. These guides serve to steer historians through archival collections. They not only introduce series of documents and their interrelationships, but also offer some explanation of technical issues such as abbreviations, palaeography, archaic terminology and obsolete referencing systems. This corpus of information has been routinely accessible only through the collections in major libraries or in the archives where the documents themselves are housed. The process of background research, interpretation and consultation of original documents has in the past taken place within the scholarly environment of major libraries and archival search rooms. This activity was the essential preliminary stage in the approach of manuscript sources. However, fundamental changes are now happening to the way historians access archival collections and how they interpret archival sources. First, archival source material is changing from paper to born-digital documents, images and website content. In areas such as the preserved public records of government activity, archives are nearing the point where paper files cease to be the main materials accessioned from government departments. In future, databases, word-processed documents, archived emails, spreadsheets and digital presentations are more likely to form the archival sources upon which core aspects of national history from the late 20th century onwards must be based. This is a fundamental fact, and an immense departure from centuries of records management based on parchment and paper collections. TNA is taking rigorous steps to address the problems associated with the indefinite storage of, and future access to, digital government records. Contemporary historians are thus obliged to make a shift in approaches to the format of their primary sources, and future historians will have to follow. Second, digitisation of paper and parchment documents, both as part of major projects and as the routine business of archives, is altering how archival material is utilised by historians. Since many archives cannot lead on such bids because of their uncertain status as research institutions, partnership funding bids between the archival and university sectors are now common. Although this relationship has existed for decades, the rise of affordable digital technology and the

opportunities of access presented by the Internet are driving new strategic relationships between historians and archivists in the formatting and accessibility of archival collections. To some extent, historians are now far more involved than before in the presentation of archival material to research audiences. Such a reduction in the distance between archival and historical research activity is very welcome, and will strengthen the basis for future collaboration between sectors. Where sophisticated digital ontologies are mapping relationships between strands of data, the research possibilities of groups of manuscripts previously seen individually in their original format are now expanding at a bewildering rate. For example, the Anglo-American legal tradition website at the University of Houston now contains over 2 million digital images of medieval and early modern English legal records from the central law courts at Westminster. These images are accessed via a no-frills website without metadata or search functionality and are arranged by the court, regnal year and law term to which they relate. In order to get the most from this resource, users still require the requisite traditional interpretative archival skills in Latin, Anglo-Norman French and palaeography, and experience of the abbreviated format of the documents created by the medieval legal system. Without accurate reproduction of the original internal manuscript referencing structure, it also becomes harder to cite such images as if one had consulted the original. The inferred emphasis from the website owner is that the online surrogate of the document, and not its parchment original, should be cited by historians using the resource. This problem presents difficulties of its own, yet the key advance remains: The Fine Rolls example above demonstrates what can be achieved when historians, archivists and technologists co-operate productively. The Anglo-American legal tradition site shows how digital technology now enables a very small number of researchers to capture vast amounts of data â€" in this case unadorned document images. With the right type of sustained backing from a stable institution, striking developments in access to the archival resources available to historians are now within the compass of determined individual scholars. Technology is facilitating great leaps in the development of systems for constructing search functionality. We might be nearing the point where off-the-shelf toolkits become available for local archives and history societies to produce and maintain their own document-based websites and search databases. Since the pressure upon historians to secure financial backing for research projects means that competition for major project funding has never been fiercer, a possible route for further collaboration between historians and archivists is to grasp this affordable technology and create resources tailor-made to specific research projects or groups of sources, without the need to rely on the lottery of major grant applications. Potential difficulties are presented by this rapid expansion in digital technology. As archives give permission for digital images of entire document series to be captured by individuals, or licensed for publication as web-based resources, it might become harder for historians to secure funding for major analytical projects if digital versions of the relevant documents already exist as part of unrelated websites. Although the medium of print offers limited access when compared to web-based resources, it remains a format that has proved to be stable. If, as seems likely, online archival sources proliferate expansively, and remote viewing of digital document images becomes a mainstay of access to archival collections, should not some central agency co-ordinate the preservation of this digital information? Whereas AHDS stored data, there is not yet an equivalent repository for data and digital images generated by funded research projects. There has been remarkable investment from grant giving bodies in various fields of historical research. The digital products of this support represent resources upon which the entire community of historians can draw, but at present the long-term sustainability of, and access to, these resources remains unclear. Without careful consideration and discussion between individual grant holders, universities, research councils, grant giving charities, archives and IT systems developers, datasets and digital images might become locked into obsolete software formats and rendered inaccessible as technology moves on rapidly. Historians and archivists have much work to do in order to make digital resources both sustainable and accessible in the long term. The arrival of unique digital records and digital surrogates of existing paper material is forcing a change in the processes through which archived documents are accessed. While developments in accessibility might allow historians to draw archival references together more productively, the main priority for archives that are producing digital images of their collections â€" either through licensed partnerships, or from their own resources â€" is to create full descriptions and comprehensive search

functionality. The fuller the archival description of documents, the easier it is for historians to devote their analytical and interpretative training to unlocking the evidence that those documents contain. The advent of born-digital records and digital surrogates has driven the development of searchable catalogues, both for documents that have been converted into digital format, and those that remain in their original form. Catalogues and indexes therefore remain the keys to accessibility. All archives are now working to improve the level of detail and contextualisation offered by the descriptions of the records that they hold. Where online catalogue descriptions of documents are particularly full, the need to consult original papers or manuscripts diminishes. Most historians require the information contained within source material, and if that can be supplied in surrogate or comprehensively summarised form, then the need to view the physical primary source becomes less necessary this was always the function of published calendars. The almost incomprehensible volume of information on the Internet, and the speed with which relevant documents can be located, is also affecting the expectations of those engaged in archival research. The proliferation of online catalogues has created the mistaken assumption that all archival documents are fully described and accessible through electronic, web-based catalogues. This is not the case, since conversion and restructuring of existing lists and indexes is a complex and resource-intensive process for archives. Many decades of such activity lie ahead, even in the best resourced archives, before online catalogues come to represent a complete inventory of particular archival holdings. This assumption does not really arise among those historians who have laboured previously with paper and manuscript lists in archival search rooms. Their skills have had to become more adaptable as the possibilities of new technologies have been embraced. For those who have entered their careers with access to online catalogues and documents as a familiar basis for their research skills, the adjustment to paper indexes found only in archives, contemporary registry systems and layered arrangements of former references can be something of a shock. A new archival skill historians must adopt relates to the process of gaining accurate information on the completeness of online catalogues when compared to more comprehensive lists that existed in paper form. Scholars have always balanced their willingness to trawl archival collections against the level of detail contained in catalogues and indexes. The most dramatic archival development of the past 15 years has been the phenomenal rate at which the Internet has permitted linked catalogues to comb through the descriptions of several collections at once. The Access to Archives A2A website , for example, links electronic catalogues of around archives within England and Wales. Navigating these websites under a single keyword produces in seconds what, only ten years ago, would have taken months to achieve by page-turning and physical travelling between institutions. Since no standard has yet been adopted for the structure and presentation of digital image collections, some difficulties are emerging as systems are developed for specific, rather than universal, audiences. Such editions were the pre-digital equivalent of the websites and databases that are now revolutionising broad access to archival information. There are now numerous examples where search engines developed primarily for commercial and mass-market appeal often do not serve the academic historian fully. For example, the data involved in indexing the online versions of the â€” census records, runs to tens of millions of names for each survey. Yet the search options are constructed around genealogical investigation. Historians hoping to use the English and Welsh census to facilitate possible scholarly studies of people engaged in particular trades in a town, migration, social mobility or surname distribution, will have to work hard to extract data from resources constructed for single name searching. Clearly, the need to generate income makes this genealogical approach an economically sustainable option. It does, however, limit the broadest utility of some digitised documents, and this trend has not benefited academic historians as well as it might have done. Several catalogues have employed inconsistent standards to the entry of keyword data upon which searches are based. Searching for early wills on the DocumentsOnline site, for example, frequently requires practical knowledge of the variants of medieval and early modern spellings of personal names, since searches will only return results if the search terms match exactly the catalogued content or its stem. This is also the case in other catalogues, where results might be missed unless alternate spellings of search terms are considered. The skill levels historians need in order to interpret and analyse manuscripts have remained consistent throughout these developments in the format though which documents are studied. Digital catalogues have focused primarily on problems of access

to manuscript collections; especially where previous arrangements have been explained as part of the process. The skills required to interpret and analyse the contents of web versions of documents remains less well developed, since generic help is difficult to present in anything but a basic level within online resources. The onus remains with historians to acquire and extend the skills they need to extract the required evidence from relevant documents. For those historians who already possessed mastery of their documents, the digital world of access to, and presentation of, primary source material has made few new demands on their fundamental skills in administrative history, languages and diplomatic, etc. The process of understanding the content and context of the documents under investigation is becoming something that historians no longer have to attempt within archives to the same extent as they have done in the past. Although a gross generalisation, digital technology is allowing this phase of the research process to be conducted in front of a computer rather than before a manuscript or departmental file. The ability to capture hundreds of digital images in a day in those archives that permit free use of digital cameras has certainly altered the focus of archival researchers. The massive transformation underway in access to archival information should not cloud the fact that the discipline of history still requires the full range of analytical and interpretative skills that have always been at the core of the best type of archival research. The format through which primary source material is accessed is certainly changing: The content of these texts and documents remains the same, so in one sense the interpretative archival skills necessary to decipher them are unchanged. There is no doubt that the best Internet resources for historical investigation are revolutionising access to texts and documents and developing the way in which archives are used. With most historians physically distant from major archival collections, it is easy to understand why comprehensive and accurate resources such as British History Online BHO have become so well used and respected within certain research communities but not all historians are so well served.

Chapter 5 : Toolbox - Wikipedia

The Historians goal is to be as objective as possible when interpreting history. Idealist Historians-"emphasized that history was really contemporary, here in the present, and autobiographical, about the historian's mind and ideas in the present as much as about the historian's topic in the past.".

His speculation about what would have happened if Alexander the Great had marched against Rome represents the first known instance of alternate history. The Spring and Autumn Annals , the official chronicle of the State of Lu covering the period from to BCE , is among the earliest surviving Chinese historical texts arranged on annalistic principles. Sima Qian around BCE was the first in China to lay the groundwork for professional historical writing. His written work was the Shiji Records of the Grand Historian , a monumental lifelong achievement in literature. Its scope extends as far back as the 16th century BCE , and it includes many treatises on specific subjects and individual biographies of prominent people, and also explores the lives and deeds of commoners, both contemporary and those of previous eras. Writing history was popular among Christian monks and clergy in the Middle Ages. They wrote about the history of Jesus Christ, that of the Church and that of their patrons, the dynastic history of the local rulers. In the Early Middle Ages historical writing often took the form of annals or chronicles recording events year by year, but this style tended to hamper the analysis of events and causes. With numerous conflicting narratives regarding Muhammad and his companions from various sources, scholars had to verify which sources were more reliable. To evaluate these sources, they developed various methodologies, such as the science of biography , science of hadith and Isnad chain of transmission. They later applied these methodologies to other historical figures in the Islamic civilization. Famous historians in this tradition include Urwah d. Enlightenment[edit] During the Age of Enlightenment , the modern development of historiography through the application of scrupulous methods began. Painting by Pierre Charles Baquoy. French philosophe Voltaire â€” had an enormous influence on the art of history writing. He was the first scholar to make a serious attempt to write the history of the world, eliminating theological frameworks, and emphasizing economics, culture, and political history. At the same time, philosopher David Hume was having a similar impact on history in Great Britain. In , he published the History of England , a six-volume work that extended from the Invasion of Julius Caesar to the Revolution in Hume adopted a similar scope to Voltaire in his history; as well as the history of Kings, Parliaments, and armies, he examined the history of culture, including literature and science, as well. He was also one of the first historians who understood the importance of general and universally applicable ideas in the shaping of historical events. Because of its relative objectivity and heavy use of primary sources , at the time its methodology became a model for later historians. This has led to Gibbon being called the first "modern historian". Biographer Leslie Stephen wrote that thereafter, "His fame was as rapid as it has been lasting. Thomas Carlyle published his magnum opus, the three-volume The French Revolution: A History in This model of human progress has been called the Whig interpretation of history. Michelet was one of the first historians to shift the emphasis of history to the common people, rather than the leaders and institutions of the country. Another important French historian of the period was Hippolyte Taine. He was the chief theoretical influence of French naturalism , a major proponent of sociological positivism and one of the first practitioners of historicist criticism. Literary historicism as a critical movement has been said to originate with him. According to John Lukacs , he was the first master of cultural history, which seeks to describe the spirit and the forms of expression of a particular age, a particular people, or a particular place. The work traced the development of the English constitution from the Teutonic invasions of Britain until , and marked a distinct step in the advance of English historical learning. In his conception, the economic conditions and dominant modes of production determined the structure of society at that point. Previous historians had focused on cyclical events of the rise and decline of rulers and nations. Professionalization in Germany[edit] Ranke established history as a professional academic discipline in Germany. The modern academic study of history and methods of historiography were pioneered in 19th-century German universities. Leopold von Ranke was a pivotal influence in this regard, and is considered as the founder of modern source-based history. Beginning

with his first book in , the History of the Latin and Teutonic Peoples from to , Ranke used an unusually wide variety of sources for an historian of the age, including "memoirs, diaries, personal and formal missives, government documents, diplomatic dispatches and first-hand accounts of eye-witnesses". Over a career that spanned much of the century, Ranke set the standards for much of later historical writing, introducing such ideas as reliance on primary sources empiricism , an emphasis on narrative history and especially international politics aussenpolitik. His credo was to write history the way it was. He insisted on primary sources with proven authenticity. In general, Whig historians emphasized the rise of constitutional government , personal freedoms , and scientific progress. The term has been also applied widely in historical disciplines outside of British history the history of science , for example to criticize any teleological or goal-directed , hero-based, and transhistorical narrative. The French Annales School radically changed the focus of historical research in France during the 20th century by stressing long-term social history, rather than political or diplomatic themes. The school emphasized the use of quantification and the paying of special attention to geography. Marxist historiography developed as a school of historiography influenced by the chief tenets of Marxism , including the centrality of social class and economic constraints in determining historical outcomes. Friedrich Engels wrote The Condition of the Working Class in England in , which was salient in creating the socialist impetus in British politics from then on, e. A circle of historians inside the Communist Party of Great Britain CPGB formed in and became a highly influential cluster of British Marxist historians , who contributed to history from below and class structure in early capitalist society. World history , as a distinct field of historical study, emerged as an independent academic field in the s. It focused on the examination of history from a global perspective and looked for common patterns that emerged across all cultures. He took a comparative topical approach to independent civilizations and demonstrated that they displayed striking parallels in their origin, growth, and decay. McNeill wrote The Rise of the West to improve upon Toynbee by showing how the separate civilizations of Eurasia interacted from the very beginning of their history, borrowing critical skills from one another, and thus precipitating still further change as adjustment between traditional old and borrowed new knowledge and practice became necessary. L Brown , a professional historian of Late Antiquity and the Medieval period. An undergraduate history degree is often used as a stepping stone to graduate studies in business or law. Many historians are employed at universities and other facilities for post-secondary education. Publication is increasingly required by smaller schools, so graduate papers become journal articles and PhD dissertations become published monographs. The graduate student experience is difficultâ€”those who finish their doctorate in the United States take on average 8 or more years; funding is scarce except at a few very rich universities. Being a teaching assistant in a course is required in some programs; in others it is a paid opportunity awarded a fraction of the students. Until the s it was rare for graduate programs to teach how to teach; the assumption was that teaching was easy and that learning how to do research was the main mission.

Chapter 6 : Coopering Tools

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It has one function it gathers real-time data from control systems, compresses the data for massive storage, and stores the control system data and a time stamp electronically. The historian also provides a method or way to query the data to pull time series information for display or use. Basic Process Historian Functionality The process historian came about as digital control systems began replacing pneumatic controls. As the old bench boards of pneumatic hand-stations were tossed for computer based Operator Interfaces all that was left were the chart recorders. They fumbled the ball on the electronic replacement of chart recorders by not providing longer storage and more flexible trend tools â€" but many others companies did not. That is why the modern electronic process historian still has the basic functionality to gather, time stamp, compress, store, and provide a method of retrieving the data from the historian. Along with the actual historian software all historian vendors also provide trending tools to duplicate the chart recorders. Hence the historian provides the long-term data of how the process was running and the trend software provides the replacement for the chart recorder to the operator. Not too many years back all trending software was proprietary and tied to proprietary historian. Open tools like HMI human-machine interface , Manufacturing Intelligence software, Performance Management Systems, and a plethora of trending, reporting and other independent tools can all connect to any process historian data using the OPC standards. How do you compare the quality of one historian to another? When a vendor discusses the quality of a historian there are only three areas to consider. First and most important is how well the historian performs the basic functionality of a historian in gathering, time-stamping, compressing, storing and their ability to retrieve data. Not all popular historians are fast at storing or retrieving data and some rebuild data based on interpolation of what was stored â€" not the actual values. This is not a problem for most of the industrial manufacturing uses of historian to see trending of temperature, pressure, level of process data. However, for some companies that want to use the historian as tool for root-cause analysis of months of very high speed data that is being stored â€" reporting may be slow and interpolation may hide real data points. First and foremost make sure that the historian is fast enough at storing and retrieving data for your application. This is interesting because some of the older, more expensive, more proprietary systems have years of adding features to enhance the user experience with the historian and they usually have good but proprietary trending and analysis tools. Some of the extras that should be considered are things like redundancy of historians, store and forward, and the ability to easily calculate and store min, max and averages of tags. My experience is that few plants need this capability but many managers are conservative and think they need it. So, these features are worthless if not needed but may dictate your historian choice if they are necessary. Betting Against Everybody Else The third area of attention should be use of industry standards. If the historian will not read data from an OPC server â€" that is not a good thing. If the historian will not render data to an OPC server that too is a problem. User tools are important and it is known that some of the big boys of process historian world have some pretty good proprietary historian tools. However, a client has to know that a historian that has to have multiple extra layers of software servers to get to an industry standard is betting against the rest of the world. Today there are hundreds of third party programs from loop tuning to SPC to trending to Excel reports that are built to read data from any OPC compliant historian. This does not need to be overemphasized because you can get servers to work with almost any historian â€" but many uses are not aware of the vast array of their party tools that work with historians. Clean methods of getting data into and out of the historian and seeing it in a Trending or Reporting tool that works is very important. Today, the SD drive in my cell phone stores twice the data as our process historian hard drive. Clearly data compression is not as important as it once was but the other side to this is that good historians can be cheap and small and even distributed. Today, another global automation company makes it too attractive to use their data historian along with the PLCs â€" yet they have one of the slowest and worst rates of retrieval of any historian. This said â€" process historians can be inexpensive from specialty

companies that have been in business for many years. Before buying the historian being marketed by the global automation company take a look at Canary Labs. You may get a better historian for half the cost. Use of the Process Historian We have already mentioned two of the primary uses of the process historian. One is to provide long-term storage of process data that may be needed for compliance. Another is to provide trends of process variables in a continuous process for the operations team. Implied earlier in this article was the use of the historian trending and data by people other than the operators. A major market for historians and historian tools is to provide a view of process information that allows engineers, management and experts remote from the process to see how the process is running and where improvements are needed. The ability time shift a trend and layer it with other trends of process variables is an excellent way to see cause and effect in a process. These are all strong uses of a process historian. Beyond process data an excellent use of a historian is to collect and store energy use, effluent discharge, waste discharge rates, sewer and potable water information. The data can pulled from the historian and correlated by the time stamp to show excellent reports of average and total energy use, steam use, or waste by shift, day or month. Many companies use Excel or other reporting tools to produce reports. The most important consideration for the use of a historian is that you are working with time-series data in every case. The human adds the Intelligence to the system. There are process experts that advocate surrounding the operator with displays of hundreds of process trends with the reasoning that by seeing them day in and day out they will detect a difference and act upon it when there is a problem. But I have seen this used in a pulp mill where the operations team was happy with the result. However, other classes of software solutions have been released to manufacturing and the process industries so that it is not obvious today that all manufacturing sites will ever need a true process historian. What a Process Historian is Not Just as the process historian was the tool of the s for much of our reporting and process understanding â€" performance management, manufacturing intelligence, and manufacturing execution systems MES can collect and correlate some manufacturing data better, faster and more intuitively report it in an actionable format. A process historian is not a relational database. Here is a short list of systems that are distinctly different than a historian. Real-time Performance Management Systems â€" these systems are built on relational databases and configured with a model of the plant systems defining machines, systems, and intelligence needed. Data is collected and key performance indicators are calculated in real-time. The defined key performance indicators are stored in a relational aspect to the system and stored to produce downtime, OEE, TEEP, batch management, labor tracking and more by machine, line, shift, order, product and more. These systems can provide intelligence, i. They also interface to process historians to show trends in their reporting where appropriate. Manufacturing Intelligence System â€" A manufacturing intelligence system is a product of data connectors and a portal system for users to build dashboards. The system collects data from many disparate real-time and historical data systems, including the process historian, to present information in a dashboard without having to store all the data in one system. Status can be used in this sense for a low-cost, effective manufacturing intelligence system. Manufacturing Execution System â€" An MES is a system that is configured based on a model of the plant and a relational database. Data is gathered from control systems and it often includes, or is connected to, the scheduling system to allow the MES to track and trace all materials and labor used against an order. The MES gathers and stores all aspects of production on an order. In Closing The process historian is an excellent, useful tool for storing large amounts of process, time-series data and being able to present it to the user in the form of a trend or report. Most process facilities need a historian and they usually have excellent payback in ROI based on finding problems. When a historian is the right tool for your need â€" there are many choices and the lower cost solution is often a better product than the higher priced system. Canary Labs historian is an excellent moderately priced tool.

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A historian is a person who studies and writes about the people and events of the past. Historians find out how people lived, what hap-pened to them, and what happened around them.

These are the questions you should ask yourselve when choosing a topic to write about: Will it mantain your interest? Do I have the necessary background and course work in the subject? Is this topic something that historians have written about or is this just a personal interest? Are there primary sources available? Is it to contemporary? Is it actually considered historical? Is it too big? Does the topic present a good question that fills a gap or atleast takes a side on a historical topic? Will it makes a good story as well as a convincing argument that I any common person who is not familiar with history could understand? Reading History Do not try to read everything. First reading the bibliography and introduction abstraction to be able to see how good of a book or article it is. Consult the good books frequently, rereading is essential. Take good notes Just like Professor Stecker said use 3 x 5 cards to take notes for each source. Making sure to include quotations around borrowed words and phrases. How to write a good research paper. Choose something that you find interesting reading quickly and widely for info. Ask a question that you feel that you might be able to answer. Search and research the topic. Reading and rereading sources and taking good notes on your cards. Have some sort of organization to your note cards. Investigate the historography of your subject. What have historians in the past thought about your subject? Read quickly and widely at first and then more selectively and carefully 6. Does your argument fill a gap. Write a first draft and second and third. Write a final drafts. Avoid the passive voice. Would you want it published? Are you proud of it?

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A toolbox (also called toolkit, tool chest or workbox) is a box to organize, carry, and protect the owner's tools. They could be used for trade, a hobby or DIY, and their contents vary with the craft of the owner.